Canada Cleantech Innovation

2020-2025 Ecosystem Map

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INTRODUCTION

This report is grounded in the author's ecosystem mapping, which includes:

90

Active cleantech **startups** founded in Canada after 2020

65

Local cleantech **funding resources**

8

Professors with commercialization success

Part 1

Canada's emission reduction progress to goal, challenges and innovation trends. The Canadian Climate Institute estimates that the shift to "Wild Cards" technology will be pivotal after 2030. Using hydrogen as a case study, we illustrate why this shift is critical.

Part 2

1. Emerging Innovation Trends: Sector, Diversity, Region

42% of the new startups fall under "Wild Card" category. AI is enabling more cleantech sectors like clean water and fire control. Notably, female Co-founders has a much higher representation in "Wild Card" technologies.

2. Funding Landscape of the 90 New Startups

65% are at grant, pre-seed stage or with no funding records, showing opportunities in seed funding and the urgency to address early commercialization barriers. Additionally, we present the funding distribution across cleantech sectors.

3: Canada Investors with a Speciality in Cleantech

While government grants play a key role, a review of historical grant strategy is needed to improve capital efficiency. This section also highlights the contributions of university-backed accelerators and the emergence of a new cleantech venture studio and an innovation hub.

4. Campus Research Commercialization Gaps and Hopes

Interviews with Researchers reviewed subtle barriers around misaligned incentives among Universities, Professors and Researchers. It emphasizes the need for universities to align their missions, IP policy, and incentives to accelerate research commercialization.

The Appendix includes the **full mapping data** for further exploration.

Methodology

The author approached the research with a Recruiter's lens, starting by mapping cleantech founders across Canada on LinkedIn and identifying ventures launched after 2020 that are actively operating. Next, Crunchbase was utilized to uncover the local ecosystem players supporting these startups, including government funding programs, accelerators, venture studios, and local VCs. The author then examined the portfolio of these ecosystem players to create a more comprehensive ecosystem map.

To address potential gaps, industry reports were analyzed, and interviews with campus researchers were conducted to explore the commercialization gap in university research and its potential impact. While this methodology may not capture every venture, it aims to provide a robust snapshot of the ecosystem.

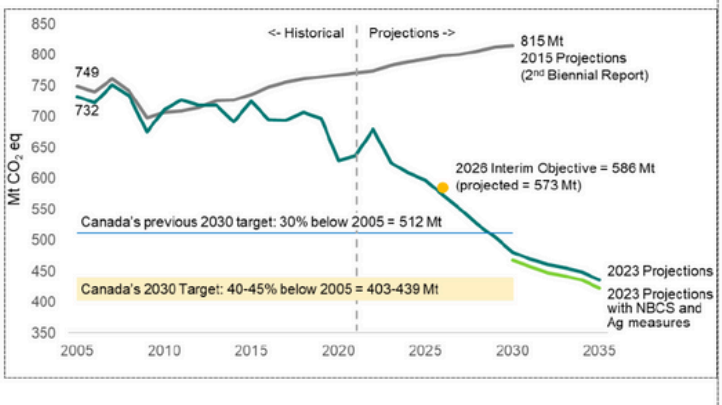
PART 1

A Snapshot:
The Goal, The Roadblocks, and The "Wild Cards"

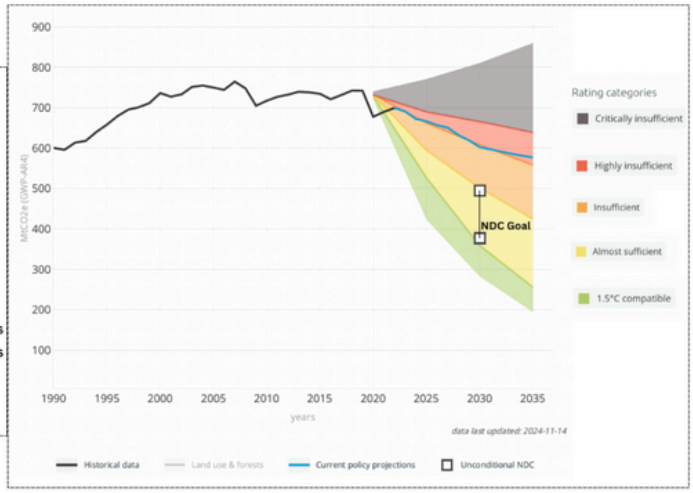
1. The Goal

In 2015, Canada committed to a Nationally Determined Contribution (NDC) of a 30% emissions reduction below 2005 levels by 2030 and signed the Paris Agreement, under which countries pledged to collectively limit global warming to below 1.5°C.[1] In 2021, the Canadian Net-Zero Emissions Accountability Act formalized Canada's **updated targets of a 40-45% reduction below 2005 levels by 2030 and net-zero GHG emissions by 2050**.[2]

1.1 Progress to Goal



CA Government 2023 Emission Reduction Plan Progress Report



Climate Action Tracker, An Independent Scientific Agency

We compared 2 sources for Canada's emission reduction progress.

- According to CA government's 2023 Progress Report, Canada is "on track" to exceed its previous target of 30% reduction, but falls short of the adjusted 40–45% goal.[3] This projection model is optimistic based on if everything was implemented efficiently.
- Climate Action Tracker, an independent scientific agency, used a more critical model and rated Canada's current progress towards the 2030 NDC goal as "**Insufficient**."[4]

1.2 Major Roadblocks

1. Under-financing and Capital Efficiency

- Climate Action Tracker rated Canada's Climate Finance as Highly Insufficient.[5] The government estimates that between **$125 to $140 billion is needed** annually to reach net zero by 2050. However, **only $15 to $25 billion** is currently being invested from public and private sources annually.[6] A critical evaluation of historical funding strategies is also needed to improve the future capital efficiency.

2. Industry Commercialization Barriers

- Slower Economic Returns: Next-gen cleantech, taking carbon capture, utilization and storage (CCUS) as an example, often takes longer to yield economic returns. While CO2-based products can help recoup investments, the short-term market potential remains limited.
- Export Demand: Cleaner technology, like green hydrogen, face higher production costs, limiting international demand which could discourage private investments in the value chain.

3. Campus Research Commercialization Gap

- Researchers often lack clarity about the IP ownership and rights. Compounding this issue is the fact that commercialization is not typically a performance metric for professors, particularly those on a pre-tenure track.

4. Infrastructure and Supply Chain Limitations

- Critical infrastructure, such as CO2 transportation network, requires significant time and investment to develop.

5. Lack of Consolidated Solution and Accountability

- Canada's diverse political, economical and social landscape creates challenges in aligning stakeholders for actions. There must be strong public, business and community leadership and an aligned mindset.[7]

2. The Anticipated Shift - from “Safe Bet” to “Wild Cards”

According to Canadian Climate Institute,[8]

- By 2030, over 2/3 of emissions reductions would likely come from “safe bet” solutions like EV, renewable energy and energy efficiency. They are reliable and predictable; 1/3 would be generated by “wild cards” solutions like CCUS, clean hydrogen and biofuels.
- By 2050, these proportions could switch if “wild card” solutions prove cost-effective and scalable. These solutions will be transformative.

2.1 Reason for the Shift: Hydrogen Case Study

Today, hydrogen makes up <1% of Canadian energy demand but is projected to reach up to 27% by 2050. Hydrogen can reduce 26% of Canadian GHG emissions by 2050 if the estimation is correct. [9]The evolution of hydrogen production technology from black to green offers a powerful example on why a shift to "wild cards" innovations is essential.

