NEW ZEALAND CLEANTECH REPORT 2026

PROFILING THE CLEANTECH SECTOR

PREFACE

As a start-up CEO and co-founder who is (hopefully) operating at the forefront of this ecosystem, I see daily the depth of innovation emerging from our science, engineering, and entrepreneurial communities - and the international relevance of what is being built here.

What always stands out is the scale of opportunity. The potential to enable and deliver meaningful emissions reductions globally, not just what we achieve directly here in Aotearoa New Zealand, while strengthening our own energy security and supply chain resilience, positions New Zealand as a credible contributor to a low-carbon transition.

The New Zealand Cleantech Impact Report 2026 reinforces that conviction: a broad range of compelling technologies are not only moving steadily towards commercial viability but already delivering impacts that could be genuinely essential to solving some of the world's most pressing climate and resource challenges.

At the same time, the data highlights a familiar tension - world-class innovation constrained by access to investment capital that aligns to the specific challenges of pre-commercial scale-up.

Despite this, the sector continues to grow, attract investment, and build capability at pace. This is a strong foundation. With the right alignment between innovators, investors, and government, New Zealand has a clear opportunity to translate this momentum into globally significant companies and export-led growth.

The future is not hypothetical - it is already being built. The task now is to accelerate it.

Let's embrace and foster a culture of collective "ruthless positivity" to get us there...

Dr Trevor Stuthridge

CEO and Co-founder

Cetogenix

The **New Zealand Cleantech Impact Report 2026** is sponsored by **The MacDiarmid Institute** and has been developed as a collaboration between the five authors who work within the New Zealand Cleantech innovation ecosystem. The views, opinions, findings, and conclusions or recommendations expressed in these papers and articles are strictly those of the authors. They do not necessarily reflect the views of the MacDiarmid Institute.

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EXECUTIVE SUMMARY

New Zealand cleantech startups are solving global-scale problems with locally developed science.

New Zealand has a pipeline of globally competitive cleantech companies capable of delivering substantial climate and economic impact. In time these companies have the potential to become a cornerstone of our national economy, but only with further support and immense effort will the scale of that impact and economic transformation meet its true potential.

Key Findings:

1. Innovators have the potential to deliver enhanced energy security, supply chain resilience and critical materials access alongside a substantial sustainability impact.
2. New Zealand cleantech innovators are solving global challenges that promise to produce substantial reductions in international GHG emissions.
3. New Zealand innovators are scaling quickly, with the need for capital outstripping supply.

This study estimates the forward-looking emissions reduction potential of innovators solving climate challenges, and provides an update on the economic dynamics related to Cleantech innovators developing technology locally for the international market.

The potential to reduce Greenhouse Gas (GHG) emissions equates to 19.2 million tonnes of CO_2 equivalent per year by 2030 from international deployment of nine companies alone. This would be equivalent to roughly the same potential draw down of the entire NZ forestry sector using Climate Change Commission estimates. With the vast majority of companies claiming to have a positive net effect on GHGs, the potential impact of the sector at scale would make a meaningful impact on reducing global emissions.

Cleantech investment has pulled back internationally and similarly the New Zealand Cleantech innovators have had to respond to tight capital markets in the two years since our last report. The opportunity to scale companies' impact rapidly and globally now needs to be matched with access to international capital similar to other small, advanced economies. Innovators currently raise less than one eighth of that raised by their peers in other small, advanced economies but show the ability to deliver competitive technology solutions.

Despite the challenging environment, the companies surveyed reported:

- Raising $173.8 million in private capital ($68.6 mil FY25 and $105.3 mil in FY26);
- Employment of 943 FTE with 93% of these employed in New Zealand;
- Salary spending of $43.5 mil FY25 and $50.7 mil FY26;
- Received $29.8 mil in grant funding over two years, including 28% of that from international sources (excluding the $35 mil announced for OpenStar Technologies recently);
- Spending $42.6 mil FY25 and $43.9 mil in FY26 on R&D;
- Spending $11.7 mil FY25 and $20.5 mil in FY26 on capital equipment and capitalised software systems;
- Revenue of $60.3 mil FY25 and $77.9 mil FY26 (growth of 29%) despite the majority (67% of companies) being pre-revenue.

Cleantech has been the top performing sector in capital raising for 2025 compared to other technology sectors in New Zealand but has not met its full potential. For capital raised, companies achieved only 21% of the totals that they aimed for in 2024 (n=26) and eleven companies that aimed to raise capital in 2025 have deferred raising for a year or more.

For this report we identified 158 companies through local innovation support networks that offer sustainability-related technology solutions and invited these to share commercial and impact data. Surveys elicited 52 responses with commercial data and an invitation to calculate future avoided GHG emissions received nine forward-looking emissions profiles using the Carbon Reduction Assessment for New Enterprises (CRANE) tool hosted by Prime Coalition.

Companies across this national portfolio offer benefits to the New Zealand economy of enhanced energy security, supply chain resilience in the face of disruptions, (e.g. during a gas supply crunch), and offer industrial and corporate partners a return on investment while continuing to pursue major sustainability impacts.

Recommendations to enhance the impact and commercial success of New Zealand Cleantech Innovators:

New Zealand ranks highly for human capital, research and business sophistication[1] with an opportunity to enhance commercial performance.

- Investors, local and international financial institutions with a focus on sustainable finance, and New Zealand's global trading partners should actively partner with New Zealand Cleantech companies to enhance the mutual opportunity of delivering impacts at scale.
- Global Impact Investors should come and explore the promising innovations that New Zealand is rapidly producing

Impact investors are seeking better data about potential impact from innovators, and the leading CRANE tool provides a standardised approach.

- Local companies should engage with quantifying future impacts such as GHG emissions reduction and communicate these with investors and the New Zealand government departments responsible for decarbonising our economy to create more knowledgeable dialogue and give investors more visibility of the true potential of these innovations.

The New Zealand Government is seeking enhanced international investment and better commercial returns from research.

- Government should establish targeted mechanisms to support cleantech companies to hasten the decarbonisation of our commercial and industrial sectors and become global leaders in green exports.
- Active Investor Plus visa applicants have already started investing in local Cleantech innovators and further information should be shared with this group to further grow the mutual opportunity.
- Strengthen networks with global trading partners to help realise these innovations accelerate at pace and scale

Policy makers are grappling with how to address climate change (including via the Paris Agreement) while aiming to grow our economy.

- The potential scale of local innovators future impact should be considered in national policy development including for future commitments under the Paris Agreement.

1 Global Innovation Index 2025 https://www.wipo.int/web-publications/global-innovation-index-2025/en/gii-2025-results.html

INTRODUCTION

The New Zealand Cleantech Impact Report 2026 aims to provide fresh insights into the economic dynamics and impacts of the Cleantech innovators developing technologies locally for the global market.

Geopolitical and energy disruptions have been occurring globally in rapid succession and have led to changed levels of confidence in investors and policymakers across international markets but also locally. Cleantech innovators are responding to rapidly evolving financial and market signals and continue to demonstrate the value of their technologies and the tenacity required to work through the downturn in investment and market barriers that have developed in the two years since the NZ Cleantech Report 2024[2]. Innovators now have a heightened awareness of the need to ensure their technology delivers not only a sustainability impact but also energy and supply chain resilience and clear return on investment to commercial partners.

This report builds on the 2024 work to measure economic trends and includes an analysis of Greenhouse Gas (GHG) emissions reductions that companies seek to achieve through scaling up their technologies.

Companies shared their commercial and impact data which forms the basis of this report. For the first time in our impact reporting, NZ innovators also had the option to model their future avoided emissions profiles using the CRANE tool[3] hosted by Prime Coalition[4]. Nine companies were able to complete this work which shows real promise for providing a standardised and comparable way of reporting the potential impact of Cleantech innovations.

Estimating the future GHG impacts of companies based on their technology scale-up plans is recognised as challenging and has inherent uncertainties. Our work aims to establish a set of early adopter data on which policy makers and impact investors can build scenarios and plan for a sustainable future economy. We focus our scope for the impact section of the report cycle specifically on GHG impact, recognising that other sustainability impacts are equally relevant and that companies often make a positive impact in more than one domain.

The companies surveyed are operating across a range of industries and have good representation in the hard-to-abate areas of GHG emissions, so would offer meaningful options for decarbonising the local economy as well as supporting the green transition of other international market economies. The nine companies that report projected emissions reduction against incumbent technologies estimate an ability to reduce global CO_2 equivalents by 19.2 million metric tonnes annually by 2030, comparable to the Climate Change Commissions estimate of forestry contributing between 14.4 and 18.8 million tonnes of drawdown in New Zealand. As these technology companies ramp up their commercial offerings, companies estimate further growth of the GHG reduction potential by 10 and 100-fold to 2040.

