

CallaghanInnovation

New Zealand's Innovation Agency

Assessment of CleanTech innovators that work with Callaghan Innovation (FY20)

July 2021



Introduction #1

Callaghan Innovation is New Zealand's innovation agency. We activate innovation and help businesses grow faster for a better New Zealand. Some of the businesses we help are CleanTech innovators, i.e. high-tech businesses that create products, services or processes that help solve climate change and other environmental problems. In partnership with others, Callaghan Innovation is developing a globally competitive CleanTech innovation ecosystem. Further information can be found on the [New Zealand CleanTech Mission](#).

Introduction #2

A new CleanTech partnership is being launched by Callaghan Innovation with partner agencies, Auckland Unlimited, New Zealand Growth Capital Partners, and Science for Technological Innovation. The partnership, 'CleanTech: Making it happen for New Zealand', includes the development of a five-year roadmap centred on ambitious targets and robust data.

The assessment presented in this document contributes to the data aspect by providing an assessment of CleanTech innovators that work with Callaghan Innovation. The assessment has a number of limitations as listed under the Scope. Future assessments will be more comprehensive, such as the data findings presented in Deloitte's recent report '[New Zealand Space Economy](#).'

Introduction #3

New Zealand Climate Tech For The World (CleanTech Group, 2021) is a new report, commissioned by Callaghan Innovation alongside the partner agencies committed to 'CleanTech: Making it happen for New Zealand'. It provides a complementary assessment of NZ's CleanTech ecosystem.

The report compares CleanTech innovators in New Zealand and other countries across over 30 technology types and also compares New Zealand's CleanTech innovation ecosystem with that in other countries.

The 'CleanTech: Making it happen for New Zealand' partnership statement and *New Zealand Climate Tech for the World* (CleanTech Group, 2021) report can be found on the Callaghan Innovation [New Zealand CleanTech Mission](#) webpage.

Methodology

1.



Define

Define
CleanTech
innovators

2.



Search

List potential
CleanTech
innovators in
New Zealand

3.



Select

Select innovators
that meet
criteria listed
under Scope

4.



Enrich &
Analyse

Add FY20
information and
analyse

5.



Monitor

Improve
methodology,
monitor progress
over the time

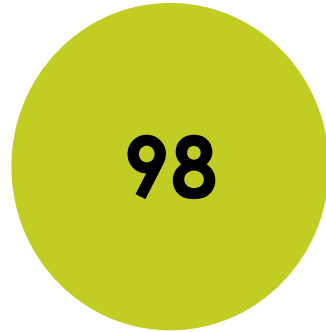
Scope

The assessment is limited to high-tech businesses that:

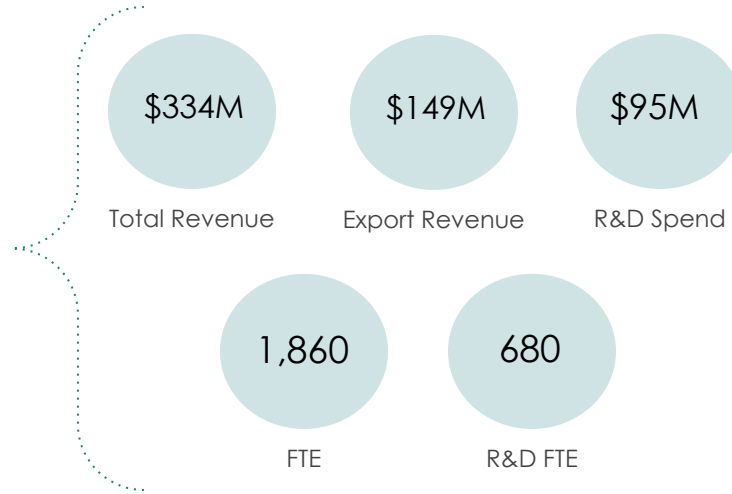
1. Create products, services and processes that help solve climate change and other environmental problems
2. Received R&D (Research & Development) co-funding from Callaghan Innovation during FY20

In addition, these businesses may have worked with Callaghan Innovation on access to experts, technology & product development or innovation skills.