Color	Production Method	Cost ($/kg H2)	Emission (kg CO2/kg H2)	Market Maturity
Black / Brown	Produced using black or brown coal.	1.5-3.0	**20-25**	Declining, 20%+
Grey	Produced from natural gas via steam methane reforming (SMR)	0.8-2.5	**8-10**	Mature, 70%+
Blue	Also from natural gas via SMR, but the emissions are captured and stored.	1-3	**2-3**	Emerging, <1%
Turquoise	Produced from natural gas via methane pyrolysis.	3-9	**~0**	Emerging, <1%
Green	Use renewable energy (e.g., wind, solar) to power electrolysis, splitting water into hydrogen and oxygen.	3-9	**~0**	Developing, <1%

(Data Source: Sustainable Hydrogen: Decarbonising production for a greener future)[10]

Hydrogen production methods differ significantly in environmental impact. **Grey** hydrogen, currently the most widely used method, reduces emissions by half compared to Black hydrogen. **Blue** hydrogen enhances Grey hydrogen by capturing and storing up to **90%** of emissions from the SMR process. **Turquoise** hydrogen, produced through methane pyrolysis, generates no direct emissions, though indirect emissions depend on the energy sources used for heating. **Green** hydrogen, created via renewable-powered electrolysis, is theoretically **emission-free**.
Scaling these innovative "wild card" technologies and reducing production costs can make green hydrogen a practical, sustainable alternative to a low-carbon future.

PART 2

Ecosystem Map
Canada Cleantech Innovation: 2020-2025

Part 2 presents our mapping analysis, highlighting:

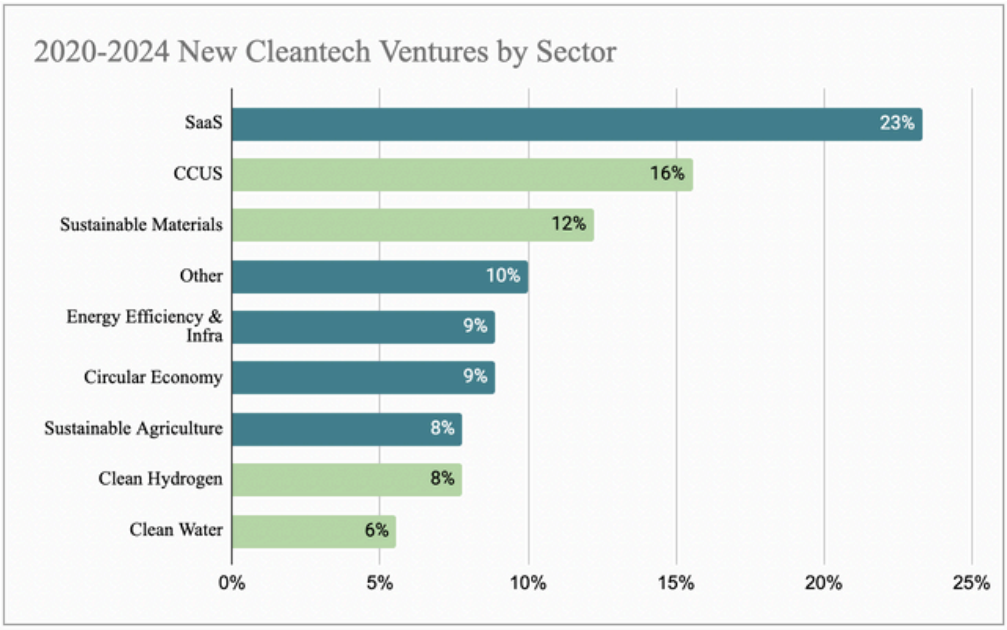
- **90** active clean tech startups founded in Canada after 2020
- **65** local cleantech funding resources
- **8** Professors with recent commercialization success

Full mapping data can be found in the Appendix, while **4 topics** are discussed below:

1. Emerging cleantech innovation trends: sector, diversity and region.
2. The funding landscape and opportunities for Investors
3. Canada-based Investors with a speciality in Cleantech
4. Campus research commercialization gaps and success

1: Emerging Trends by Sector, Diversity and Region

1.1 Sector Trends



("**Other**" covers ventures in Fire Control, Marine Detection, Sustainable Supply Chain , Carbon Offset, Methane Emission Reduction and Sustainable Transportation)

42% of the new startups after 2020 focus on “Wild Cards” technologies.

- Startups in CCUS and Sustainable Materials outnumber those in energy efficiency, signaling a shift from the EV and energy efficiency dominance of the previous decade.
- **Out of the 14 CCUS startups, 4 focus on Direct Air Capture (DAC), 5 are involved in carbon conversion, utilization or metal recovery,** producing synthetic fuels with captured CO2, or recovering nickel from the mineralization process.

Secant Fuel ARCA DEEP SKY

- It worth highlighting a 2024 new startup, Secant Fuel, founded by Canada’s first climate tech Venture Studio Hard Climate, and a Professor from Biomass Technology Laboratory at Université de Sherbrooke. They convert CO2 waste into high-value carbon-neutral fuels and base chemicals. The combination of campus research commercialization and climate tech focused venture studio makes this company high on our watchlist.

- 2 CCUS startups in our mapping were among the finalists of the XPRIZE Carbon Removal Competition funded by Elon Musk. Among them Arca optimizes the carbon mineralization process to capture and lock CO2 away while also enhancing nickel recovery.

- A recent high-profile CCUS startup, Deep Sky specializes in large-scale carbon dioxide removal and storage. Founded in Montreal in 2022, it has already secured a US$40 million grant from Bill Gates’ Breakthrough Energy and a CA$57 million Series A.

EVERWIND FUELS

- **Among the 6 new clean hydrogen companies, 4 specialize in turquoise hydrogen, 1 in storage and transportation and only 1 focuses on Green Hydrogen**.
  - EverWind Fuels is dedicated to green hydrogen. Established in 2021, the company successfully secured CA$125 million in debt financing from Export Development Canada and a CA$21 million grant from Transport Canada.

AI Enabled Cleantech in both “Wild Cards” and “Safe Bet”

The dominance of SaaS highlights the growing role of AI-enabled solutions in scaling and optimizing the cleantech ecosystem.

- An interesting example is Othersphere, an AI company that assists organizations in selecting optimal locations for sustainable infrastructure projects, such as hydrogen production and data centres. Their spatial computing platform analyzes factors like economics, emissions, and local suitability across various sites to determine the ideal project location. They’ve secured a $2.5M seed from Active Impact Investments and was backed by Bill Gate’s Breakthrough Energy Fund.

Startup Highlight

AI is also enabling the new startups clean water, energy management, fire control and climate risk forecasting. **4** out of **6** Clean Water startups incorporating AI models into their clean water solutions.

- Costal Carbon uses AI and remote satellite data to scale a cost-effective model to measure seaweed biomass to protect the ecosystems. Their long term goal is to build artificial general intelligence of the natural world. It’s a startup founded at the University of Waterloo in 2022 and secured a CA$1.6M seed from Canada's Ocean Supercluster.

- Xatoms utilizes AI and quantum chemistry to accurately predict 3D models of photocatalytic structures, aiding in cleaning polluted waters across the globe. It was incubated in University of Toronto’s Spinup Wet Lab Incubator in 2023.

Less Invested but Urgent - Fire Control

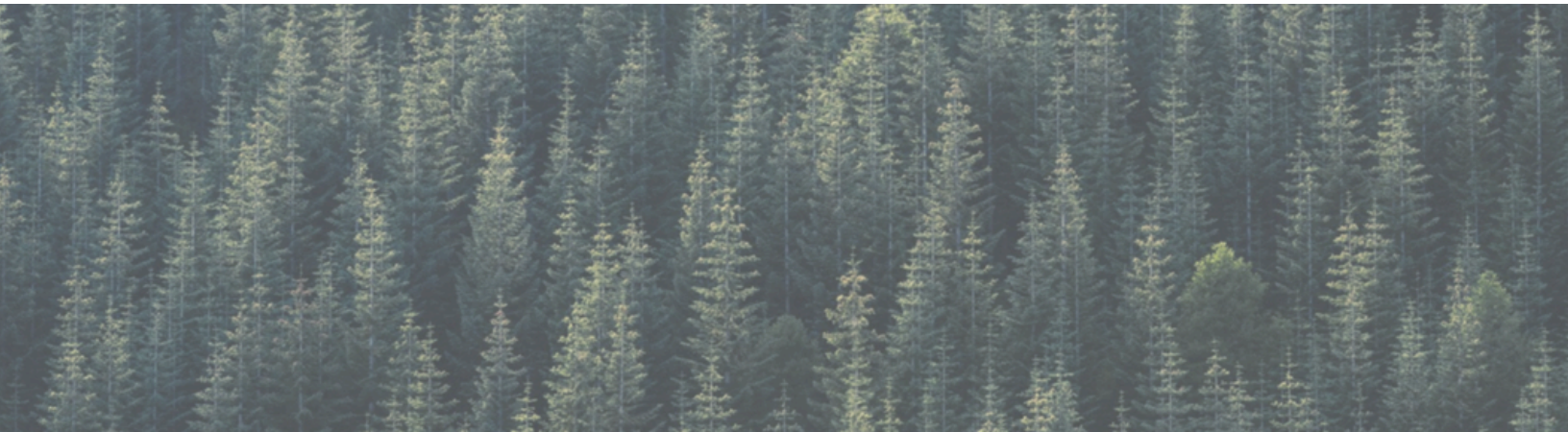
Out of the 90 newly founded startups, only **2** focused on fire solutions and both are recently founded in 2023 in British Columbia.