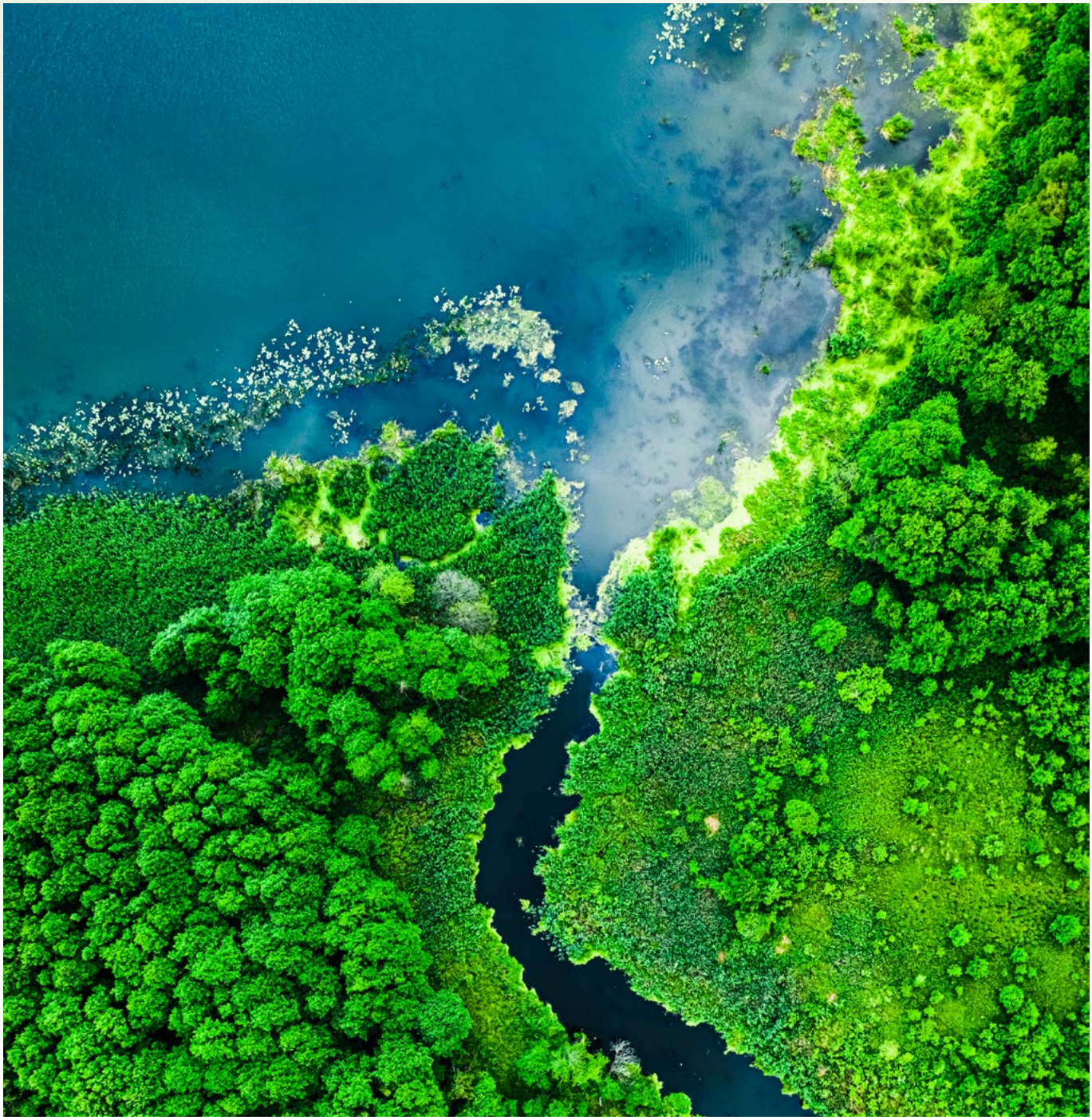
The Government continues to have a stated objective of meeting our Nationally Determined Contributions (NDCs). Commentators have pointed to a “false economy of rejecting offshore mitigation”[5], while locally developed technology could be deployed offshore with the ability to claim credits for New Zealand under Article 6 of the Paris Agreement and thus meet our NDCs.

2 The New Zealand Cleantech Report 2024 https://www.macdiarmid.ac.nz/assets/32582ca51c/FINAL-Cleantech-report-22-May-24.pdf
3 The CRANE Tool website https://www.cranetool.org/about
4 The Prime Coalition website https://www.primecoalition.org/
5 The False Economy of Rejecting Offshore Mitigation – Nigel Brunel https://www.linkedin.com/pulse/false-economy-rejecting-offshore-mitigation-nigel-brunel-rvptc

This report aims to contextualise the GHG impact that innovators offer in offshore and local markets, relative to our national emissions profiles for various sectors. We find that if innovator companies succeed in scaling their technologies into their respective global markets, the emissions reductions are globally meaningful and worthy of Government support in decarbonising our economy.

The sample of companies reporting on GHG emissions reduction potential (n = 9) appear to be representative of the wider groups capability to reduce emissions (34 companies that target SDG on Climate Action). We consider the potential impact of all New Zealand companies to thus be globally meaningful, considering the scale of the global challenge.

We use the high-level taxonomy for Cleantech that the international Cleantech Group have developed as well as impacts mapped to the United Nations Sustainable Development Goals.



INVESTMENT AND THE INTERNATIONAL CONTEXT

The opportunity for impact is large, however the level of financial support that Cleantech companies require to thrive and scale has undergone a retreat internationally and locally.

The international investment climate for decarbonisation and sustainability has gone through rapid changes in responding to changing geopolitical dynamics, with withdrawal of the US Inflation Reduction Act, movement towards defence tech, and some investor aversion to pure climate focused technologies. Companies are responding by enhancing their focus on supply chain and energy resilience, sovereignty of access to energy and critical minerals and clear return on investment for B2B partners.

Companies seeking early stage and growth investment capital have seen a tougher environment to raise in our reporting cycle, achieving only 21% of the totals they aimed for in 2024 (out of the subset of reporting companies, n=26 out of 52) and eleven companies that aimed to raise capital in 2025 deferring for a year or more. However, there is now evidence emerging of better support for energy-related growth-stage companies at least, and local companies report FY26 improvements over FY25 levels. Improved international growth-stage capital raising is being driven by demand-side growth in energy linked to AI. Other sectors that are favoured by emerging geopolitics include critical minerals processing for applications in aerospace and defence technologies.

The implication for NZ innovators is that it remains tough for new entrants to raise early-stage capital but that established companies with a clear path to scale and revenue are able to raise capital.

Sightline Climate - 2025 Investment Trends Report[6]

Investors have made their bets, and they're sticking with them. They've already chosen their champions in emerging sectors like SAF, hydrogen, and carbon removals and aren't ready to back another. Investors have significantly lower risk appetites and are flocking to a small number of techs and companies with proven track records and clear paths to deployment. That means more, and bigger, Growth deals.

Seed and Series A investment totals fell 20% and 7% respectively, but Series A deal counts fell by 22%, pushing deal sizes up to 2021 levels. Series B investment ticked up slightly 7% off the back of a few mega-deals.

6 Sightline Climate, 2025 Investment Trends Report https://www.sightlineclimate.com/research/40-5bn-and-8-uptick-as-power-demand-drives-25-investment

THE OPPORTUNITY FOR INVESTORS

New Zealand's high-quality research, technical talent and supportive networks enable Cleantech innovators to develop high value investment opportunities. These companies are eager to work with international partners and investors to deliver global impact.

The opportunity for meaningful global impact in GHG reduction (see Impact section), relative to the constrained capital raising environment, combined with New Zealand's reputation for capital efficiency provide investors with an opportunity for high quality investments.

Our previous report identified a robust talent pipeline of scientific and engineering skills leveraging our national research and training institutions including the MacDiarmid Institute and our member Universities. The research and science system changes currently being implemented mean easier access to intellectual property and a stronger focus on commercial outputs from Government funded research. This talent and IP pipeline combine with New Zealand's attractiveness to international skilled migration to offer an excellent Cleantech innovation ecosystem.

The Technology Investment Report 2025[7] identified Cleantech as the New Zealand sector receiving the largest portion of capital raised by value in the 2024 calendar year ($139.6 mil), ahead of software ($136.3 mil) and health tech ($92.9 mil) sectors. Noting that the definition used included infrastructure such as solar farms and a single large transaction of $55 mil for Loadstone Energy. Our survey results identified only $68.6 mil with some of the discrepancy due to timing (calendar vs financial year), innovator definition and some company non-responses to the survey.

New Zealand Tech Ecosystem Report 2025 – New Zealand Growth Capital Partners[8]

New Zealand's startup ecosystem continues to deliver outsized value relative to its scale. The tech sector is an increasingly important contributor to the national economy.

While funding levels remain well below those of OECD peers, the ecosystem has nonetheless grown 6.1x in value since 2019, outperforming regional and global benchmarks. This growth reflects the unique capital efficiency of local startups and their strong track record in delivering both financial and societal returns, highlighting the significant opportunity to increase investment in this sector.

7 Technology Investment Network, Technology Investment Report 2025 https://tin100.com/reports/2025-technology-investment-report/

8 NZGCP, New Zealand Tech Ecosystem Report 2025 https://www.nzgcp.co.nz/assets/Media/New-Zealand-2025-report.pdf

IMPACT AND ENHANCED INTERNATIONAL TRADE

Many of New Zealand's international trade agreements include the expectation of planned reduction of carbon intensity of our exports and these agreements provide a platform that supports the opportunity to grow trade in green technologies.

These agreements set a level of expectation that innovator companies should be able to rely on for enabling their commercial success. In the context of these trade agreements, trading partners are likely to be encouraging high ambition to decarbonise and are enthusiastic to engage in trade that supports such high ambition.

MFAT market intelligence report The EU's Ambitious Global Climate and Energy Vision offers opportunities for New Zealand[9]

Under the New Zealand-EU FTA and as an Associate Member of Horizon Europe, New Zealand is well placed to collaborate with the EU – particularly through the Vision's push for mutually beneficial investment in clean energy and critical minerals.

The fact that the EU is looking to play a more active role in global clean trade presents opportunities for New Zealand, including supporting the delivery of new renewable energy projects.

In their meeting in June 2025, European Commission President Ursula von der Leyen and Prime Minister Christopher Luxon acknowledged the opportunity for closer collaboration on critical raw materials supply chains and innovative technologies.

Companies have established a large number of international patents that enable the global commercial use of their technologies, with 35 companies reporting having at least one patent, 17 reporting patents in more than 5 countries and one company having patents across 28 countries as well as the European Patent Convention. The 19 companies that report having patents in the EU or multiple separate European countries are well placed to leverage the NZ-EU Free Trade Agreement.

Green Economy Partnership Agreement (GEPA) between New Zealand, Singapore and Chile aims to accelerate the green transition[10].

New Zealand, Chile and Singapore are frequent partners in pioneering trade initiatives including the Trans-Pacific Strategic Economic Partnership (P4) and Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), and the Digital Economy Partnership Agreement (DEPA).

The GEPA joins these initiatives and will be an enabling framework for trade and investment opportunities in key sectors that either have competitive sustainability credentials or advance climate and environmental solutions. It will comprise a mix of trade rules, commitments, cooperation initiatives and projects and will be a living agreement that evolves over time.

9 New Zealand Foreign Affairs and Trade https://www.mfat.govt.nz/assets/Trade-General/Trade-Market-reports/The-EUs-Ambitious-Global-Climate-and-Energy-Vision-offers-opportunities-for-New-Zealand-January-2026.pdf

10 Green Economy Partnership Agreement Overview, https://www.mfat.govt.nz/en/trade/free-trade-agreements/free-trade-agreements-under-negotiation/green-economy-partnership-agreement-gepa/green-economy-partnership-agreement-overview

‘High level of interest’: UK ministers questioned Kiwis on climate[11]

The UK Government says it is “encouraging” New Zealand to reduce emissions further, following announcements last year about investing in oil and gas, and halving the methane reduction target.