FY20 Summary



CleanTech innovators
that are in scope



Observations

- In addition to the 98 innovators in this assessment, Callaghan Innovation works with an additional ~180 CleanTech innovators who did not receive R&D co-funding during FY20. Instead these innovators worked with Callaghan Innovation on one or more of the following - access to experts, technology & product development, innovation skills, R&D co-funding in previous years. Lastly, we have identified up to 100 business that may be CleanTech innovators which do not currently work with Callaghan Innovation.
- This assessment provides Callaghan Innovation and the NZ CleanTech partnership with a baseline to assess future progress. Whilst of interest, the number and revenue of CleanTech innovators are lagging indicators. Of greater interest are leading indicators such as R&D spend and R&D FTE. Initial analysis not presented here suggests that the R&D spend and R&D FTE of CleanTech innovators are greater than the average.
- Without a common methodology, it is problematic to make cross-sector comparisons. That said, one useful observation is that New Zealand healthtech had FY21 revenues of \$2.85 billion up from \$2.1 billion in the previous year. The growth and vibrancy of a sector focused on human health provides inspiration for one focused planetary health.

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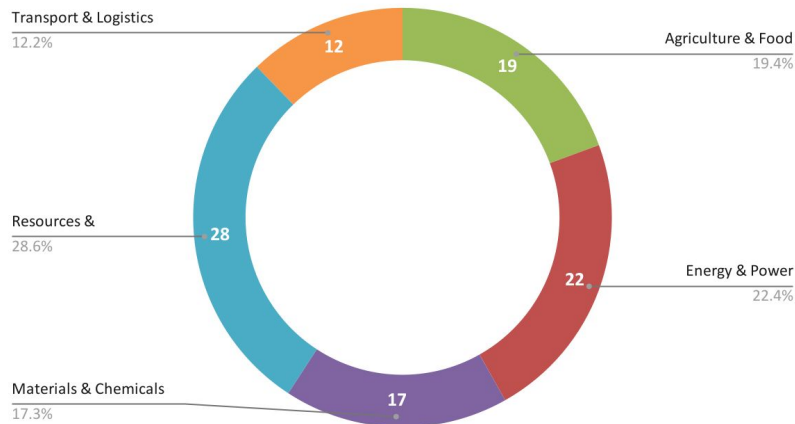
Appendix

CleanTech innovators: Emissions by sector vs number of innovators by sector

Emissions source	Investment opportunities	% of NZ emissions*
Agriculture	Smart agri-tech to improve productivity; feed supplements to reduce methane emissions; improved horticulture technology; new approaches to production	48%
Energy	Renewable energy such as improved distributed rooftop solar and batteries; geothermal fugitive emissions capture; energy storage	21%
Transport	Technologies and new business models to accelerate uptake of electric vehicles across sectors such as domestic, commercial, heavy haulage and marine	20%
Industrial	Technologies to decarbonise process heat used in manufacturing; lower emissions aluminium, cement, building materials; higher performance industrial energy systems; smart catalysts for lower energy chemical production	6%
Waste	Improved recycling, composting and materials recovery	5%
Land use	Land improvement through biochar; bioplastics/ biofuels from forestry byproducts; large-scale uses for wood	-30%**

Source: * MFE 2019: 2017 data. Note: ** Expressed as a negative number as this sector removes more carbon than it emits.

Industry Sector

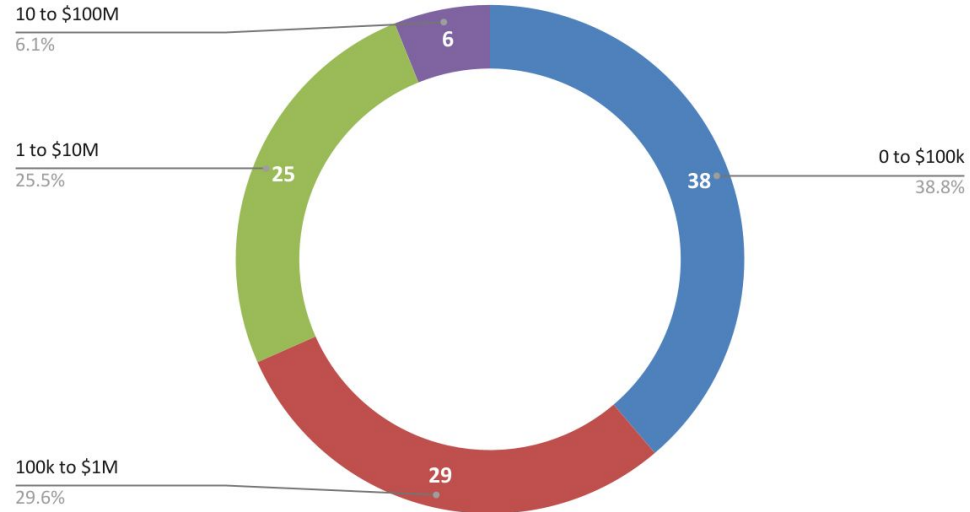


CleanTech innovators: FY20 Overview

Revenue Bucket	#Businesses	Total Revenue	Export Revenue	R&D Spend	FTE	R&D FTE
0 to \$100k	38	\$785,427	\$63,787	\$18,349,023	150	117
100k to \$1M	29	\$11,043,697	\$1,187,890	\$14,275,034	169	116
1 to \$10M	25	\$108,369,379	\$37,096,285	\$41,630,552	711	303
10 to \$100M	6	\$213,642,282	\$110,546,365	\$21,104,885	830	144
Total	98	\$333,840,784	\$148,894,327	\$95,359,494	1,860	680

