2025's 50

MOST INVESTIBLE
CLEANTECH VENTURES

Where Climate Action Meets Capital Returns

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50

CHOICES FOR A BETTER FUTURE

Every investment is a choice, and every choice shapes the future. Humanity's past choices built the world we live in today. Now, the choices we make—about what to fund, scale, and adopt—will define the world of tomorrow. This may feel daunting, but to us at Foresight, Canada's largest innovation and adoption accelerator, it's energizing.

Every day, our pan-Canadian team **works towards a better future—one defined by cleaner air and water, resilient communities, and a prosperous, low-carbon economy.** Each of our choices, and those of the 1,600+ cleantech innovators we have supported to date, move us one step closer to realizing this betterment.

Our annual Foresight 50 Showcase spotlights the year's most investible cleantech ventures operating in Canada. Each of them proves that **investing in cleantech is not just an ethical choice, but a profitable one.** They are—or are poised to become—profitable for investors and industry adopters alike, while reducing emissions, saving fresh water, and repurposing waste streams into value-added products.

Now in its fifth year, the solutions named in our annual list are enabling Canada and the world to do more with less, sustainably. This year's Showcase is **a culmination of an incredibly committed community—** from the 40+ Foresight team members, to the 37 independent judges, to the 772 full-time employees of the 50 ventures, to the 150 delegates of the Foresight 50 Showcase event.

We invite you to explore these 50 solutions, meet their visionary founders, and join us in scaling the technologies that will define our collective tomorrow.

Together, we can choose a better future:

foresightcac.com

The 2025 Foresight 50 Showcase was presented by Foresight with support from Export Development Canada, Osler, Hoskin, & Harcourt LLP; Calgary Innovation Coalition; Fasken Martineau DuMoulin LLP; Platform Calgary; Bonsai Growth; Brightspot Climate; and Carbon Life Media.

The publishing of this book was supported by Road to Web Summit Vancouver, powered by Innovate BC.

MESSAGE FROM OUR CEO

*“These are not speculative R&D or moral nice-to-haves; they have proven commercial viability to **drive profit and planetary impact.**”*

As a longtime executive and now Interim CEO of Foresight Canada, I am elated to introduce the exceptional solutions of 2025’s Foresight 50. In an era of persistent economic and environmental uncertainty, they represent Canada’s most de-risked, scalable growth climate tech investments.

Our global landscape is one increasingly characterized by political volatility and fluctuating capital markets. Unsurprisingly, many are taking a “wait and see” approach. Yet, in my years spent scaling and deploying technology around the globe in various industrial applications, I have found that the most successful enterprises—the ones who deliver returns above their weight class—are those who are catalyzed by turbulence, using it to identify and shape next-generation solutions.

Foresight 50 embodies this catalytic philosophy. These are not speculative R&D or moral *nice-to-haves*; they have proven commercial viability to drive profit and planetary impact.

Together, this year’s honourees **employ 770+ full-time skilled workers** and have **raised over $377 million** to date, during some of the most unprecedented and challenging years of this century, while continuing to solve urgent, expensive problems for major industries.

Now in its fifth year, I am proud to say the Foresight 50 Showcase has moved beyond a simple list presented in a Zoom webinar; it is now the cornerstone of **Canada’s largest cleantech investment conference,** and a portfolio referenced by investors, industry, and government officials on Canada’s genuine green economic opportunities.

At Foresight, we too have evolved. From a humble accelerator to the nation’s largest cleantech broker, we ensure that market- and problem-driven cleantech moves from concept to commercial deployment with minimal friction and maximum speed. We don’t just accelerate innovation; we de-risk it, helping ventures to fail fast, pivot, and deploy solutions our economy and environment demand.

We achieve this by building bridges across Canada’s entire cleantech ecosystem. Whether it’s government, industry, investors, or innovators, bringing diverse collaborators to one table turns ideas into tangible economic growth, *fast*—creating high-quality jobs and bolstering Canada’s competitive position on the global stage.

