

Cleantech: Navigating the road from concept to market for start-ups



How can NZ cleantech businesses help secure the future of the planet and maximise the opportunities cleantech presents?

Four leaders from New Zealand's cleantech industry were invited by Callaghan Innovation to speak on the opportunities available in the waste-to-value space at a virtual event in November 2020.

'[NZ Cleantech for the World](#)', was hosted by Callaghan Innovation's lead for climate innovation, James Muir, who was joined by:

- [Shalini Divya](#), Co-Founder and Chief Technology Officer at TasmanION
- [Ashton Partridge](#), Chief Science Officer at Manufacturing Systems (MSL)
- [Sean Simpson](#), Chief Scientific Officer and co-founder of LanzaTech
- [Veronica Stevenson](#), Founder and CEO of Humble Bee

Callaghan Innovation CEO, Vic Crone, had just prior to this discussion laid down an ambitious challenge - setting a goal for New Zealand to earn its place in the [top 10 countries in the Global CleanTech Index](#) by 2022.

Struggles with raising capital, securing global trials, lack of long-term thinking, hesitancy to collaborate early on and the risks of R&D were among the challenges that Kiwi cleantech innovators face.

The panellists shared their tips and advice on how startups can navigate these challenges and achieve global growth.

The challenges

There is a lack of knowledge surrounding how to raise money and commercialize technology

Many Kiwis have planet-saving ideas, but often NZ innovators can struggle with the financial means, expertise and connections to commercialise these ideas. The panellists said they're seeing cleantech startups failing in pre-seed development due to a lack of exposure to expertise and funding.

Exacerbating this challenge is the fact that cleantech R&D holds risks and barriers around financing. Investors often want early-stage business founders to have a high level of shareholding to ensure they are incentivised. This puts a lot of personal and financial risk on founders. Furthermore, universities need access to knowledge on how to raise money and commercialise their technology.

Callaghan Innovation is developing its services to help turn more cleantech innovation into world-leading businesses with commercialisation support. As part of this, it supported the launch of a first of its kind Climate Response Accelerator in May, run by Creative HQ. The programme will mentor and connect eight cleantech innovations through the commercialisation journey.

Early-stage NZ cleantech businesses are having difficulties securing global trials

The panellists also noted that a lack of international connectivity holds Kiwi innovators back as the biggest demand holders are overseas. These demand holders include multinational corporations looking to adopt new innovative technologies or processes to minimise their climate impact.

New Zealand being both geographically isolated and less connected to corporations makes it difficult to attract the attention of international stakeholders. Overseas stakeholders are often not well-informed of NZ cleantech businesses, which can lead to Kiwi innovators missing out on international opportunities to secure global trials.

By creating innovation hubs, innovation outposts abroad, or centres of excellence for niche technologies Aotearoa can help overcome this problem and put New Zealand on the map and attract talent and investors.

A lack of long-term or big-picture thinking is holding Kiwi innovators back

Investors and demand holders who may invest in, or adopt new innovative ideas are often looking for solutions which can be applied across the globe.

Kiwi cleantech innovators need to be thinking globally, to both achieve the maximum positive impact and to seize the significant international opportunities in this space.

One of New Zealand's most successful global cleantech businesses is [LanzaTech](#), of which panellist Sean Simpson is a co-founder. Established in 2005 in Aotearoa, LanzaTech takes industrial waste gases and turns them into jet-fuel.

LanzaTech is now operating at industrial scale and has raised US\$350m in the last 15 years. LanzaTech hit the mark by innovating for a global market and providing an international aviation waste solution in biofuels.

Hesitancy to collaborate early holds back innovators

Many innovators have adopted the mindset of keeping ideas or development under wraps in the early stages. In New Zealand, a lack of fair, uniform and transparent IP policies further fuels this mindset. This holds innovators back from being openly able to collaborate with other companies.

Networking offers companies that don't compete technically with an opportunity to collaborate and grow. Developing meaningful relationships with such networks takes time, effort, and credibility. On the plus side, these networks - especially in the cleantech space - are becoming more visible and open to working with others.

Incentives are needed to outweigh the prominent risks of cleantech R&D

Legislation can be a barrier for new disruptive technologies such as sustainable fuels or biotechnologies. On the other hand, clever legislation can incentivise cleantech innovation. Legislation can drive pressure throughout the entire supply chain, both from the consumer and the regulatory end.

Having an integrated government approach to cleantech legislation will help cleantech businesses to be more successful, create more cleantech jobs and support the COVID-19 economic recovery. Implementing climate impact incentives might help cleantech businesses to become more cost competitive.

Existing resources, tools and potential solutions

Tech Incubators and Accelerators

At Callaghan Innovation we offer [Tech Incubators](#) and [Accelerators](#). Tech Incubators invest in, and actively help commercialise technologies, and accelerate product development. Our incubators concentrate on taking your concept to the next level by building a business around the technology – with the aim of growing globally competitive hi-tech businesses.

Accelerators focus on rapid and intensive product development to establish an investment-ready startup. We have access to four accelerators ranging from Māori-led enterprises to Agritech startups.

Reports and research

Our report – [The New Waste To Value](#) - identified the opportunities and challenges presented to cleantech innovators in Aotearoa. It showcases many business case studies as a roadmap to cleantech success.

The report also includes examples of how NZ government agencies have supported cleantech businesses with incentives and support systems. These agencies include Auckland Unlimited, Callaghan Innovation, Ministry for the Environment, New Zealand Trade & Enterprise, and Scion.

We have a new report, NZ ClimateTech for the World, due for release in mid-2021. It is the most comprehensive research completed on NZ cleantech to date, benchmarking Aotearoa's performance in this space against other small, advanced economies (SAEs) around the globe.

Networking and connecting with other cleantech businesses

Callaghan Innovation has several approaches to assist collaboration. [Scale Up NZ](#) is one such place for cleantech businesses to connect in New Zealand. We can connect you with our national and international networks and use our partnerships to help grow your ideas and introduce you to like-minded businesses.

We partner with other government agencies to help innovators at varying stages to scale up or grow where they need. Presently, we're working on a partnership with NZ Growth Capital Partners, Science for Technological Innovation, Auckland Unlimited and New Zealand Trade and Enterprise to advocate, deliver, and partner for new initiatives to lift NZ cleantech.

Facilities like [OutSet](#) (previously known as LevelTwo) also foster NZ cleantech innovators to be independent, free-spirited and truly innovative.

Mentoring, facilities and expertise

Gaps in expert knowledge are thought to be contributing to a lack of competitive Kiwi cleantech companies when compared globally. This is a focus area for Callaghan Innovation as we [actively fund access to experts](#) for startups.

Callaghan Innovation offers support to startups and innovators by helping to identify the expertise you need and connect you with our national and international networks. We'll provide you with access to shared facilities to help you take your idea to commercial reality, including expertise from our people including more than 200 of New Zealand's leading scientists and engineers.

Aligning key ecosystem support services

Callaghan Innovation is leading a Climate Innovation Mission, alongside government, investment and research partners. The aim is to better align resources, focus, support and goals in the cleantech space so that we can create the best environment possible to grow our local cleantech on the global stage. Keep an eye out for news on the outcomes of this.

If your business wants to take innovation to the next level, we can help – whether that's by providing advice, contacts, expertise, or funding. If you're looking to get involved in cleantech, [contact us](#) for more advice.