The UK’s views about New Zealand’s climate change policies matter because New Zealand’s trade with the UK depends on our climate change commitments. That deal is worth $1 billion per year to New Zealand.

THE EARLY STAGE OF NEW ZEALAND CLEANTECH

The majority of companies are pre-revenue (67%) and rely entirely on capital raised and grant funding to further develop their technologies. The 33% of companies that have begun generating revenue report $60.3 mil FY25 and $77.9 mil in FY26, with the majority of the 29% revenue increase arising from recurring revenue growth while three companies generated revenue for the first time in FY26.

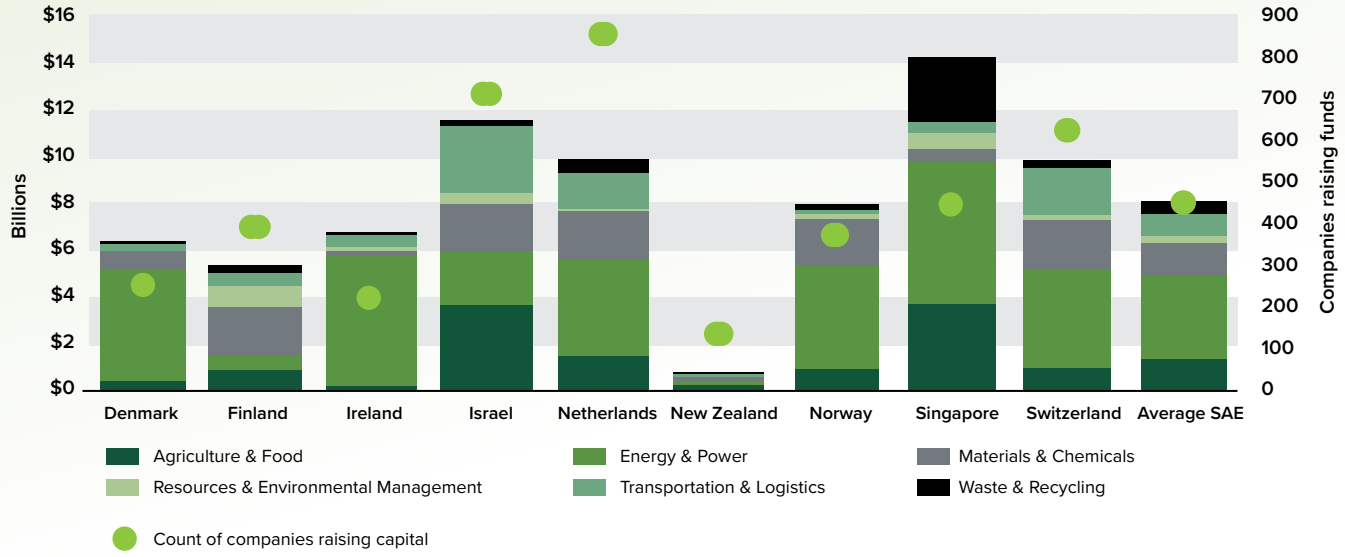
An ongoing challenge for local NZ companies is to access the much larger international pools of capital focussed on Cleantech and impact (Fig 1). The Cleantech Group has listed NZ companies in their respected APAC 25 and Global 100 rankings repeatedly over the past 5 years, suggesting that the technologies offer attractive technical and commercial solutions, but this is yet to translate into substantially larger amounts of deal flow. New Zealand has managed to attract less than one eighth of the value of capital raised compared to the average of small, advanced economies that we often like to compare ourselves to (Fig 1).

The Government has developed new settings for the Active Investor Plus Visa (AIP)[12] that enable experienced international investors to gain residency alongside making investments. This offers an opportunity to bring together international capital with local innovation to scale our impact. Cleantech focused VCs report good early engagement from international participants of this scheme, but to achieve full potential, AIP applicants should be provided with robust information about the early-stage investment options available to them across Cleantech and other sectors.

11 Stuff, ‘High level of interest’: UK ministers questioned Kiwis on climate https://www.stuff.co.nz/politics/360936567/high-level-interest-uk-ministers-questioned-kiwis-climate

12 InvestNZ Active Investor Plus https://www.nzte.govt.nz/page/investor-migrants

Fig 1 - Funds Raised and Companies Raising Capital, Small Advanced Economies (ex. Sweden) (2011-2025)[13]



Grant funding from international sources provided a relatively small but meaningful contribution to companies' ability to progress through the valley of death, with 25 companies reporting success in accessing $6.5 mil grant funding from international sources over the two years. Subsequent to the survey, the New Zealand Government has announced a $35 mil funding via the Regional Infrastructure Fund to help local start-up OpenStar Technologies advance their R&D programme on nuclear fusion and attract further international capital.

The New Zealand Cleantech Mission members and Motion Capital have recently supported the development of a new not-for-profit entity: *Sphere New Zealand* to accelerate the commercial scaling and deployment of New Zealand climate and cleantech technologies, strengthening both the environment and the economy.

Sphere New Zealand will focus on finding solutions to practical barriers that limit the ability of New Zealand climate technology companies to scale — including access to capital, commercial deployment opportunities, and international markets. As a member organisation it will enhance the community of innovator companies in this report and help them deliver on the potential impacts that they are poised for.

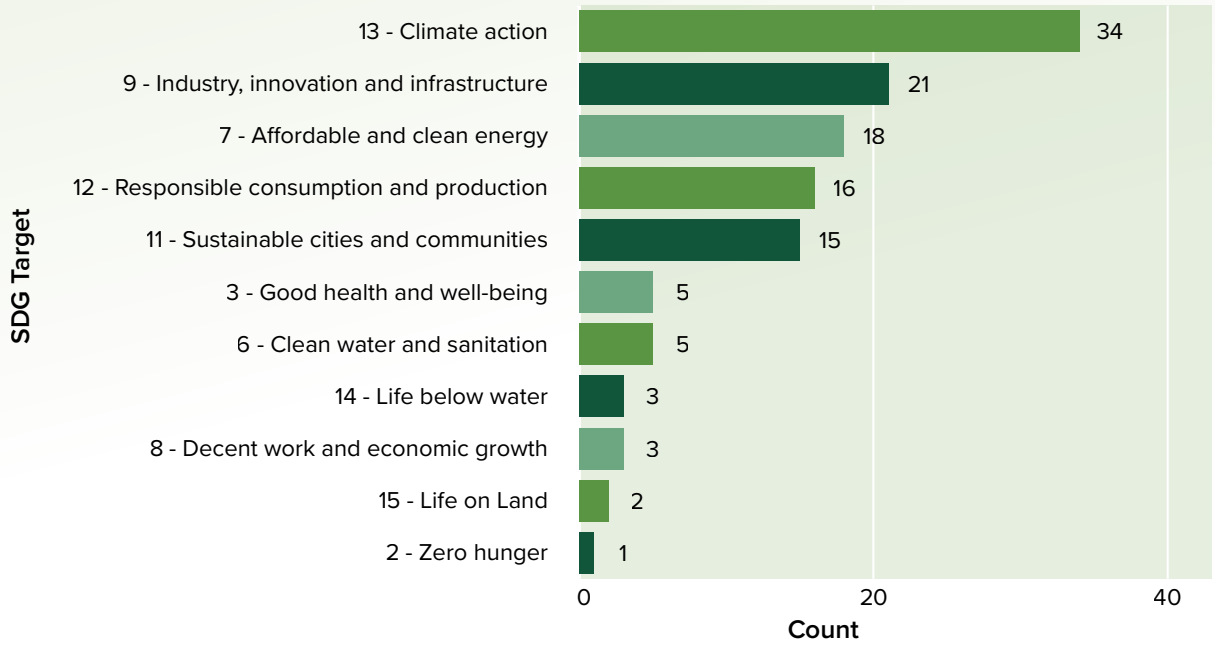
13 Cleantech Group 2026 https://cleantech.com/from-2025-funds-to-2026-futures-cleantech-investment-trends/

IMPACT REPORTING – CLIMATE FOCUS

For this report our main focus is on climate impact and estimating future potential reduction of global GHG emissions (in CO_2 equivalents) that would be achieved if a suite of New Zealand-developed technologies were deployed at scale internationally.

Almost all companies responding to the survey stated that their company has the potential to reduce GHG emissions if deployed globally at scale (50 companies, n=52). For 34 of the reporting companies, their major focus is delivering on the United Nations Sustainable Development Goal of Climate Action (SDG 13), (Fig 2). Companies that claimed any potential impact on GHGs were invited to use the CRANE Tool[14] to estimate forward-looking emissions reduction potential compared to incumbent technologies (2026 to 2030). Companies were offered support to generate these projections using relevant benchmarks of incumbent technology emissions profiles.

Fig 2 – Company alignment with UN Sustainability Development Goals (n=45)



Nine of the companies surveyed, reported future impacts on climate warming gasses from their technology's planned deployment internationally. These international deployments at scale have the potential to reduce GHG emissions by 19.2 million tonnes of CO_2 equivalent per year by 2030. These international emissions reductions compare favourably to the Climate Change Commissions estimate of the NZ Forestry sector having the potential to draw down 14.4 to 18.8 million tonnes annually[15]. With the vast majority (50/52) of companies claiming to have a positive net effect on GHGs, the potential impact of the sector at scale would make a meaningful impact on reducing our national emissions and those of the international markets they're pursuing.

The companies that projected emissions reduction potential beyond 2030 reported 10- and 100-fold increases in the scale of emissions reduction potential. We report only the shorter-term aggregated data as the longer-term data has more uncertainty associated with company assumptions. These projections are likely to be relevant to the financial sector (investors and project finance, infrastructure and green finance), industrial policy and industrial partners. Potential partners with an interest in direct conversations with the reporting companies can contact the authors for introductions.