Combined, past Foresight 50 ventures have raised more than $2.6 billion since their initial recognition. Many have gone on to deliver significant impact, both environmental and economical.

Their ongoing successes reinforce the catalytic power of spotlighting the nation’s most investable solutions. I wholeheartedly believe the future economy will be a clean one, and that vision is rejuvenated with every new crop of ventures we spotlight in the annual Foresight 50 Showcase.

Sincerely,

– **David Sanguinetti**
Interim CEO, Foresight Canada

MITIGATION

Averting the Worst

Mitigative solutions lessen the severity of the crisis. For climate change, it is one of the most important actions we can take to preserve a livable planet for future generations.

The ventures in this category are developing and deploying clean technologies to radically decarbonize industries and remove greenhouse gas emissions from the atmosphere.

As the world's economy rapidly shifts, we must relentlessly focus on reducing emissions to avoid the most catastrophic and irreversible effects of climate change. Adopting and supporting these solutions is, at its core, a risk management strategy that greatly reduces the need for more costly and complex adaptation efforts later.

- Carbon Conversion
- Waste Heat-to-Power
- Medium- & Heavy-Duty V2G
- Gas Separation & Upgrading
- Sustainable Aviation Fuel
- Marine CO_2 Removal
- Saltwater E-Fuels & Carbon Removal
- Off-Grid Battery Energy Storage
- Real Estate-Based Carbon Credits
- High-Performance Ventilation
- Data Centre Energy Optimization
- Long-Duration Energy Storage
- On-Site Hydrogen
- Modular Small Hydroelectric Systems
- RNG from Residual Biomass
- Energy Storage & Demand Balancing
- EV Energy Mgmt.
- Geothermal Optimization
- Passive Cooling & Energy
- Vehicle Solar Panels

Aeon Blue®

E FUELS FROM SALTWATER

"Our integrated process produces drop-in eFuels while capturing and permanently storing atmospheric CO_2, ***creating a one-two punch against climate change."***

FOUNDED BY

LARK MEADOW &
DEÓIS "YOSHI" UA CEARNAIGH
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HQ: Sydney, Nova Scotia

AEONBLUE.CA

Aeon Blue's solution delivers **sustainable e-Fuels while simultaneously capturing carbon dioxide** and generating high-value co-products.

The Sydney, Nova Scotia-based company has developed a patented seawater electrolyzer that produces green hydrogen using renewable electricity. This is coupled with carbon dioxide captured directly from the atmosphere, commonly known as direct air capture (DAC).

One eighth of the carbon dioxide is combined with hydrogen to create competitive e-fuels, used as a drop-in replacement for fossil fuels, and the remaining is sequestered underground.

Aeon Blue's solution provides a pathway to produce economically viable e-fuels that can be used by the transportation or energy sectors as they seek to decarbonize.

This provides two revenue streams, from the sale of fuels and carbon credits, enabling the fuel to be sold at near cost parity with traditional fossil fuel options. This can contribute to faster market adoption, particularly as markets mandate the use of sustainable fuels.

Sustainable fuels are increasingly being mandated along with growing demand for carbon capture technologies.

However, there is a critical challenge for both in terms of economic viability. Aeon Blue overcomes this by creating multiple revenue streams.

IMPACT

Environmental & Productivity Potential

→ 10 tCO_2e

Removed per e-Fuel Tonne Produced

→ 3X

Efficiency Over Benchmark e-Fuel + DAC Processes

→ 80%

Less DAC-Related Electricity Consumption than Competitors

IMPACT → **0 CO_2** → **85%**

Environmental & Productivity Potential

Emissions at Point of Use

CO_2eq Reduction Compared to Diesel

LONG DURATION ENERGY STORAGE

Sarnia-based AlumaPower provides **generator and generator service solutions using scrap aluminum as a fuel source.**

These safe, quiet, and zero-emission Galvanic Generators™ help provide reliable long-duration backup electricity for critical infrastructure like data centres, telecom companies, and utilities at a comparable cost to diesel or gasoline generators.