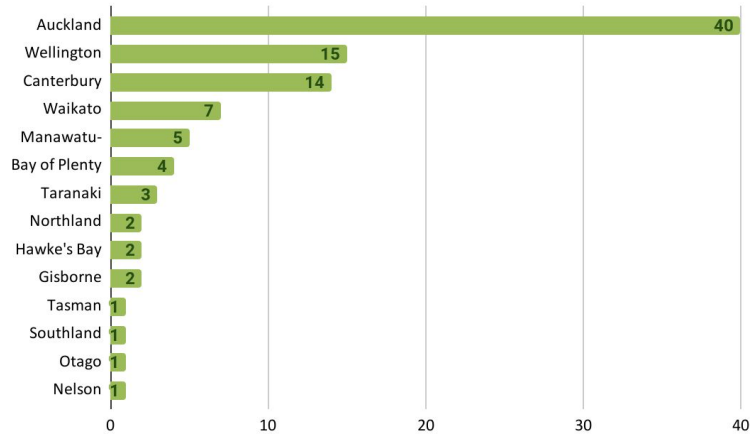
CleanTech innovators: FY20 Revenue

Total Revenue

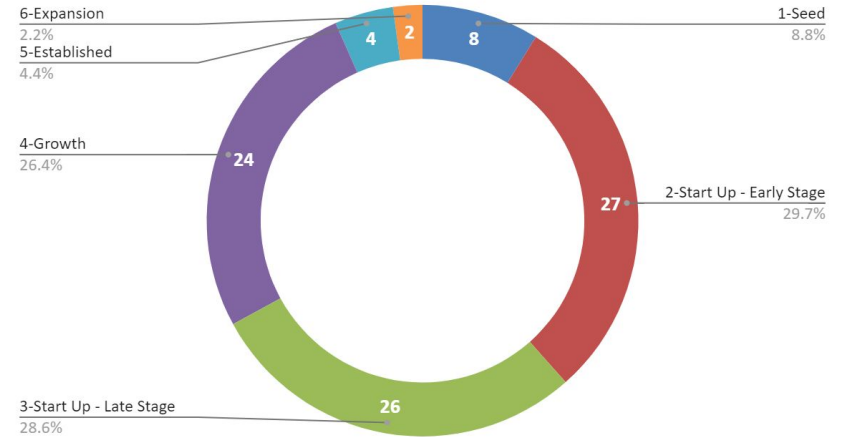


CleanTech innovators: Location and Lifecycle

NZ Region

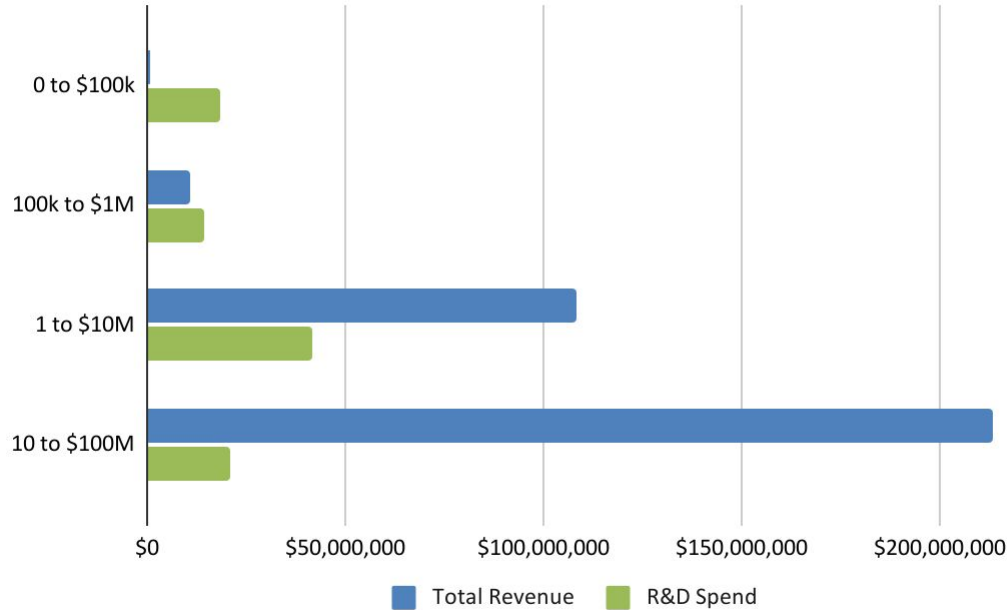


Business Lifecycle Stage



CleanTech innovators: Revenue vs R&D Spend

Total Revenue and R&D Spend



Total Revenue