14 The CRANE Tool, online emissions reduction calculation tool, managed by the Prime Coalition https://www.cranetool.org/

15 https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/nationally-determined-contributions/ndc2-report

The companies that provided data (n=9) cover a range of industrial sectors and are broadly representative of the other New Zealand innovators that were surveyed, covering similar commercial sectors. These estimates demonstrate that with successful financial backing and ambitious scale up of the technologies New Zealand's impact on climate change can be disproportionately large compared to our economy's emissions.

While being relatively speculative, projections of reductions relative to industrial process, manufacturing, energy and transport emissions benefit from having robust scientific evidence of their emissions profiles and therefore modelling changes to these do have validity if cautious assumptions are used. Results are sensitive to assumptions made about market penetration, but these are grounded in the same kinds of commercial assumptions made by startups projecting future revenue on which venture investors make informed decisions.

Nine companies provided their CRANE Tool outputs with estimates of the level of reduction in CO_2 equivalents related to deploying their technology globally, relative to incumbent technologies. The number of companies reporting this data is relatively low (9 companies out of 34 that focus on SDG 13 – Climate Action). Companies that declined to participate referred to capacity and capability constraints and limited time to undertake the modelling work on an unfamiliar tool as well as the speculative nature of forward-looking projections.

While the predicted emissions reductions are substantial, we recognise the need to be cautious about any forward-looking statement. Companies, policymakers, investors and financial institutions are working through how best to estimate and act on these predictions and need ongoing evaluation of their ability to contribute to meaningful transition to a sustainable economy.

Avoided emissions & Sustainable finance → Accelerating decarbonization by aligningthe efforts of business and finance

World Business Council for Sustainable Development

Avoided emissions estimates are speculative in nature since they compare a factual scenario with a hypothetical scenario and are often predictive rather than descriptive. Data challenges are particularly prevalent in terms of commercial sensitivity, accountability, traceability, and impact measurement (such as confirming use phase assumptions) and in establishing reliable baselines/reference scenarios. High variability across regions adds complexity to the evaluation process.

The companies providing data demonstrate the ability to meaningfully plan industrial policy settings around decarbonisation transition options using standardised and relatively conservative metrics. Here we compare their projected international GHG emissions reduction potential by 2030 with the New Zealand sectors within which the reporting companies operate (Fig 3). For a sense of scale, the annual emissions reductions that companies project by 2030 are compared to the Climate Change Commissions low-technology, low systems change (LTLS) and high-technology, high systems change (HTHS) sector emissions scenarios[16]. Notice that the emission reduction potentials are calculated on global scale (international market), while the Climate Change Commissions estimates are for NZ specific market.

Sector comparisons for New Zealand emissions by 2030 with global impact of innovators:

The combined emissions reduction offered by two companies operating in the **energy sector** are projected to reach 1.3 million tonnes annually by 2030. This level of reductions would be the equivalent of 10% of the LTLS or 11% of the HTHS scenario for New Zealand's energy sector by 2030.

The combined emissions reduction offered by three companies operating within **the industrial processes and product sector** are projected to reach 12 million tonnes annually by 2030. This level of reduction would be the equivalent of 315% of the LTLS or 571% of the HTHS New Zealand industrial processes and product sector by 2030.

The emissions reduction offered by a single company operating in the **transport sector** is projected to reach 25,600 tonnes annually by 2030. This level of reduction would be equivalent to 0.21% of the LTLS or 0.25% of the HTHS New Zealand Transport Sector emissions by 2030.

The combined emissions reduction offered by two companies operating in the **waste sector** are projected to reach 5.9 million tonnes annually by 2030. This level of reduction would be equivalent to 187% of the LTLS or 230% of the HTHS for the waste sector by 2030.

Combining the total international emissions reduction offered by all of the nine companies that submitted data we estimate that they could contribute an aggregate emissions reduction internationally that would be the equivalent of 133% of the LTLS and 102% of the HTHS of those offered by the New Zealand **forestry sector** by 2030.

The emissions reduction potential of these companies can be seen to offer substantial emissions reductions relative to the scale of their respective sectors within the NZ economy. As these emissions reductions are mostly likely to occur offshore, the Paris Agreement Article 6 should be considered as a mechanism to ensure these reductions can be attributed to our local economy over time. Whether or not these are attributed to New Zealand's NDCs, these projections demonstrate that global deployment of these innovative technologies by New Zealand could make a substantial global impact.

16 Climate Change Commission, Report on the potential domestic contribution to Aotearoa New Zealand's second nationally determined contribution (2024) https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/nationally-determined-contributions/ndc2-report

Fig 3 – Projected aggregate annual impact for nine companies by 2030

Industry sector	CCC 2030 LTLS Million metric tonnes CO_2 equivalent ($MMCO_2e$)	CCC 2030 HTHS Million metric tonnes CO_2 equivalent ($MMCO_2e$)	CRANE Tool estimate for innovator annual emissions reduction in year 2030. Million metric tonnes CO_2 equivalent ($MMCO_2e$)	Number of innovator companies in sector[17] (n=9)
Energy sector emissions	12.2	11.3	-1.3	2
Emissions from industrial processes and product use	3.1	2.8	-12	4
Transport sector emissions	12.0	10.1	-0.02	1
Waste sector emissions	3.2	2.6	-5.9 [18]	2
Forestry sector emissions (sequestration)	-14.4	-18.8		
Total aggregate impact for the nine reporting companies			**-19.2**	**9**

IMPACTS ARE BROADER THAN SINGLE METRICS

Cleantech companies often operate within a culture of enhancing the business, human and ecological environments simultaneously and as long as their commercial focus remains unwavering, they can make meaningful impacts across multiple domains.

Companies reporting that they focus on delivering any of the UN Sustainable Development Goals tended to work towards more than one of these (n=45), with only seven companies focused on a single SDG, eight companies focussing on two SDGs and 32 companies reporting working towards three SDGs. (see fig 2 and Company Impact Statements in Appendix 1)

The multifaceted commitment to sustainability can be seen in the EV Maritime case study below, where a company's technology displaces diesel fuel with electric propulsions for ferries, the GHG impact is only a part of the beneficial impacts. The marine and atmospheric ecosystem and human health benefits are also substantial. Most of the companies surveyed recognise the multifaceted benefits they can deliver and are committed to ensuring these are achieved alongside a commercial return.

The authors acknowledge the importance of other impact areas and although these are beyond the scope of this report, we anticipate further work being done to quantify these impacts over time in partnership with the NZ Cleantech Mission members.

To demonstrate some of the impact areas, companies were asked to provide brief impact statements with metrics where possible for their primary focus and these are provided in Appendix 1.

17 Companies with multiple products reported in each relevant sector, without duplicating overall impact.

18 Both companies provide waste to energy solutions but are reported only in the Waste Sector.

CASE STUDIES/COMPANY SNAPSHOTS

ENVIRONMENTAL DECONTAMINATION (NZ) LIMITED (EDL®) - HAZARDOUS WASTE MANAGEMENT

EDL® is focused on destroying persistent environmental contaminants and difficult-to-process waste streams with its proprietary Mechanochemical Destruction (MCD®) technology. The company has projects under negotiation in North America, Europe, the UK, and Australasia with Government, industrial, and military clients.

The company has developed a patented mechanochemical destruction process MCD® and published scientific evidence demonstrating the complete destruction of a range of high-impact toxic wastes, including per- and polyfluoroalkyl substances (PFAS), asbestos, persistent organic pollutants (POPs), nuclear waste, hydrocarbons, obsolete pesticides, and more.

Once processed, the materials are safely incorporated into high value products, such as pozzolans for cement replacement and a range of mineral powders, which also supports developing work now underway for critical minerals and e-waste.

EDL® has collaborated with University of Auckland over the past eight years to develop and validate the underlying scientific principles of the MCD® process. Grounded in a science-led approach, EDL® has established partnerships with organisations including Veolia Nuclear Solutions, the United States Department of Defense, the United States Environmental Protection Agency, Stevenson Aggregates, Hutt City Council, and a range of other global operators.

The proprietary MCD® systems and specialised reactors drive targeted reactions that transform the waste streams, while enhancing the environmental sustainability through:

- No harmful additives or solvents,
- Low temperature and pressure reactions,
- Inert and stable by-products avoiding landfill and incorporation into carbon sinks,
- Use of converted waste into low CO_2 concrete.

These processes offer the potential for reduction of GHG emissions at the scale of millions of metric tonne CO_2 equivalents alongside direct environmental decontamination on a global scale.

LIQUIUM - CLEAN LIQUID FUEL FOR HEAVY INDUSTRY

Liquium's new catalyst technology aims to significantly lower the capital and operating costs of existing ammonia plants and new builds, helping to accelerate the uptake and delivery of the next clean liquid fuel for heavy industry. Recent results indicate that Liquium's novel catalyst delivers a >2x faster ammonia synthesis rate than the existing commercial catalyst.

This offers a meaningful pathway to reduce the emissions, improve the energy efficiency, and raise the profitability of ammonia production processes, the world's third most produced chemical. Ammonia has a growth projection of >50% over the coming 15 years due to its existing use in food production and future use as a clean energy fuel for international maritime and power generation.

Liquium emerged from research at Te Herenga Waka Victoria University of Wellington four years ago, and its scientific founder received a Breakthrough Energy Fellowship to develop rare earth catalysts for ammonia production.

Liquium's lead catalysts are now being developed into industrial prototypes for larger ammonia production validation trials. These trials aim to validate improved productivity and profitability for ammonia production in the well-established Haber-Bosch process. This validation will allow Liquium to quickly scale internationally.

The company aims to address the technical risks associated with a new industrial catalyst within the next four years, through catalyst design, fabrication, and large-scale ammonia production trials. Liquium already has active work agreements and collaborations with global industry leaders with a market capitalisation exceeding US$20 billion.

The company's growing patent portfolio includes granted patents in jurisdictions across the world, including North America, Japan, China, the EU, and APAC.

Liquium recently completed a capital round, securing over NZ$ 2 million, enabling the company to move into new facilities, scale operations, and provide greater resources for its work programmes with international collaborators.

EV MARITIME – COMMUTER TRANSPORT

EV Maritime are a team of naval architects and systems integrators, delivering high-performance, zero emission fast ferries to some of the world's most iconic ferry services.

Using electricity instead of diesel for ferries or displacing passenger vehicles on roads offers major decarbonisation benefits while enhancing ecosystem sustainability from reduced particulate air and water-based emissions. The ferries enhance human, ecosystem and climate health with a single integrated solution for water transport while each ferry displaces approximately 2000 tonnes of CO_2 annually.