A major challenge with renewable energy sources like wind and solar is their intermittency. That means they only produce power when the wind blows or the sun shines. This creates a supply and demand mismatch, which can lead to grid instability.

Therefore, renewables are often paired with a backup electricity source to ensure a continuous power supply.

AlumaPower's solution solves major barriers to the adoption of intermittent renewables, complementing them by providing low-carbon, dispatchable and always available generation capacity.

*"**Zero emissions replacement** for diesel generators, emissions from which cause health hazards."*

FOUNDED BY

ROB ALEXANDER
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HQ: Sarnia, ON

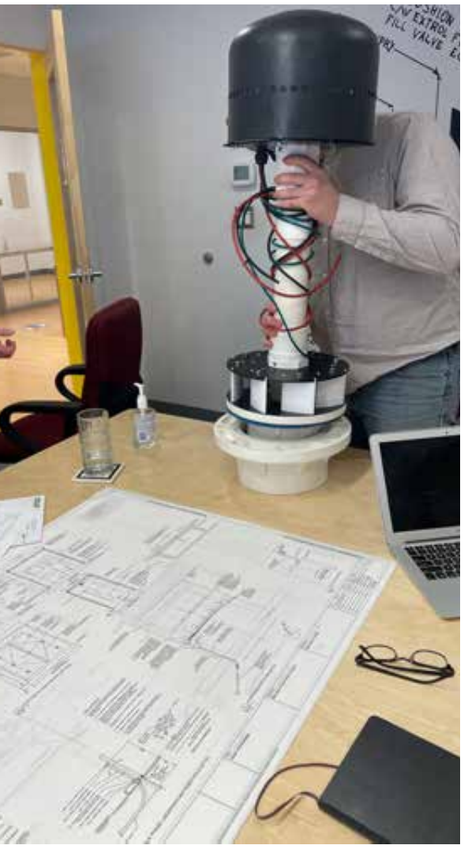
ALUMAPOWER.COM

ASLAN RENEWABLES

TURN ANY

WATERWAY

INTO A POWER PLANT



Aslan Renewables has created a **scalable micro-hydro solution.** These compact, modular hydroelectric systems turn overlooked water flows—like rivers, culverts, and drains—into reliable sources of clean energy.

This approach unlocks a market of previously inactive hydropower sites, providing access to stable, carbon-free baseload power for both urban grids and underserved rural communities.

Aslan has a two-tier business model. Domestically, they secure long-term Power Purchase Agreements (PPAs) with governments and utilities to own and operate micro-hydro dams.

For international markets, the company utilizes a scalable export model, licensing their technology and installation protocols to foreign utilities and developers.

As a reliable source of renewable baseload power, hydro is key to securing a fully sustainable energy grid.

Unlike intermittent wind and solar, hydro supplies consistent energy 24/7, making it an ideal partner for balancing the grid and for long-term energy security.

When deployed on a smaller scale, localized hydro can easily connect to existing electrical grids but can also provide stable, clean energy to remote communities.

> *"Hydro supplies **consistent energy 24/7**...balancing intermittent solar or wind."*

IMPACT

Environmental & Productivity Potential

1% of the CO_2 emissions of a traditional hydro dam installation

Ecologically neutral deployment

Grid-compatible without upgrades = fast and cost-effective deployment

FOUNDED BY

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ASLANRENEWABLES.COM

GOODBYE GENERATOR OVERLOAD

"Power stability and infrastructure resilience... at up to ***50% lower cost and zero thermal risk."***

Due to the high-intensity nature of AI workloads, data centres can experience power swings of up to 50 MW every few seconds.

This is similar to switching the power needs of an entire small city on and off, repeatedly, all day long. This is a challenge for traditional infrastructure as batteries degrade and generators can't respond fast enough, which presents a barrier to scaling AI infrastructure.