The cost of fire damage in Canada is extremely high, especially the health cost. The Canadian Climate Institute reported that the health cost from forest fires alone for one week in June 2023 in Ontario amounted to $1.28 billion.[11] In light of the recent Great Los Angeles Wild Fire, we want to highlight 2 newly founded startup in this sector.

Startup Highlight

- FireSwarm integrates drone technology with advanced flight automation and logistics to deliver cost-effective fire fighting solutions. The company recently announced the qualification for XPRIZE Wildfire Competition funded by Elon Musk.

- Voxelis AI builds AI tools for helicopter wildfire suppression. They transforms tradition helicopters into flying AI-enabled learning platforms to collect data and increase misson effectiveness.



1.2 Female entrepreneurs are increasingly active

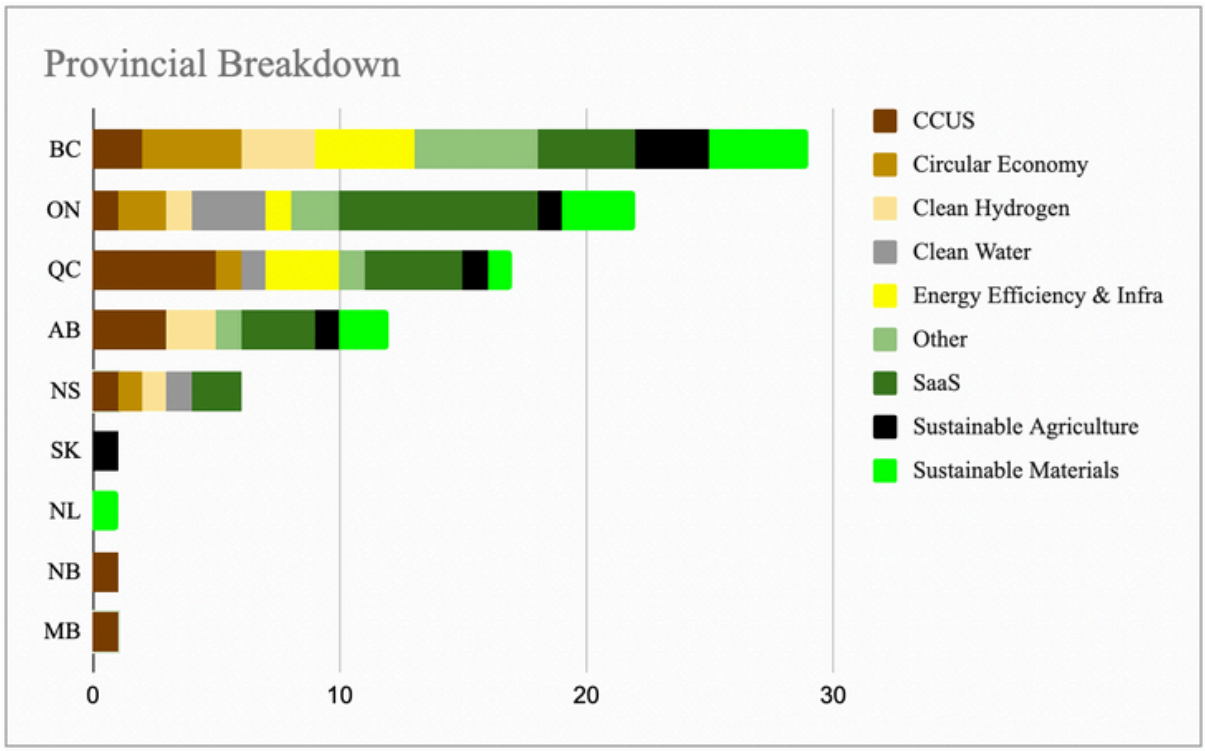
32 (36%) out of the 90 new startups have one or more female co-founders, particularly in the "Wild Card" sectors. Notably:

- 80% of the Clean Water startups
- 64% of the Sustainable Material Startups
- 43% of the CCUS startups

has one or more female Co-Founder.

1.3 Provincial Breakdown

- British Columbia leads in overall cleantech venture creation with a balanced distribution across sectors, especially in Sustainable Materials and Clean Hydrogen.
- Ontario closely follows BC, leads in SaaS and Clean Water.
- Quebec demonstrates strong activity in CCUS.
- Alberta also demonstrated a balanced distribution, with notable startups in CCUS.
- Atlantic and Prairie Provinces are less represented, however, "wild cards" technologies are emerging. Leveraging great renewable resources in these regions, we can expect opportunities in areas like tidal energy, CCUS, and hydroelectricity.



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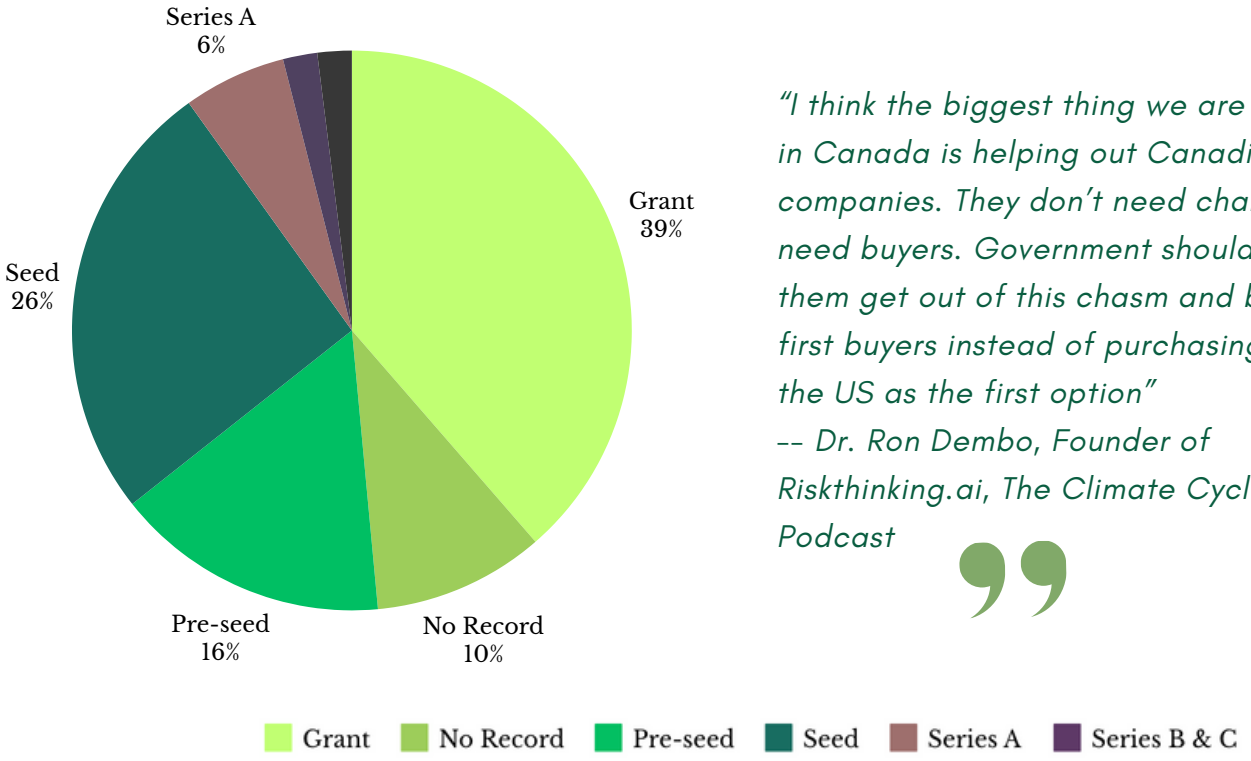
2: Funding Landscape and Opportunities for Investors