The team has the expertise and tools to support harbours through a zero-emission ferry transition, from analysis of service, vessel, schedule and infrastructure requirements to forecasting financial and lifecycle sustainability outcomes.

Between them, the two EV Maritime electric ferries in Auckland will undertake 8,400 passenger journeys per annum between Downtown Auckland and the Eastern suburb of Half Moon Bay, removing over 20 million litres of diesel from harbour transport over 15 years. Each vessel will deliver an average of 14 trips per day on the busy commuter route.

On the back of global interest in the landmark Auckland deployment, EV Maritime now has an international orderbook. 2026 is expected to see manufacture start on three further projects spanning both sides of the Pacific, with more in the pipeline. In the USA alone, EV Maritime is regarded as a central part of the domestic maritime electrification sector.

NEOCRETE – CONCRETE AND THE BUILT ENVIRONMENT

Neocrete has developed an additive for cement that boosts the reactivity of Supplementary Cementitious Materials (SCMs) enabling less cement to be used in a building, lowering both carbon emissions and costs.

Neocrete is now selling at scale for major infrastructure projects in South East Asia - following successful trials and pilots with Readymix Brunei.

Readymix Brunei has been supplying concrete to Brunei Darussalam since 1983, and today is the largest supplier in the country. Relentless drive for product improvement, carbon reduction without increasing prices, led the concrete supplier to work with Neocrete.

Neocrete is boosting cement replacement of waste fly ash in Brunei by around 40% - meaning a carbon reduction of over 30%. They are also reducing costs for the developer and concrete maker, while increasing the durability of the concrete and recycling waste ash that was being dumped.

An R&D programme is on track to create carbon neutral concrete, with no loss in strength and with greater durability than conventional concrete. The dry powder additive works on a range of SCMs including fly ash, Ground Granulated Blast Furnace Slag, and natural pozzolans to activate molecular bonding, accelerate chemical reactions and increase the density of molecular bonds in a concrete mix.

Neocrete is now selling their latest generation Activator in South East Asia and New Zealand, and are in testing programmes with concrete makers, cement companies, ash beneficiators and energy companies across Europe, Asia, Middle East and North America.

The company provides an eCalculator to support partners and clients to estimate and compare the carbon footprint and other environmental impacts of concrete, depending on its mix design.

The company has ISO 9001 accreditation as well as a third party (Thinkstep) Environmental Product Declaration that validate environmental and quality claims.

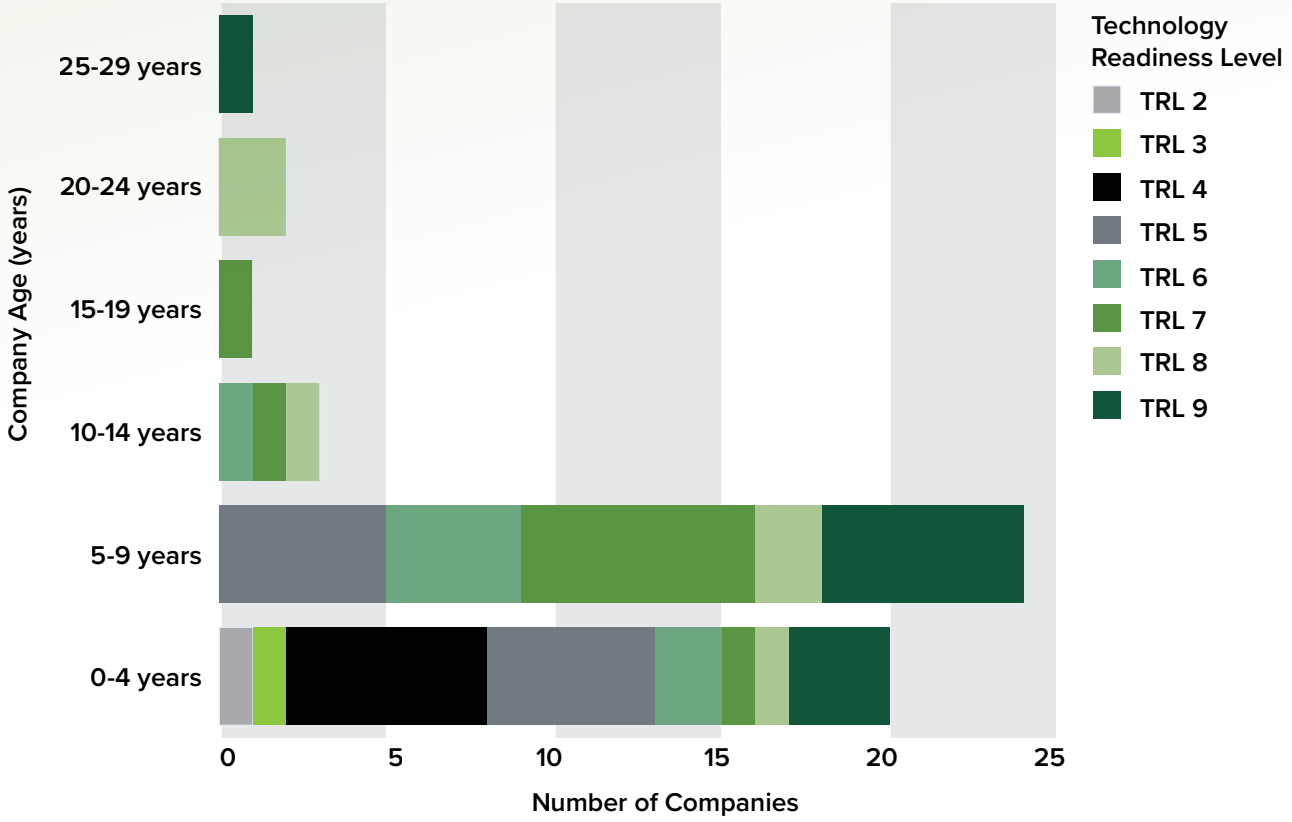
COMPANY PROFILES – AGE, STAGE AND FOCUS

The majority of responding companies have been operating for less than nine years (see Fig 4) and are pre-revenue with a wide range of technology maturity.

A feature previously identified by international investors is the relatively early stage of companies in New Zealand. This may be a barrier to capital raises from international VC funds. This trend is still evident with 24 companies operating at or below a TRL of 5 and 12 companies operating at or above TRL8. These investors also noted New Zealand's capital efficiency, which should enhance the ability for companies to attract capital.

The clustering of companies in the early company ages and TRL stages is likely due to our survey focus on innovators and startups. We recognise that our work doesn't capture the more mature companies and large corporates delivering on improved sustainability impacts and recommend that further research is undertaken to identify the full breadth of economic activity related to sustainability and Cleantech if this important future sector of the NZ economy is to be optimally supported.

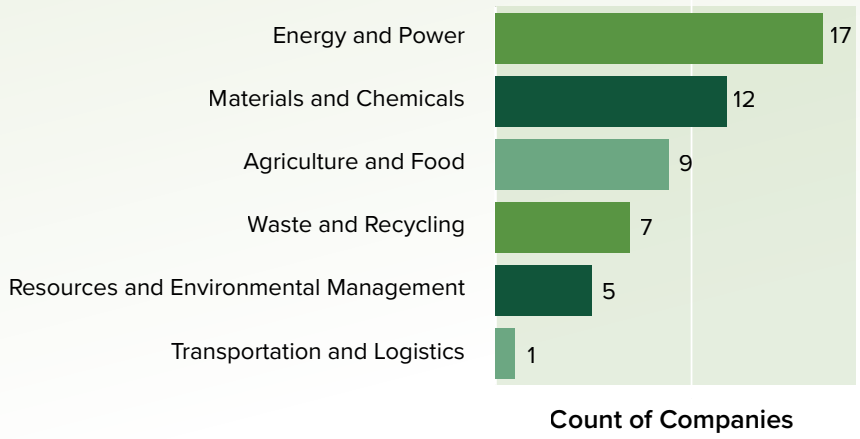
Figure 4 – Distribution of Technology Readiness Level by company age (n=51)



Cleantech companies typically provide solutions to a wide range of industries and can be seen as a horizontal sector that provides solutions to a range of industry verticals (e.g. an airport can need sustainable waste management as well as renewable fuel supply, each coming from cleantech innovators). The companies surveyed focus on providing value to numerous sectors (fig 5) and have good representation in the hard-to-abate areas of GHG emissions, with only one from the transport sector.

While there are companies in NZ developing decarbonisation technologies for marine, road and air transport, relatively few may identify as Cleantech innovator or “startup” companies.

Fig 5 – Number of companies operating in each sector (n=51)