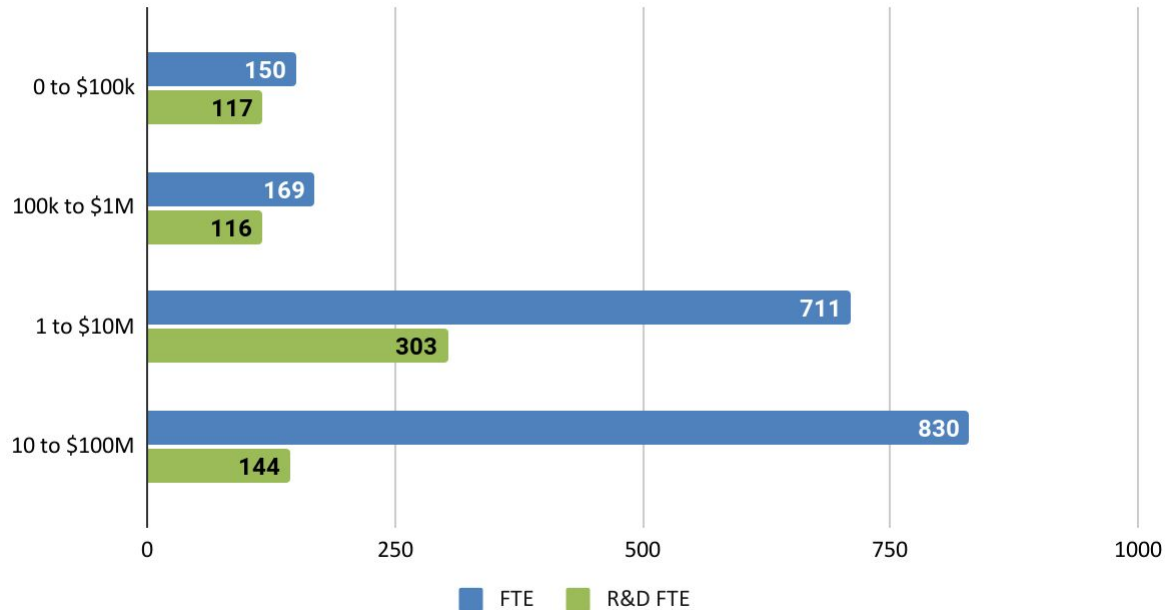
\$334 M

Total R&D Spend

\$95 M

CleanTech innovators: FTE vs R&D FTE

FTE and R&D FTE



Total FTE

1,860

Total R&D FTE

680

CleanTech innovators: Revenue vs Export Revenue

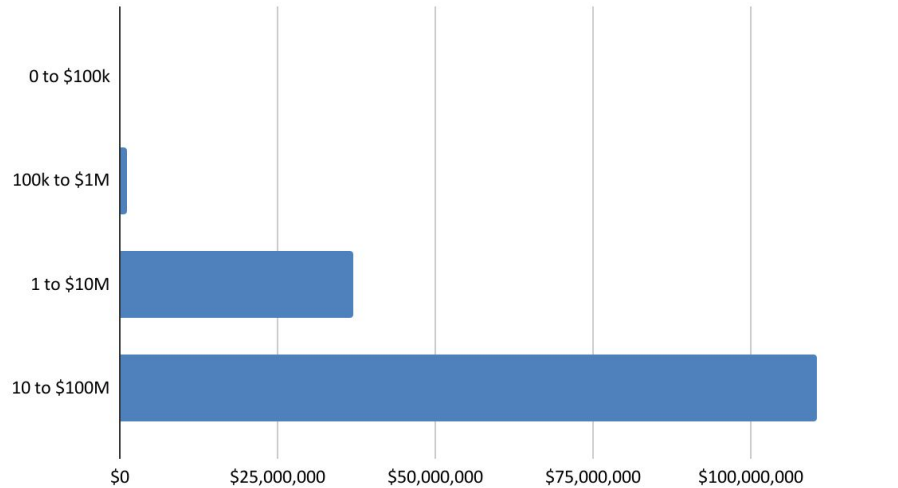
Total Revenue

\$334 M

Total Export

\$149 M

Export Revenue



Total Revenue and Export Revenue