Stage Breakdown- 90 Canada Cleantech Ventures Founded after 2020



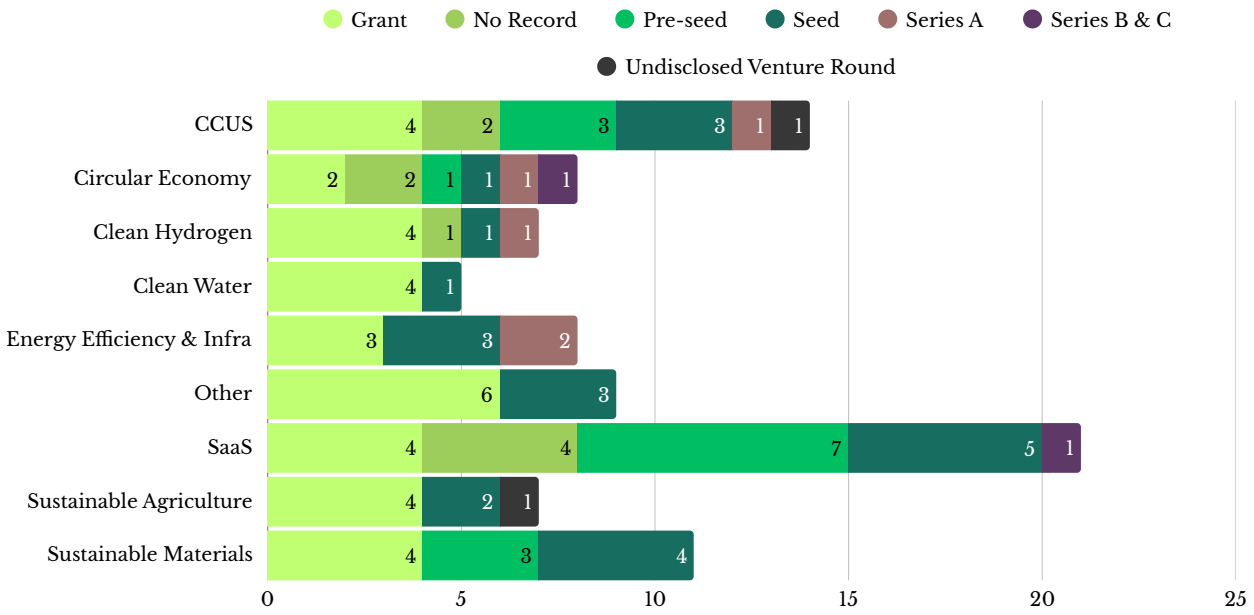
"I think the biggest thing we are missing in Canada is helping out Canadian companies. They don't need charity. They need buyers. Government should help them get out of this chasm and be their first buyers instead of purchasing from the US as the first option"
-- Dr. Ron Dembo, Founder of Riskthinking.ai, The Climate Cycle Podcast

- **No Funding Record (10%)**, **Grant (39%)** and **Pre-seed (16%)** collectively account for **65%** of the new ventures, highlighting an opportunity for investors to explore Seed investments and offer strategic resources to help them grow early customers.

- Canada's cleantech R&D heavily depends on government grants. However, it is crucial to critically assess whether these funds are being allocated effectively and responsibly. Beyond grants, is the government doing enough to help early-stage startups overcome early commercialization barriers?

- Only 6% of ventures reach Series A and 2% progress to Series B & C. While this might signal a funding gap at the growth stage, it's important to factor in the longer innovation cycle of "wild cards" technologies.

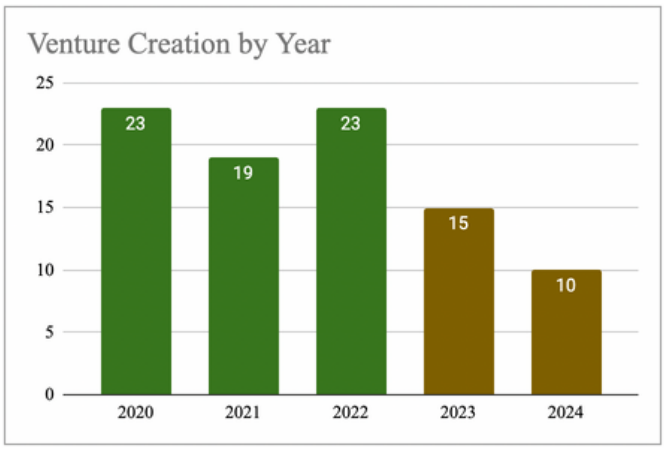
Sector Breakdown- 90 Canada Cleantech Ventures Founded after 2020



- Encouragingly, startups in CCUS and clean hydrogen are beginning to attract private investments at Seed and Series A stages.

Based on BCG's 2023 Canada Climate Tech Report, between 2017 and 2022, private investment in CCUS and Hydrogen Production totalled only $14 billion, compared to $145 billion invested in EVs, Batteries, and Energy Efficiency.[12] Hopefully, with the shifting trend toward ground-breaking innovation, we will see increased private investment flowing into these "Wild Cards" sectors.

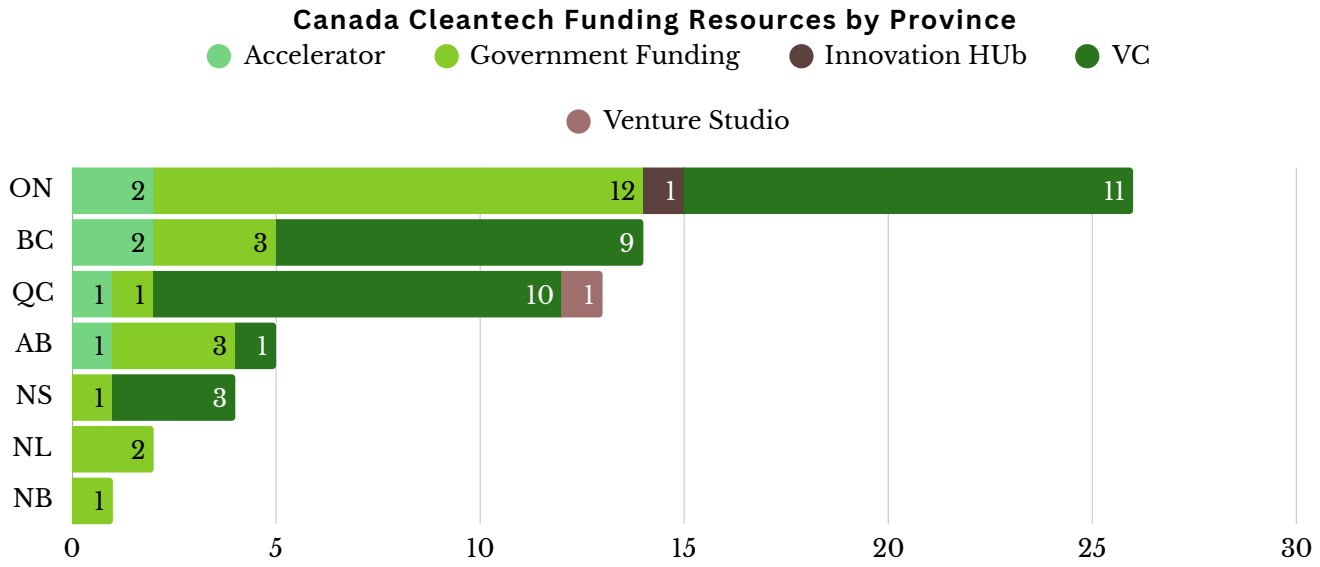
A Decrease in Venture Creation After the 2022 Hype



- The decline in cleantech venture creation post-2022 aligns with the overall tightening of cleantech funding in Canada and globally. In 2024, Canadian cleantech startups secured approximately $1.3 billion across 66 rounds, marking a 15% drop from $1.5 billion across 71 rounds in 2023 and a sharp 84% decline from $2.4 billion in 2022.[13] The increasing difficulty in cleantech fundraising could deter founders from entering this capital-intensive sector.