MARKET AND TECHNOLOGY DEVELOPMENT TRACTION

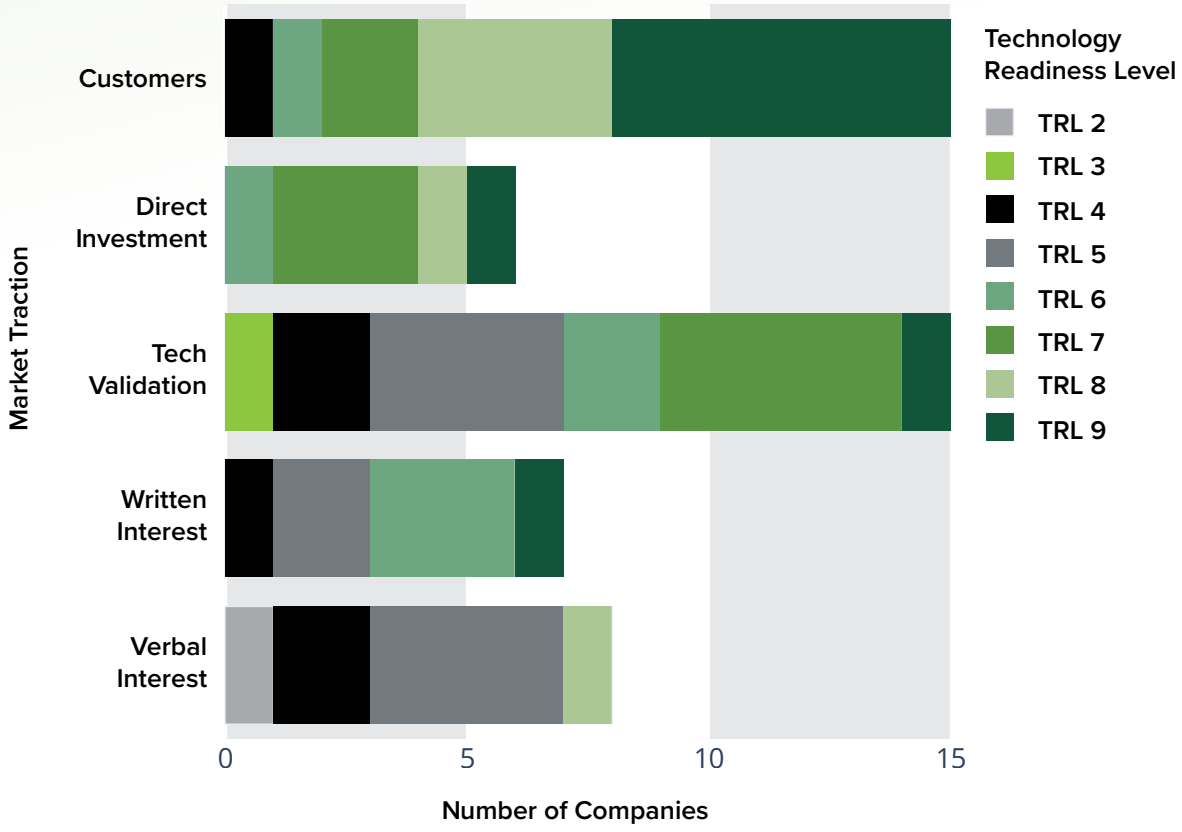
Cleantech companies have previously reported challenges in partnering with international and local corporates and industrial partners. Companies like Mint Innovation however demonstrate New Zealand technology's attractiveness to multinational corporate and industrial partners with their Lithium battery recycling partnership with Jaguar and more recent e-waste closed loop recycling partnership with HP.

Despite the challenges integrating with global supply chains that's historically been a hurdle, a new generation of business leaders is finding ways of partnering globally in these complex supply chains.

This year, companies reported good traction in developing technology development partnerships from relatively early in their technology development pathways, with seven companies at or below TRL5 already having development partnerships secured. The majority of companies at the upper TRL levels reported commercial revenue (n=16) and direct investment from corporate partners (n=6).

One company with a technology at TRL4 is able to generate revenue from customers at a market rate for niche laboratory services provided, which is also a useful mechanism to develop relevant relationships with potential commercial partners to deploy their technology at scale.

Fig 6 – Distribution of Technology Readiness Levels by Market Traction (n=51)



COMPANY LOCATIONS

The companies operate from the entire length and breadth of New Zealand, including in industrialised areas, commercial CBD areas and remote towns. There was relatively little movement from where companies were founded to any of the major centres, suggesting that companies consider they are able to operate from regional centres.

Fig 7 – Cities Where New Zealand Cleantech Companies are Headquartered (n=51)

PATENTS – GLOBAL COVERAGE

Cleantech innovation frequently relies on formal IP protection to succeed commercially and the global coverage of NZ patents held by 40 companies demonstrates the ambition to address global markets.

The chosen jurisdictions for patents align with our top trading partners (US, China, Australia, Europe) as well as other regions of interest (South East Asia, South America and Middle East).

Fig 8 – Patent locations by Country, Region and Patent Cooperation Treaty (n = 40)

Countries

Europe

PCT or International

CAPITAL RAISING FY25 AND FY26

Companies responding to the survey (n=52) provided insights about their ability to raise capital and what they are deploying it on, with the majority of them being pre-revenue companies.

The companies that raised capital reported raising $68.6 mil (including data from Dealroom[19]) in FY25 (n=23) and $105.3 mil in FY26 (n=33). While NZ companies have a reputation for being very capital efficient, the relatively low level of capital raised compared to cleantech companies operating in other small, advanced economies is likely to be reducing the pace and scale at which these companies can achieve commercial and environmental impact.

Fig 9 - Table of Capital Raised and Financial Activity

	2025 (NZ$,000)	2026 (NZ$,000)	Percentage change 2025 to 2026
Capital Raised	68,600[20]	105,300	+53%
Revenue Generated	60,300	77,900	+29%
Grant funding NZ sourced	12,400	10,900	-12%
Grant funding international sourced	1,900	4,600	+142%
R&D expenditure	42,600	43,900	+2.8%
Capital expenditure	11,700	20,500	+75%
Annual Salary Costs for NZ-based employees	43,500	50,700	+16%

19 To supplement our survey data, a search for additional capital raising rounds via the NZGCP supported Dealroom account identified two further raises in 2025 of $12 mil which is included in the total. See NZ Growth Capital Partners, New Zealand's Startup Database, powered by Dealroom.co https://www.nzgcp.co.nz/about-us/news-and-media/resources/dealroom

20 Includes $12 mil identified via NZGCP Dealroom but not reported via surveys.

LONGER TERM CAPITAL RAISING TREND

We report on the data provided by the 52 companies as well as a subset analysis of trends where companies responded for both the 2024 and 2026 surveys (n=26). We are able to compare the forward-looking estimates provided in 2024 with what companies report having achieved for capital raising (Fig 10).

There was a large (79%) reduction in actuals vs anticipated capital raised which has had major effects of slowing down progress, although it did not in most cases lead to companies surveyed being liquidated. With this data and an example of an individual company reporting a 30% reduction in headcount, the overall outlook for innovators deteriorated substantially between FY24 and FY25, with FY26 providing a meaningful improvement.

The severity of the downturn in capital raising from FY24 to FY25 is shown by a subset of companies that provided data for both surveys where 26 companies reported achieving a total of $29 mil capital raised for FY25 which was 21% of their stated aim in the 2024 survey response of planning to raise $280.6 mil for FY25. Eleven companies that had aimed to raise capital in 2025 deferred these raises, with seven of them deferring for one year and four companies that aimed to raise in 2025 have yet to close a recent round.

Fig 10 – Capital Raising Planned vs Achieved

	Cumulative capital raised to 31 March 2023 (n=17)	Capital raised in FY24 (n=13)	Capital raises planned for FY25 (n=17)	Capital actually raised FY25 (n=13)	Capital raised FY26 (n=16)
Capital raised (NZ$,000)	171,000	56,200	281,300	59,000	61,500

EMPLOYMENT DATA: A HIGHLY SKILLED WORKFORCE EARNING ABOVE-AVERAGE SALARIES.

We have aggregated the 2024 and 2026 company reported FTE numbers to generate a sector employment total, including projecting the growth trend from the subset of companies that reported for both surveys. Despite a downward trend between 2024 and 2025, 82 companies currently employ 943 FTEs.

The change in employee numbers from 2024 to 2025 (reduction of 8.8 %) in the companies responding to 2024 and 2026 surveys (n=25) is related to the changed capital raising environment and worsening commercial prospects at that time, so the more recent growth (8.2%) in total FTE appears to show a modest level of improving confidence of companies.

Fig 11 – Cleantech Sector Employment Numbers

Source of data	FTE Numbers
Actual total reported FTE by survey participants 2026	542
Actual offshore FTE reported by survey participants 2026	63
Projected total of 2024 participants who did not report in 2026 (n=33)	337
Total actual plus projected from 2024 participants	**943**

Average salaries[21] paid by companies were $86k in 2025 and $93k in 2026, compared to a national annual mean of $82k[22].

For the surveyed companies in 2026, salary costs for New Zealand-based employees increased by 16.5% (from FY25 to FY26) while these employee numbers increased by 7.4% suggesting either salary rate increases or a larger portion of more senior hires over the two years.

Employment of people offshore has grown from 7.4% of company staff to 11.7%, likely benefiting the ability to develop international partnerships, while still being a relatively small portion of overall operations.

The staff employed by companies that had been taken over through acquisition between 2024 and 2026 (over 200FTE) are mostly still working in these companies and there have been 18 people's roles lost due to companies ceasing operations.

Separate work[23] has identified that deep tech and Cleantech startups often employ a large proportion of highly skilled recent graduates, with a group of MacDiarmid Institute affiliated startups employing approximately 33% PhD graduates on their teams.

21 Mean derived from total salary costs and FTE numbers.

22 Infometrics, Mean Annual Earnings year to March 2025. https://regions.infometrics.co.nz/new-zealand/income-and-housing/earnings?compare=new-zealand

23 Private correspondence with MacDiarmid Institute affiliated startups.

CAN INVESTMENT MATCH THE LEVEL OF NZ COMPANY AMBITION?

The challenge for the rapidly emerging New Zealand Cleantech sector is how to match capital with the level of potential climate and commercial impact offered. Companies are developing globally competitive technologies with an impressive patent portfolio and impact metrics, but have yet to achieve capital raising that is similarly globally competitive.

There is further work to be done by the public and private support ecosystem players to ensure a generational opportunity meets its potential and delivers economic returns as well as turning the sectors within which cleantech companies operate into long-term sustainable industries.

The New Zealand landscape for companies has a range of enhancements that are needed, from policy and international trade agreement implementation through to catalytic capital and philanthropic support alongside Government non-dilutive and concessional funding to ensure companies can scale to the level sought by larger international investors and infrastructure investment groups.

Companies have shown that they can respond to changing international market dynamics while continuing to focus on the important underlying megatrend of climate change. Stronger support and investment will ensure continuing ability to find opportunity in the emerging geopolitical environment.

RECOMMENDATIONS – RAMPING UP THE IMPACT

KEY FINDINGS:

1. Innovators have the potential to deliver enhanced energy security, supply chain resilience and critical materials access alongside a substantial sustainability impact.
2. New Zealand cleantech innovators are solving global challenges that promise to produce substantial reductions in international GHG emissions.
3. New Zealand innovators are scaling quickly, with the need for capital outstripping supply.

For the Cleantech innovators potential to be achieved the Authors recommend that investors, Government and the commercialisation ecosystem each provide enhanced support directed at scaling these companies globally. The levers available to achieve a successful economic and sustainable impact combination are already working to some extent (e.g. some of the Active Investor Plus visa participants have invested in NZ Cleantech). These should be further strengthened for maximal effect.