Atlas Power has developed a **supercapacitor-based energy system** (SC-ESS) that absorbs and supplies power instantly to meet demands, preventing load spikes and generator overloads.

This enables greater stability and promotes the use of cleaner energy where available as opposed to carbon-intensive backup power.

An energy management system also optimizes the overall efficiency of the system. The solution is modular and is ready to deploy through partnerships with industry partners or directly to consumers.

The production of the solution is also solvent free which provides a safer and more environmentally friendly alternative to batteries.

The AI boom and the data centres required to power it are **expected to significantly increase demand on the electricity grid.**

According to a report from RBC, if all the data center projects that are currently under review by regulators in Canada proceed, they could account for 14% of the country's total power needs by 2030. [1]

FOUNDED BY

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IMPACT

Environmental & Productivity Potential

Significantly enhances grid stability by better supporting intermittent renewables (wind/solar) and reducing reliance on high-emission fossil-fuel peak plants.

Unlike lithium-ion batteries, it offers a dramatically **longer lifespan (1-2 million cycles),** eliminates hazardous chemical risks, and requires no rare materials.

Supports **energy reliability in remote communities** and drives the creation of new green energy jobs.

IMPACT
Environmental & Productivity Potential

→ **HIGH**
Capital Expenditure Bypassed

→ **40%**
Less Lifecycle Emissions from Transport

→ **250 tCO_2e**
Eliminated Annually per Deployment

ON SITE HYDROGEN PRODUCTION

"Modular, on-site hydrogen solutions that empower fleet operators, municipalities, and industrial users to adopt clean fuel without supply chain barriers."

FOUNDED BY

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& PETER LACEY
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AZOLLAHYDROGEN.COM

Azolla is addressing key barriers to the hydrogen fuel market by providing **modular, on-site hydrogen production, storage, and dispensing systems.**

Started by co-founders Jared Sayers and Peter Lacey in Calgary, the technology directly solves the primary operational problem currently hindering widespread hydrogen adoption: the high cost and environmental footprint of centralized production and delivery.

Azolla's units use methanol and de-ionized water as feedstock, offering a practical and efficient method for continuous hydrogen production.

By offering a decentralized model, Azolla enables fleet operators, municipalities, and industrial users to produce their own hydrogen safely and cost-effectively, resulting in significantly lower transportation costs and a reduced carbon footprint compared to traditional methods.

Canada currently produces about 4 million tonnes of hydrogen annually. [2]

However, a key barrier to scaling up the low-carbon hydrogen economy is the high cost associated with its production and, critically, the lack of storage and transportation infrastructure.

Moving highly flammable hydrogen from large centralized production facilities to end-users is complex, expensive, and adds to the total carbon footprint.

With the hydrogen infrastructure market projected to grow from USD $5.4 billion in 2023 to over USD $12.7 billion by 2032, decentralized, on-site hydrogen production solutions like Azolla's are well-positioned to reduce lifecycle emissions and distribution costs and accelerate adoption across industrial and fleet sectors. [3]

IMPACT

Environmental & Productivity Potential

Canada projects that the number of zero-emission light-duty vehicles will grow to 21 million by 2040, requiring **679,000 public charging ports nationwide.** [4]

Estimates project that both light-duty and medium- and heavy-duty vehicle charging could add **up to 22,000 MW of demand to Canada's electricity grids by 2040,** with costs ranging from $26 billion to $294 billion from 2025-2040. [4]

EVs SANS CHARGING STATION.

CAPSolar of Montreal develops **integrated solar panel technology for vehicles.** These panels are either semi-transparent for windows or colour-matched for car bodies, making them aesthetic and virtually invisible to the eye.

From a manufacturing perspective, the technology is being developed to be highly scalable and easily integrated into existing vehicle production lines.

Founders Samy, Xavier, and Chaine want to make vehicles, particularly those used in cities, capable of driving exclusively on solar energy.