3.Canada Based Investors with Speciality in Cleantech

This report explores **65** early-stage local funding resources with specialization in the cleantech sector. These include **34 VCs**, **23 government funding and initiatives**, **6 accelerators, 1 innovation hub**, and **1 venture studio**.



- Government grants play a key role in supporting these 90 new cleantech startups. Leading the way are the **BC Centre for Innovation & Clean Energy (CICE),** backing 11 projects; **Sustainable Development Technology Canada (SDTC)**, supporting 8 projects; the **Ocean Startup Project** and and **Alberta Innovates**, each funding 5 projects;

- Ontario has the highest number of funding resources, thanks to a strong presence of government initiatives in Ottawa. Meanwhile, most cleantech-focused VCs are based in British Columbia, Quebec, and Ontario.

- Accelerators are a vital part of the cleantech ecosystem. While this report highlights 6 local cleantech-focused accelerators, **24 of the 90 startups** we mapped have gone through accelerator programs, especially **University-backed Acceleraors** like McGill University's **X1 Accelerator**, the University of Waterloo's **Velocity**, and the University of Toronto's **Creative Destruction Lab**. Accelerators contributed to 80% of the new Clean Water ventures, and 55% of the Sustainable Material ventures.

- It's exciting to see new cleantech focused organizations emerging, such as **Hard Climate,** Canada's first climate tech Venture Studio in Montreal, and the **RXN Innovation Hub**, recently established in Kingston, Ontario.

4: Campus Research Commercialization Gaps and Success

4.1 Gaps

Through the Author's interviews with PhD researchers on campus in 2023, some subtle but significant barriers to research commercialization has emerged:

IP Ownership & Education

- New PhDs often assume, without verification, that their IP defaults to their professor or research sponsor, some admit they didn't thoroughly review the Research Agreements they were required to sign. Early education on IP policies and legal aspects of venture creation could be beneficial to campus research commercialization.

> *" I signed my Research Agreement without reading through. I didn't expect I could negotiate it anyway." - Canada University Researcher, quote from Author Interview.*

Professor's Incentive in Commercialization

- Compounding this issue is the fact that commercialization is not typically a performance metric for professors, particularly those on a pre-tenure track. This traditional structure offers little incentive for professors to pursue commercialization.

> *"We don't reward academics to spin off companies. That's a cultural problem in the way the university system is set up, with an incentive structure around research grants and not innovation" – Canadian Professor, quote from a* ***BCG Climate Tech report*** [15]

> *"Faculty performance is evaluated based on three primary areas: teaching, research, and committee services. So commercialization, spin-offs and patents are not very high priorities, especially if you are pre-tenure." - Canadian Professor, quote from Author Interview.*

Equity Distribution among Professor and Researcher

- The equity distribution between professors and researchers during venture creation can also disincentivize either party to commit to commercialization.

> *""I feel a bit frustrated with the significant portion the professor takes. I wish I had learned about shareholder agreements and how future dilution works earlier." – Researcher, quote from Author Interview.*

4.2 Canadian Professors with Recent Campus Research Commercialization

Despite these challenges, we have identified 8 Professors with success in cleantech campus research commercialization. Full data can be found in **Appendix**.

- Among them, **Professor Curtis Berlinguette** at the University of British Columbia is a prominent example. He heads the Curtis P. Berlinguette Research Group at UBC, which is dedicated decarbonization research in areas such as CCUS and advanced nuclear fusion. Professor Berlinguette has co-founded 2 cleantech startups that with significant milestones. His first venture, Miru (2019), a Vancouver-based startup, is developing next-generation electrochromic windows and has successfully raised a US$20 million Series A. The second startup, Sora Fuels (2024), based in the United States, produces jet fuel from air, water, and renewable energy and has secured US$6 million in seed funding. *(Miru and Sora are not in our mapping due to the geological and time criteria.)*

- Another example is **Professor Jeff Bergthorson** from Mcgill University, who is involved in launching two Iron-fuel based energy storage companies in 2023, Fex Energy and Altiro Energy. It is worth noting that Fex Energy is part of Hard Climate's portfolio, Canada's first venture studio dedicated to climate tech.

If universities can align their mission across all levels, integrate commercialization into professors' performance metrics, and provide early education on IP policies and the legal aspects of commercialization for Researchers, campus research could incubate groundbreaking technologies at a much faster rate to benefit humanity.

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APPENDIX

1. Cleantech Startups Founded after 2020 in Canada

Venture	Sector	Description	Funding	Year	Region	Div
Secant Fuel	CCUS	CCU (Carbon Capture & Utilization). Repurposing CO2 waste into high-value carbon-neutral fuels and base chemicals	In Hard Climate Venture Studio	2024	QC	YES
Skyrenu	CCUS	CCS (Carbon Capture & Storage). Direct-air capture (DAC) system with a rock carbonation process	Grant from XPRIZE Final	2021	QC	
Arca	CCUS	Carbon Storage & Utilization. Carbon Mineralization. Remove CO_2 from the atmosphere and transform it into rocks, for gigatonne-scale impact. The technology also improve nickel yields in upcycling.	Grant from XPRIZE Final, Musk Foundation and CA1.25M funding from CICE 2024,	2021	BC	YES
CarbonRun	CCUS	OCDR (Ocean Carbon Removal): innovative limestone dosing technology to reduce river acidity and delivers carbon to the ocean.	Signed a $25M river alkalinity enhancement carbon removal deal with Frontier. Preseed with Propeller Climate Fund.	2022	NS	YES
Deep Sky	CCUS	Building infra and labs to scale CDR systems	CA57M Series A	2022	QC	
Varme Energy	CCUS	Waste-to-Energy facilities with integrated carbon capture system, Point Source Capture technology.	CA2.8M funding from TIER program of the Alberta government	2022	AB	
Gaia Refinery	CCUS	Unique CDR technolog that merges Direct Air Capture with Biomass Carbon Removal	Undisclosed preseed and CA40k grant	2020	NB	YES
Carbon Lock Tech	CCUS	Bioenergy carbon removal and storage (BiCRS). Processes organic waste into biochar through a process called pyrolysis to prevent methane emission.	CA2.5M Seed from Sustainable Development Technology Canada (SDTC) 2023	2020	MB	
Exterra Carbon Solutions	CCUS	Carbon sequstration / storage. Transforming mineral waste into large scale, durable CO2 storage sinks.	CA1.3M grant from Quebec gobernment grant and CA 2.1M Seed from Propulia Capital's seed	2021	QC	
Terrafixing	CCUS	DAC paired with wind power in far north region.	CA1.6M Seed from Angels - founders of Tugliq Energy Co	2020	ON	
CO280	CCUS	Carbon negative project developer focused on deploying scalable, permanent carbon capture, utilization, and sequestration (CCUS) solutions (e,g, retrofitting pulp and paper mills to collect biogenic CO_2 emissions for permanent sequestration)	Total $30M funding from investors like BDC and grant like B.C. CICE. Signed a $48M Carbon Removal deal with Frontier buyers.	2022	BC	
Kanin Energy	CCUS	Convert industrial waste heat into carbon-free electricity through Waste Heat to Power (WHP) solutions. They also provide turnkey carbon capture solution.	grant from Canadian Technology Accelerator - Cleantech and Seed from Kanin Ventures	2020	AB	YES
Carbon Excel	CCUS	Defossilize hard-to-decarbonize sectors with e-diesel derived from CO2 emissions.	Unknown	2023	QC	YES
O-Two Carbon	CCUS	Carbon utilization, converting industrial emissions from flue gas or off-gas into ethylene	Preseed from Plug & Play	2023	AB	
Veritree	Carbon Offset	Integrate verified restorative actions (tree planting) into client's business model and measure impact	Undisclosed seed from Northside Ventures	2021	BC	
Kathairos Solutions	Methane Emission	Eliminate methane emissions at remote oil and gas sites through a cryogenic system that uses liquid nitrogen	CA1.6M government funding from Clean Resource Innovation Network and Strategic Innovation Fund	2020	AB	
Aurora Hydrogen	Clean Hydrogen	Produce hydrogen and solid carbon with no direct CO2 using innovative microwave-based technology for methane pyrolysis	CA12.85M Series A 2023 from Energy Innovation Capital, CA8M of government funding from NARcan and Alberta Innovates, etc	2021	AB	
EverWind Fuels	Clean Hydrogen	Production and export of green hydrogen and ammonia	CA22M grant from Transport Canada and CA125M debt financing from EDC	2021	NS	
Hydron Energy	Clean Hydrogen	Upgrade biogas into renewable natural gas (RNG) and purifying syngases to produce blue and turquoise hydrogen	CA1.9M multiple goverment funding including B.C. CICE, Natural Gas Innovation Fund, etc.	2020	BC	