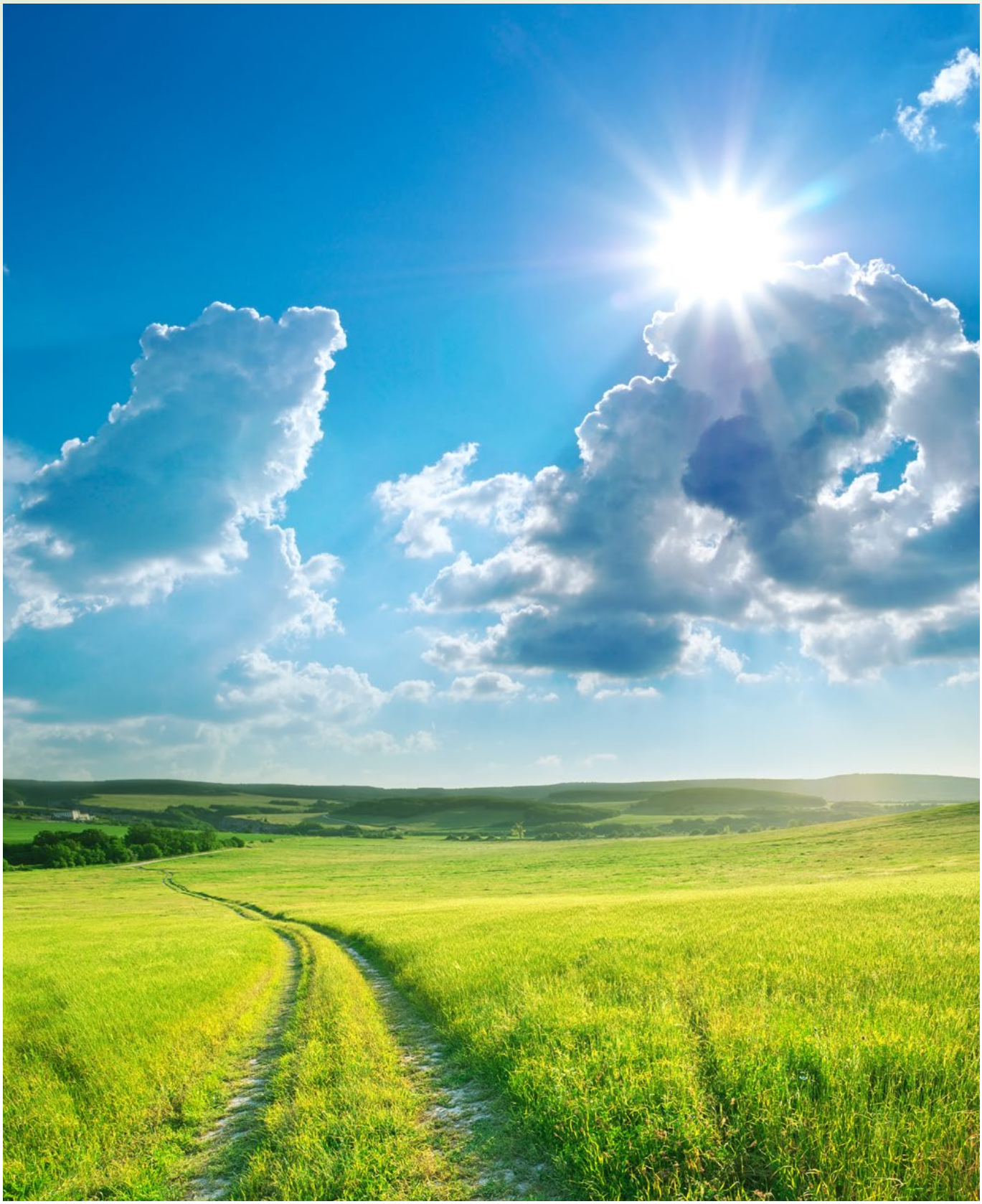
Government policymakers should consider utilising forward-looking projections of GHG reduction potential of innovator companies to plan for decarbonising the New Zealand economy and provide strategic support for the sector to scale nationally and internationally.

Recommendations to enhance the impact and commercial success of New Zealand Cleantech Innovators:

- New Zealand ranks highly for human capital, research and business sophistication[24] with an opportunity to enhance commercial performance.
  - Investors, local and international financial institutions with a focus on sustainable finance, and New Zealand's global trading partners should actively partner with New Zealand Cleantech companies to enhance the mutual opportunity of delivering impacts at scale.
  - Global Impact Investors come and look at the promising innovations that New Zealand is rapidly producing.
- Impact investors are seeking better data about potential impact from innovators and the leading CRANE tool provides a standardised approach.
  - Local companies should engage with quantifying future impacts across GHG emissions reduction and communicate these with investors and the New Zealand government departments responsible for decarbonising our economy to create more knowledgeable dialogue and give investors more visibility of the true potential of these innovations.
- The New Zealand Government is seeking enhanced international investment and better commercial returns from research.
  - Government should establish targeted mechanisms to support cleantech companies to achieve the decarbonisation of our commercial and industrial sectors and become global leaders in green exports.
  - Active Investor Plus visa applicants have already started investing in local Cleantech innovators and further information should be shared with this group to further grow the mutual opportunity.
  - Strengthen networks with global trading partners to help realise these innovations accelerate at pace and scale.
  - Policy makers are grappling with how to address climate change (including via the Paris Agreement) while aiming to grow our economy.
  - The potential scale of local innovators future impact should be considered in national policy development including for future commitments under the Paris Agreement.

24 Global Innovation Index 2025 https://www.wipo.int/web-publications/global-innovation-index-2025/en/gii-2025-results.html

Our report contributes to a better understanding of many of the dynamics of local Cleantech innovators, but the larger sustainability sector's economic contribution to New Zealand remains largely unknown. We recommend a broader research attempt to quantify the direct contribution to NZ GDP that companies make through developing, manufacturing, distributing and exporting a broad set of green products, services and processes.



APPENDIX 1 - INNOVATOR IMPACT STATEMENTS

Companies were invited to provide a brief impact statement that includes their aims for sustainability impact, these are listed here.

We invite interested partners and investors to contact companies directly or to contact the author group via email at Kevin.sheehy@vuw.ac.nz

ALIMENTARY SYSTEMS	Recover energy and nutrients from wastewater sludge and other putrescible wastes, utilising its proprietary process and apparatus. Every tonne of mixed organic waste diverted from landfill recovers up to 1.8kWh of usable energy, simultaneously reducing 1.2tCO_2e of GHG emissions. An intelligent software overlay provides immutable evidence of gross emissions reductions. At scale, Alimentary Systems' technology has the potential to reduce up to 9.3 gigatonnes or one quarter of all global GHG emissions, and generate up to 6TW of clean electricity.
APLENTY	We provide large commercial greenhouses with a profitable pathway off natural gas, using biomass waste in our novel process to provide heat and yield-boosting CO_2. We directly avoid CO_2 emissions associated with the use of fossil fuels through the use of renewable waste biomass
ASPIRING MATERIALS	The patented Aspiring Process extracts a range of high-demand, high-value critical minerals and essential materials from a single, globally abundant feedstock - ultramafic rock. The process transforms olivine into valuable materials like magnesium, nickel, and silica, which can reduce CO_2 emissions by up to 1.6 tonnes per tonne of rock processed.
AVERTANA	Reducing solid waste and CO_2 emissions across two heavy industries: cutting TiO_2 pigment production emissions by 60–70% while eliminating red gypsum waste, and addressing a growing challenge for steelmakers using titanium-bearing iron ore, who generate ~300-400 kg of waste slag per ton of steel.
BETTER PACKAGING CO	Better Packaging Co's solutions replace virgin plastic packaging with low-carbon alternatives made from POLLAST!C - 100% recycled Ocean-Bound Plastic. The POLLAST!C range includes mailing satchels, clear garment bags, magazine wrap, furniture covers and pallet wrap. To date the POLLAST!C Project has removed over 2 million kgs of plastic pollution and recycled it into packaging for customers like Australia Post, Glassons, IVE Group, New Zealand Geopgraphic, New World and Pak'n'Save supermarkets.
CASIL TECH	The CaSil technology increases the efficiency of geothermal energy utilisation of the hot separated geothermal water in existing and new resources. The water can be cooled to about 50°C without silica scaling. Up to 50% more electricity can be generated by ORC plants. Alternatively up to 100% more heat energy can be harnessed for direct heating applications e.g. food processing. Maintenance costs of silica scale removal and drilling new reinjection wells are reduced. Down-stream recovery of critical minerals is facilitated.

CAPTIVATE	We're focused on tonnes of CO_2 removal or avoidance. Our launch demonstration project in Canada will achieve ~1400 tonnes CO_2 per year removal; on track for 2027 deployment. In the growth we expect Captivate to achieve, this should extend to ~100,000 tonnes CO_2 per year by 2030.
CARBONCLICK	Carbonclick now has over 330,000 individuals who have offset 389 million kg of carbon through the platform. It's not simply click and forget, we connect them to those hero projects they are supporting with their offset. We have redirected the desire to simply offset guilt of CO_2 emissions into support for high biodiversity and social outcome offset projects around the world. That actually make a difference to our climate, and build stronger respect for the need to change our habits to protect our planet.
CETOGENIX	Cetogenix's modular Ceto-Boost™ system uses temperature, pressure and air to precisely deconstruct and convert municipal, agricultural, and industrial organic wastes into low-carbon biomethane, green ammonia, biogenic carbon dioxide and clean water. By efficiently transforming wastes into products 6 x less carbon-intensive than fossil alternatives, Ceto-Boost™ produces 40% higher yields than existing technologies while reducing GHG emissions by 1.97 T CO_2e/T feedstock. Estimated market is USD110B for >37,000 Ceto-Boost™ modules across multiple geographical markets and sectors, with the potential to reduce global greenhouse gas emissions by 1.5 GT CO_2e per year.
DAISY LAB	Uses precision fermentation to produce dairy proteins in yeast with high purity, scalability, and functional equivalence to animal-derived proteins without reliance on livestock systems. Our cleantech impact can be measured by kilograms of bovine protein produced via precision fermentation and sold as a replacement for conventional animal-derived protein. Each kilogram of product used in place of cattle-derived protein represents a measurable reduction in livestock-linked production requirements and associated emissions, land use, water use, and nutrient runoff.
DOT INGREDIENTS	Dot Ingredients makes emulsifiers for cosmetics, pharmaceuticals and food using tiny particles made from sustainable wood pulp. By using sub-micron cellulose particles that are 100x bigger than existing molecular emulsifiers, Dot requires 4-10x less land than palm oil-based emulsifiers, taps into a globally-available low-cost feedstock with excess capacity, and yet still outperforms even petrochemical based emulsifiers in standardised tests. Set to disrupt the US$10 billion emulsifier industry, Dot increases product performance, unlocks new product formats, and halves the ingredient cost compared to existing emulsifiers.
ENPOT	Enables aluminium smelters to convert the first 30–40% of electricity demand to variable renewable energy (VRE) without requiring storage or renewable overbuild. 1 MT of aluminium production converted can avoid approximately 3-4 MT of CO_2 emissions annually. At scale, converting 30% of existing global smelter capacity could abate around 150MT of CO_2 per year.