Venture	Sector	Description	Funding	Year	Region	Div
VulcanX	Clean Hydrogen	Low-emission hydrogen production using methane pyrolysis	Multiple government funding including CA650k from Alberta Innovates, CA1.35M from NRCan, and CA2M from FortisBC – Clean Growth Innovation Fund	2022	BC	
Ayrton Energy	Clean Hydrogen	Liquid Organic Hydrogen Carrier (LOHC) technology for hydrogen storage and transportation	CA6.8M Seed from BDC Climate Tech Fund and Clean Energy Ventures, CA1.7M Grant from Alberta Innovates	2021	AB	YES
HYCLight	Clean Hydrogen	Converting natural gas into hydrogen and carbon nanotubes	Unknown	2024	ON	
NORAM Electrolysis Systems Inc (NESI)	Clean Hydrogen	Innovative electrolysis systems for hydrogen production. Electrochemical technologies for producing lithium hydroxide from lithium brine and recovering caustic and acid from sodium effluent streams	$4.5M funding from Natural Resources Canada (NRCan)	2022	BC	
Neptune Nanotechnologies	Sustainable Materials	Convert organic fishing waste into ultra-high value nanocrystals that can function as physical additives to strengthen materials used for paper or film packaging, aerospace and automotive composites.	CA1.8M seed from China Canada Angel Alliance	2022	ON	
Nfinite Nanotech	Sustainable Materials	Smart nanocoatings for sustainable, biodegradable packaging	CA8.9M seed led by Collateral Good Ventures	2021	ON	
Solaires	Sustainable Materials	Perovskite-based solar ink for flexible, lightweight, and highly efficient solar panels	CA3.5M Pre-seed	2020	BC	YES
Biolabmate	Sustainable Materials	Producing seaweed bioplastic to replace traditional plastic research labs and medical facilities use	CA25k grant from Ocean Startup Project	2023	NL	YES
ALT TEX	Sustainable Materials	Alternative textiles made from food waste	CA1.5M preseed led by Amplified Capital and Garage Capital, $500k preseed from YC, multiple international and national grant	2020	ON	YES
Green Graphite Technologies	Sustainable Materials	Produce battery-grade graphite from mined natural flake graphite and recycled lithium-ion batteries in a cost-effective and environmentally friendly manner	CA $3.5M funding from NRCan. $2.1M Seed from BDC Climate Fund. grant from SDTC and Cycle Momentum	2021	QC	YES
Anodyne	Sustainable Materials	Develop sustainable, low-carbon chemicals with patented bio processes using enzymes. Turn emission into products like Formic Acid, Formaldehyde and Methanol	Seed led by Syniad Innovations, multiple government grant including SDTC, B.C. CICE, etc	2021	BC	YES
CarboMat	Sustainable Materials	Transforming low-value waste by-products like asphaltenes into high-value carbon fibers	CA4.1M grant from Alberta Innovates	2022	AB	
Lite-1	Sustainable Materials	Develop sustainable, microbial-based dyes	CA30k grant from Invest Nova Scotia	2023	BC	YES
ZS2 Technologies	Sustainable Materials	Sustainable building solutions using advanced materials like magnesium cement to reduce carbon footprints	grant from SDTC	2020	AB	YES
Brokkr Mineral Resources	Sustainable Materials	Bioleaching technology using bacteria to extract nickel, cobalt, and manganese with minimal environmental impact, drastically reducing CO2 emissions	Pre-seed from Syniad Innovations and grant from B.C. CICE	2022	BC	
Swish	Energy Efficiency & Infra	Self-cleaning solar panel with Nanotech	Gov grant, early traction	2024	ON	
Fuse Power Management	Energy Efficiency & Infra	Vehicle-to-Grid (V2G) technology optimizing power dispatch for fleet electrification, supporting grid stability and decarbonization.	CA$895k grant from B.C. CICE	2024	BC	
ReliON	Energy Efficiency & Infra	End-to-end EV charging infrastructure O&M solution, providing integrated experience from problem detection to resolution	CA3M Seed led by Diagram Ventures Climate Tech Fund	2023	QC	
7Gen	Energy Efficiency & Infra	EV charging for fleets	CA8M series A from Siemens Financial Service and FTQ	2020	BC	
Jetson	Energy Efficiency & Infra	Reduce home carbon emission by simplifying the transition to all-electric heating with a cost effective and efficient solution.	Undisclosed Seed from Active Impact Investment 2024	2024	BC	YES
Fex Energy	Energy Efficiency & Infra	Iron-fuel based energy storage	Hard Climate Venture Studio, Axelys grant	2023	QC	YES

Venture	Sector	Description	Funding	Year	Region	Div
Altrio Energy	Energy Efficiency & Infra	Iron-fuel system for energy storage and reactor for zero CO2 emissions	Seed from Hax and SOSV	2022	QC	
Moment Energy	Energy Efficiency & Infra	Repurposed electric vehicle batteries for energy storage	US6M Grant from US Department of Energy 2024, US3.5M Series A led by Vision One Ventures	2020	BC	YES
Biocene Solutions	Clean Water	Clean water solutions for harmful algal bloom removal	Gov grant	2021	QC	YES
Coastal Carbon	Clean Water	Build artificial general intelligence of the natural world, started with seaweed biomass monitoring powered by AI satellite remote sensing	CA800K Funding from CICE 2024, CA1.6M Seed from Canada's Ocean Supercluster 2023	2022	ON	YES
Xatoms	Clean Water	Use AI and quantum chemistry to predict 3D models of photocatalytic structures for purifying water	grant and Convertible Note	2023	ON	YES
Scient Analytics	Clean Water	AI imaging for classification of seafloor sediment samples, which hold crucial information about the subsurface environment	grant from Canada's Ocean Supercluster	2020	NS	
Kraken Sense	Clean Water	Real time pathogen detection for water and food safety	grant from Ontario Genomics	2020	ON	YES
Reusables	Circular Economy	Technology platform to replace single-use packaging using Tap to Reuse software, RFID tracking and Smart Return Bins.	CA $995k grant from CleanBC Plastics Action Fund (Alacrity Canada), grant from SDTC and 100k Seed from LOI Venture	2020	BC	YES
SELLIT9	Circular Economy	E-commerce trade-in platform for consumer electronics.	CA1.45M preseed from Drive Capital and Northside Ventures.	2024	ON	
Microfactory Venture Platform	Circular Economy	Turn wasted resources into engineered products through a closed-loop, circular manufacturing ecosystem and reduce emission.	Founded by ChopValue Founder	2024	BC	
pH7	Circular Economy	Extract and recover metals like platinum, copper, and tin from recycled materials, e-waste, and low-grade ores	$16M series A from TDK Ventures, Pangea Ventures, etc. Multiple government grant including B.C. CICE	2020	BC	
Cylic Materials	Circular Economy	Recycle rare earth elements (REEs) from magnets wastes found in wind turbines, electric vehicles, and electronics	US53M Series B led by ArcTern Ventures and supported by new investors BDC Capital's Climate Tech Fund,	2021	ON	
Fibecycle	Circular Economy	Recycls wind turbine blade waste into ecoFRP - high-quality, eco-friendly reinforced plastics for industry production.	Unknown	2021	QC	
Tersa Earth	Circular Economy	Treating acid rock drainage (ARD) to remediate mining waste and recover metals	CA250k grant from MICA Mining Innovation Commercialization Accelerator	2021	BC	YES
Refine Biomass Solutions	Circular Economy	Turn coffee beans waste into food-grade ingridients.	CA30k grant from Invest Nova Scotia	2022	NS	
Mammoth Climate	SaaS	SaaS for workplace carbon education and credit. Educate, measure and incentivize net-zero action in workplace.	Pre-seed CA1.7M 2022	2021	ON	
Carbon Hound	Saas	SaaS for Carbon measurement. Software platform helps make the measurement and reduction of business' carbon footprint	CA1.3M Pre-seed from Highline Beta and ArchAngel	2021	ON	YES
Orennia	SaaS	AI intelligence platform for the energy transition sectors	Series C from Decarbonization Partners, a partnership between Blackrock and Temasek	2021	AB	YES
Deck	SaaS	Platform for carbon accounting, energy management, and billing automation	CA6.2M Seed from Golden Ventures, Better Tomorrow Ventures and Luge Capital.	2024	QC	
Erode AI	SaaS	Gen AI for weather forecasting	350k Pre-seed from Forum Ventures and Next Canada	2023	ON	
CarbonOne	SaaS	Carbon intellgence platform for F&B industry to measure its carbon footprints	Undisclosed seed from private investors.	2022	ON	
Adaptis	SaaS	Carbon accounting and reduction platform designed to enhance and optimize condition assessments and adaptation planning for buildings	CA2M preseed led by 2048 Ventures	2022	ON	YES

Venture	Sector	Description	Funding	Year	Region	Div
Othersphere	SaaS	Cloud-based tool for pinpointing ideal sites for reliable, affordable, and sustainable energy infrastructure, e.g. hydrogen production site, data centres.	CA2.5M Seed led by Active Impact Investments	2022	BC	
ESGTree	SaaS	ESG reporting platform	grant from Acceleractor Centre	2020	ON	
Veer Renewables	SaaS	Accurate wind and solar energy AI modeling	Unknown	2022	BC	
Boson Labs	SaaS	AI-powered Building Energy Modeling platform for optimizing energy efficiency and reduce emissions	Unknown	2024	QC	
Acara Climate	SaaS	Climate risk management tool that empowers financial institutions to understand climate risks within their agricultural portfolios	Unknown	2022	QC	
Azzera	SaaS	Help airlines and operators streamline environmental impact tracking, meet regulations, and achieve net-zero goals	CA1.5M Seed and Preseed from Nick Houseman	2021	QC	YES
Enurgen	SaaS	Sustainable energy software solution for detailed energy yield modelling and asset management of utility-scale solar assets	$1M seed led by 2048 Ventures	2022	ON	
Connect-X	SaaS	Platform for Power Plants (VPPs) by integrating Distributed Energy Resources (DERs) like solar panels, battery storage, EV chargers, and smart devices. Aim to optimize energy use and improve grid stability.	CA220k from Antler	2023	AB	
Orca Water	SaaS	Smart water metering and monitoring solutions for building water leak to reduce waste	Unknown	2022	BC	
Knead Tech	SaaS	SaaS for food rescue logistics	CA50k Pre-seed from Alberta Innovates and SVG Ventures	2022	AB	YES
OceanSync	SaaS	Create digital weather databases and forecasts to reduce ships' environmental footprint, transport costs, and increase safety	Pre-seed from 2048 Ventures. grant from SDTC	2020	NS	
OnDeck Fisheries AI	SaaS	Computer vision for sustainable ocean management, including fisheries monitoring, video search, and universal species identification.	CA1.5M grant from Canada's Ocean Supercluster and Ocean Startup Project	2022	BC	
LoopX	SaaS	AI-powered Operator Awareness System and Autonomous Operation System for mining industry	Government grant including a CA250K and a CA333k funding from Mining Innovation Commercialization Accelerator MICA, and CA89k from Communitech	2022	ON	
Acuicy	SaaS	Business Intelligent platform to help client reduce emission in a cost efficient way.	CA54 grants from Invest Nova Scotia and Volta Cohort	2023	NS	YES
New School Foods	Sustainable Agriculture	Plant-based salmon for environment and lower emmission.	CA26M Seed + Extension from Good Startup, an Singapore based VC fund for plant-based protein, SDTC, etc.	2020	ON	
Advanced Agriscience	Sustainable Agriculture	Biological solutions to protect crops from extreme weather, particularly frost	Non-equity grant from SVG Ventures	2023	BC	
Prairie Clean Energy	Sustainable Agriculture	Produce renewable bioenergy by converting farming waste(flax straw) into clean-burning biomass	CA1.1M garnt from MICA Mining Innovation Commercialization Accelerator	2020	SK	
Synergraze	Sustainable Agriculture	Reduce agricultural methane emissions through a seaweed-based feed additive for livestock, particularly cattle	grant from SDTC	2020	AB	YES
Opalia	Sustainable Agriculture	Make milk with mammary cells	CA2M Seed led by the Netherlands based Hoogwegt Group	2020	QC	YES
Verdi	Sustainable Agriculture	Irrigation automation platform to improve crop yields, reduce water usage, and optimize irrigation practices	Undisclosed venture round from 3 investors	2020	BC	
Miraterra	Sustainable Agriculture	Soil analysis technology using machine learning and advanced hardware for real-time, non-destructive testing	CA1M grant from B.C. CICE	2022	BC	

Venture	Sector	Description	Funding	Year	Region	Div
Voxelis AI	Fire Control	AI for fire control. Artificial intelligence tools for helicopter wildfire suppression, help firefighting crews put out wildfires faster and reduce CO2 emissions	CA$700K from B.C. CICE	2023	BC	
FireSwarm Solutions	Fire Control	Drone-based automated aerial fire suppression platform	CA$500k grant from B.C. CICE	2023	BC	YES
Deepwater Robotics	Marine Detection	Building long-range and low-cost autonomous underwater vehicles (AUVs) that will travel the ocean for months at a time to complete a variety of survey missions across the globe.	CA25k grant from Ocean Startup Project	2023	ON	
Ocean AID	Marine Detection	Automatic Target Recognition systems to provide rapid and accurate detections of marine objects and marine data insights	CA25k grant from Ocean Startup Project	2023	BC	
Relocalize	Supply Chain	Localize food supply chain, eliminate middle-mile logistics and reduce greenhouse gas emissions with advanced micro factories.	$5.8M Seed led by Desjardins Capital.	2021	QC	
Celerity Craft	Sutainable Transportation	Develop an advanced marine vessel using Dynamic Air Cushion Vehicle (DACV) technology for unmatched speed, efficiency, and low emission	CA25k grant from Ocean Startup Project	2024	BC	
Kite Mobility	Sutainable Transportation	Provide shared electric mobility solutions in residential area.	CA3.5M Seed from Good & Well, Greater Montreal Climate Fund, TAF	2020	ON	

2 Local Ecosystem Players

Investor	Type	Region	Note
Strategic Innovation Fund Canada	Government Funding	ON	With a CA$ 8Billion Net Zero Accelerator Initiative focus on Clean Tech, under Innovation, Science and Economic Development Canada (ISED)
Canada Growth Fund	Government Funding	ON	CA15Billion Public Fund for decarbonization in Canada
Clean Fuels Fund	Government Funding	ON	CA $1.5 billion funding for clean fuels projects, extended from 2021 to Mar 2030.
Natural Resources Canada (NRCan)	Government Funding	ON	Offers a variety of government funding programs to support clean tech.
Smart Renewables and Electrification Pathways Program (SREPs) by NRCan	Government Funding	ON	CA4.5 Billion Fund by Natural Resources Canada
Breakthrough Energy Solutions Canada (NRCan) (Ceased)	Government Funding	ON	Invested in 12 energy tech companies between CA1-3M each across 2020-2021
Sustainable Development Technology Canada (SDTC) , Merging with NRC	Government Funding	ON	Government fund for clean-tech, energy tech and food tech, merging with National Research Council (NRC), with 290 investments.
Canada Ocean Supercluster	Government Funding	NL	Support made-in-Canada ocean solutions
Ocean Startup Project	Government Funding	NL	Support made-in-Canada ocean solutions, funded by Canada Ocean Supercluster and other government and industry partners.
Investissement Quebec	Government Funding	QC	Government corporation that provides funding and financial assistance to businesses in Quebec with a Sector in Clean tech
Export Development Canada Clean Tech Sector	Government Funding	ON	Canada's export crown corporation dedicated to helping Canadian businesses expand to global markets and provide investment solutions, with a big sector in clean tech.
CICE - BC Centre for Innovation & Clean Energy	Government Funding	BC	Support clean energy splutions