ENTROPEAK	Our High-Entropy Oxide anode materials enable lithium-ion batteries with up to twice the specific capacity of graphite and improved long term capacity retention. This can support electric vehicles with extended driving range or reduced battery mass, lowering lifecycle emissions per kilometre. In grid storage applications, higher energy density and durability can reduce material intensity per kWh installed and improve renewable integration, contributing to measurable reductions in CO_2 emissions across transport and power systems.
FABRUM	Accelerating a global transition to a low-carbon economy through advanced cryogenic technologies that make clean fuels – in particular liquid hydrogen – viable and scalable. By delivering highly efficient, small-scale liquefaction systems with a low total cost of ownership, coupled with proprietary composite cryogenic storage solutions, Fabrum enables reliable production, storage, and deployment of liquid hydrogen across 'hard-to-abate' sectors. These innovations create a practical pathway to decarbonisation across mobility market sectors, including: transport, aviation, mining and shipping.
FLEECEGROW	Wool-plus-carbon fertiliser pellets contain around 30% captured carbon and show potential to reduce nitrate leaching by up to 30% in soil. Wool growing media and propagation blocks can also replace peat substrates in horticulture. Because peatlands are major carbon sinks, extracting peat releases stored carbon; around 7 kg of peat can emit roughly 12–13 kg of CO_2 as it oxidises. Renewable, compostable wool materials offer a lower-impact alternative, particularly under emerging biogenic carbon accounting approaches.
FUTURITY	Futurity's LIMA® product transforms lignin, a by-product of the pulp and paper industry into a patented bitumen alternative that delivers cost parity, high performance, and a significantly lower carbon footprint. By substituting bitumen with LIMA, asphalt producers can make roads last longer while reducing emissions by up to 4 tonnes of CO_2-equivalent per tonne replaced. This innovation enables a scalable pathway to decarbonize road construction without compromising technical or economic performance.
HIKOTRON	Enables faster, lower-cost EV charging deployment by using existing grid capacity more efficiently. Our smart and fully integrated DC-to-DC buffered charging technology can reduce required grid upgrades by up to 50%, cut connection costs by 30–60%, and accelerate site deployment timelines by months. By avoiding or deferring network upgrades (kVA/MVA per site), we lower embodied carbon and unlock viable charging in constrained locations, supporting scalable electrification and wider EV adoption across New Zealand.
KEA AEROSPACE	Kea Aerospace's high-altitude platform stations can cut emissions by replacing fuel-intensive low-altitude survey aircraft for mapping, monitoring, and intelligence across environmental, infrastructure, maritime, and energy sectors. By delivering this persistent, high-resolution Earth observation data, with far lower operational energy per square kilometre, Kea Aerospace also enables continuous measurement of the systems that drive emissions—land use, logistics, leaks, and assets. Better data, delivered more often, helps customers optimize operations, reduce waste, prevent harm, and verify decarbonisation outcomes at scale.
KELVIUS	Transforms low-grade industrial waste heat (from 50°C) into high-value process heat, achieving upgrades with temperature lifts of + 70-200°C. By valorizing waste heat for continuous reuse, our KelviBoost technology enables customers in the food and beverage, chemicals, and pulp and paper sectors to reduce their primary energy consumption (fossil fuel or electricity) by 25-50%. This delivers significant OPEX savings and increases process efficiency through a scalable, measurable heat-upgrading solution for energy-intensive industrial applications.

KWETTA	Heavy transport remains a major source of emissions, with each litre of diesel producing approximately 2.7 kg of CO_2e (New Zealand Ministry for the Environment, via Climatiq). At scale, this results in tens of tonnes of CO_2 emissions per vehicle each year across freight, bus, and depot operations. Kwetta exists to reduce this impact. By enabling high-power electrification at grid-constrained sites, Kwetta helps fleets transition away from diesel sooner, cutting emissions at scale while avoiding unnecessary grid upgrades and supporting a more resilient, lower-carbon energy system.
MANA WAIRUA ENERGY	The Hydro Energy Conveyor Apparatus enables practical use of tidal and river currents, a renewable resource long overlooked due to the cost and complexity of propeller-style turbines. HECA's simpler linear-flow design lowers deployment impacts and operating costs, making marine energy commercially competitive in sites where radial systems are not viable. By opening access to predictable natural currents with a low-impact approach, HECA supports measurable growth in clean energy, strengthens national energy resilience, and reduces pressure on surrounding ecosystems.
MARA BIO	200 billion litres of cheese whey will be produced annually by 2030 by the dairy industry, which is a serious environmental challenge when disposed to waterways. Mara Bio transforms this by-product into high-value, nutrient-dense ingredients for global food companies through a proprietary fermentation platform. By operating on-site at the source, we eliminate waste, avoid waste transportation, and at scale our technology could reduce carbon emissions by 32,000 tonnes of CO_2 per 100 million litres valorised.
MIRUKU	Compared with traditional dairy cream, our first product - beta-casein cream - requires just 25% of the land, 15% of the water, and 10% of the CO_2 per litre of cream produced. When coupled with across the board economics (lower buy price for customers, higher yield price to growers), at scale our products have the opportunity for real impact.
NILO	NILO upcycles hard-to-recycle plastic waste into formaldehyde-free wood-panel adhesives with a 50–70% lower cradle-to-gate carbon footprint than incumbent resin systems, helping divert difficult plastic waste away from landfill or incineration while reducing reliance on formaldehyde-based adhesives.
NUROX HYDROTHERMAL	Pioneering a new class of circular hazardous waste destruction technology. Our hydrothermal oxidation process destroys complex mixed wastes without combustion, transforming contaminants into stable platform chemicals. A single module can treat up to 5,000 tonnes of hazardous waste annually, preventing persistent pollutants from entering ecosystems while replacing landfill and high-temperature incineration with a cleaner circular alternative.
PASTORAL ROBOTICS	Win win - uses the nutrients in cow urine patches to grow more grass (up to 1500 kg/ha), making the farm more profitable whilst losing less nutrients to the environment as leachate and as greenhouse gasses. Reduces nitrate leaching and nitrous oxide emissions (N2O reduced by 40% subject to approval to use inhibitor).
SAPROTECH	Producing sustainable leather at scale that is similar in performance and lower in cost than animal leather, currently no available product meets this aim. Sustainable means < 10 kg CO_2/m2, no toxic chemical inputs such as DMF or diisocyanates, zero plastic content and biodegradable within 6 months when composted.
SHOWER CANARY	Shower Canary is a New Zealand-developed cleantech product using real-time IoT feedback to reduce household water and energy use. Based on more than 30,000 shower data samples, the study shows an average reduction of 26% in shower time. For a family of four, that equates to annual savings of around 50,000 litres of water, 2,000 kWh of energy, 350 kg CO_2e, and about $500.

SWELLGEN	Provides resilience to coastal and island communities by enabling them to generate electricity or produce drinking water on-site, 24/7, without using fossil fuels - by harnessing the power of ocean movement. Communities with SwellGen: • control their access to electricity and water • have certainty over costs • reduce their greenhouse gas emissions. We estimate that diesel-powered desalination emits 3.8 kg CO_2-e per m3 of desalinated drinking water. A SwellGen unit providing 18m3 of water per day therefore avoids 68.4 kg CO_2-e every single day.
TEINY	Dairy milk powder is a $19B global market, with over 6.5 million tonnes produced annually. We've developed a high-protein powdered oat milk designed to directly replace it in food and beverage manufacturing without reformulation. At just 1% adoption (around 70,000 tonnes), this could avoid approximately 500,000–600,000 tonnes of CO_2 annually. At 5%, that scales to over 2.5 million tonnes - positioning us to drive a meaningful shift away from emissions-intensive dairy at global scale.
TERNARY	'Ternary's world-first solution delivers emissions-free power, cheaper than diesel, and faster charging than battery technology. With 10× the energy density of batteries, liquid electricity is distributed using fossil fuel infrastructure, making it a practical alternative to diesel. They're targeting the 270+ GW diesel-dependent applications in remote industry, maritime, and critical infrastructure; sectors that existing grids cannot reliably serve. Scaling their solution could eliminate billions of tonnes of CO_2e annually, whilst securing energy independence for global industries and vulnerable communities. '
USEDFULLY	UsedFULLY applies a breakthrough thermomechanical processing method to convert end-of-life textile streams into precision-engineered industrial microfibre. The resulting products demonstrate measurable efficacy as a rheological modifier, crack propagation inhibitor, and colour-differentiation agent in industrial applications. This conversion process diverts textile waste from terminal disposal, replacing high carbon virgin additives in construction-sector formulations. Generating quantifiable carbon reduction across two high-emission industries.
WOOD ENGINEERING TECHNOLOGY LIMITED	In a New Zealand context, with global application, OEL™ transforms residual export logs — left over after structural and industrial grading, currently converted into short-lived products that release stored carbon within years — into structural-grade recyclable Harvested Wood Products, locking in carbon for 100+ years. Each 100,000 m^3/year log in OEL™ plant projects cumulative carbon storage of 1.25 $MtCO_2$-eq by year 25 and 4.05 $MtCO_2$-eq by year 75. Wood waste energises the plant fossil-fuel-free. Substituting OEL™ for concrete and steel further avoids embodied emissions.

NEW ZEALAND CLEAN**TECH** REPORT 2026

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