Investor	Type	Region	Note
Canadian Food Innovation Network (CFIN)	Government Funding	ON	Offers programs and early stage funding for food innovation
InBC INvestment	Government Funding	BC	$500 million strategic investment fund for BC based companies or venture funds with a focus on climate tech.
Mining Innovation Commercialization Accelerator (MICA)	Government Funding	ON	CA114M national government ecosystem initative to modernize mining and clean tech
Emission Reduction Alberta	Government Funding	AB	Funded by the Government of Alberta through Technology Innovation and Emissions Reduction (TIER Fund), providing grant for GHG emission projects.
FortisBC – Clean Growth Innovation Fund	Government Funding	BC	Invest in projects for reduce carbon emissions in the gas supply and advance climate action
Atlantic Canada Opportunities Agency	Government Funding	NS	Government fund for economic development in Atlantic Canada region, with a great amount of investment in clean / climate tech.
Ontario Genomics	Government Funding	ON	Support genomics-based solutions across key sectors of the economy including climate / clean tech
Alberta Innovates	Government Funding	AB	TELUS Pollinator Fund for Good
Clean Resource Innovation Network	Government Funding	AB	Industry network in Canada to develop, commercialize and foster the adoption of innovative clean technology solutions.
The Atmospheric Fund (TAF)	Government Funding	ON	Investing in low-carbon projects and companies within the Greater Toronto and Hamilton Area (GTHA)
NBIF- New Brunswick Innovation Foundation	Government Funding	NB	Climate Impact Fund for New Brunswick climate tech startups
Canadian Technology Accelerator Climatetech	Accelerator	ON	A program to help Canadian climatetech startups expand to the US market
Foresight Canada	Accelerator	BC	Clean-tech focused
Cycle Momentum	Accelerator	QC	Clean-tech focused
Altitude Accelerator	Accelerator	ON	Focus on Hardtech, Cleantech and Life Sciences
Alacrity Canada's CleanBC Plastic Action Fund	Accelerator	BC	Accelerator with a fund dedicated to plastic solutions
NGIF Accelerator	Accelerator	AB	Clean tech accelrator run by NGIF Capital
RXN Hub	Innovation HUb	ON	Clean/Chem tech innovate hub with labs and facilities
Hard Climate	Venture Studio	QC	Previously BXVEntures. Launched 2 climate tech ventures.
BDC Climate Tech Fund	VC	QC	$400 million fund for Canadian climate tech firms
MaRS Climate Fund	VC	ON	Climate Sector of MaRS
Amplify Capital	VC	ON	Climate, health, education focused fund
Active Impact Investment	VC	BC	Seed fund for climate tech NORAM early stage startups with $200K to $3M in revenue. 3 Funds raised
Diagram Ventures Climate Tech Fund	VC	QC	Closed a CA80M climate tech fund in 2024
ArcTern Ventures	VC	ON	Clean tech and advanced manufacturing in North American and European markets
Chrysalix Venture Capital	VC	BC	Energy focused fund
Evok Innovations	VC	BC	Climate tech VC with a focus on next-generation sectors such as hydrogen and carbon capture.
Propulia Capital	VC	QC	Focus on clean energy, environmental solutions, and industrial sustainability.
TELUS Pollinator Fund for Good	VC	BC	$100M corporate social impact funds with a focus on climate tech and health tech
Renewal Funds	VC	BC	Sustainability focused impact fund for NORAM startups.
Canadian Food Innovation Network (CFIN)	VC	QC	Climate tech fund investing across North America, Europe and Asia
InBC INvestment	VC	BC	NORAM deeptech / cleantech fund for the intersection of advanced computation and novel chemistries
Mining Innovation Commercialization Accelerator (MICA)	VC	QC	Focus: Energy transition & Decarbonization
Emission Reduction Alberta	VC	ON	Clean tech focused VC backed by Canadian Gas Association.
FortisBC – Clean Growth Innovation Fund	VC	ON	Growth equity fund focused on late-stage venture and mid-market PE.
Atlantic Canada Opportunities Agency	VC	QC	Preseed to seed stage clean tech VC
Ontario Genomics	VC	QC	Climate tech focused seed stage VC fund.
Alberta Innovates	VC	QC	Growth equity to companies in the energy, transportation, built environment, industrials and related sectors.
Clean Resource Innovation Network	VC	ON	Digital Industrial and Industrial SaaS fund with a good focus on energy and climate. Growth capital and later stage investing
The Atmospheric Fund (TAF)	VC	BC	Back hard tech companies in materials science, chemistry, and biology to tackle climate challenges
NBIF- New Brunswick Innovation Foundation	VC	BC	Sustainability focused impact venture capital fund for North America startups

Investor	Type	Region	Note
XPV Water Partners	VC	ON	Water resources focused VC
Wittington Ventures	VC	ON	Deep tech with a priority in climate and health
Greensoil PropTech Ventures	VC	ON	Focus on sustainability and decarbonization solutions for real estate
Invest Nova Scotia (Nova Scotia First Fund)	VC	NS	Health tech and clean tech focused early stage fund.
Innovacorp	VC	NS	Nova Scotia crown corporation managing an early-stage venture capital fund, with a good focus on clean tech.
Great Montreal Climate Fund	VC	QC	Impact investment fund. GMCF invests in projects and innovative solutions that contribute to reducing greenhouse gas emissions in the Greater Montreal area.
Bioindustrial Innovation Canada (BIC)	VC	ON	Provides critical strategic investment, advice and services to business developers of clean, green and sustainable technologies
Power Sustainable Lois	VC	ON	Sustainable food and agriculure fund
MKB	VC	QC	Growth equity for Clean tech
The51 Ventures (Food & AgTech Fund)	VC	AB	Power women-led ventures with a fund in agtech and clean tech.
Spring Impact Capital	VC	BC	Health and climate tech focused seed stage fund.
Nadarra Ventures	VC	NS	Agricultural biotech early stage fund from seed to series A.

3 Professors with Cleantech Commercialization Success

Professor	Research Area	Organization	Venture & Funding
Curtis Berlinguette	CO2 utilization, Solar cells, solar fuels, electrochemistry	University of British Columbia	Miru, Series A
		The Berlinguette Group of UBC	Sora Fuel, Seed
Jeff Bergthorson	Carbon-free fuels	Mcgill University	Altrio Energy, Seed
			Fex Energy , in venture studio
Murray Thomson	Alternative energy; hydrogen from methane pyrolysis; biofuels	University of Toronto	Aurora Hydrogen, Series A
Shannon Sterling	Carbon dioxide removal and water resources	Dalhousie University	CarbonRun, Preseed and US$25M deal
Sean Crowe	Bioleaching, oceanography	University of British Columbia	Brokkr Mineral Resources, Preseed
Larry Lessard	Composite materials and material structure.	Mcgill University	Fibecycle
Golam Kibria	Nanomaterials, heterogeneous catalysis, sustainable synthesis of renewable fuels and feedstocks	University of Calgory, the Kibria Lab	CarboMat
			O-Two Carbon, Preseed
Bruna Rego de Vasconcelos	Carbon neutral and base chemicals	University de Sherbrook Biomass Technology Lab	Secant Fuel , in Venture Studio

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Ecosystem 17 specializes in researching technology and venture ecosystems across Canada, Singapore, Japan, and Greater China - beginning with the cleantech sector.

As an Operating Partner, we provide in-depth ecosystem research and analysis, founder and talent scouting, partnerships and supply chain development to help businesses and ecosystem players navigate these dynamic markets.

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