CAPSolar is offering a pathway to reduce reliance on external charging infrastructure for EVs, thereby addressing key barriers for drivers and for electricity providers.

Accounting for 22% of national emissions, **transitioning Canada's transportation sector to EVs is essential** to achieve climate targets.

A key foundation of the EV transition is building a network of charging infrastructure, which is no small feat.

Both the public and private sectors will need to invest substantial effort to build sufficient charging stations throughout Canada.

The number of EVs projected to be on the road in the next 15 years will also add a significant additional load on electricity grids.

If EVs could generate some of their own power, this would help reduce the strain on Canada's electrical grids and ease the urgency of infrastructure development.

Additionally, range limitations and anxiety are some of the most frequently quoted barriers to EV adoption by drivers.

In a large country like Canada, which has long distances between cities and, in some cases, charging stations, a self-powered EV could mitigate range anxiety and increase the practicality of EVs for longer trips.

> *"Our goal is to make **every surface of a car solar-active.**"*

FOUNDED BY

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CAPSOLAR.CA

carbonova

NANO FIBRES FROM CAPTURED CARBON

"This not only mitigates the environmental impact of these gases but also ***reduces the need for energy-intensive carbon capture*** *and storage."*

Calgary-based Carbonova's patented chemical process **re-engineers carbon nanofiber production.**

Carbonova's technology converts captured CO_2 and methane into high-strength, thermal, and electrically conductive carbon nanofibers at a lower cost and with fewer emissions compared to current production methods. The solution provides industrial manufacturers with a high-performance material that can be used in applications like plastics, concrete and lithium-ion batteries.

Carbonova's solution helps reduce industrial emissions while creating a low-carbon, value-added product, carbon nanofibers, which also offer the functional benefits of increased mechanical strength and electrical conductivity.

IMPACT

Environmental & Productivity Potential

Converts waste products into valuable, in-demand, and carbon-negative carbon nanofibers (CNF).

A single 10,000-tonne-per-year CNF plant is projected to reduce grid-generated electricity consumption by approximately 27.8 billion kilowatt-hours annually.

The global carbon fiber market is rapidly expanding, projected to grow from USD $8.8 billion in 2024 to almost USD $30 billion by 2034, driven by demand in aerospace, automotive, and industrial manufacturing for lightweight, high-performance materials. [5]

This expansion increases pressure on high-carbon manufacturing methods. Carbonova directly addresses this problem by producing carbon nanofibers using captured carbon dioxide as feedstock and providing industry with low-carbon, high-value materials.

Using Carbonova's carbon nanofibers as an additive can reduce the carbon footprint in plastics, batteries and cement while simultaneously improving structural integrity.

FOUNDED BY

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WASTE HEAT TO POWER

IMPACT
Environmental & Productivity Potential

→ **-0.8 tCO_2e**
Per MWh of Electricity Produced, Offsetting Diesel

→ **-0.4 tCO_2e**
Per MWh of Electricity Produced, Offsetting Natural Gas

*"We convert **heat to electricity,** bringing [down] cost and carbon emissions."*

FOUNDED BY

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Founder Brendan MacDonald has developed a new version of an old technology that **transforms waste heat from industrial processes,** such as those in steel and cement production, into clean and reliable electricity.

Toronto-based Ekstera offers a new kind of Stirling engine (also known as an external combustion engine). It's a scalable and more cost-effective alternative to current waste heat recovery systems, which are often large and expensive. This enables industrial customers to reduce both their energy costs and carbon emissions by offsetting the use of diesel and natural gas to generate electricity.

Anytime we use energy, we generate heat. This is due to the laws of thermodynamics.

Whether it's a car engine or an industrial plant, **a significant portion of the energy we use is lost as waste heat,** which dissipates into the environment.

This waste heat is a large energy source that can be captured and converted back into electricity.

*per MWh of electricity produced

"Cheaper, cleaner peak capacity without capital upgrades."

EV TURNED POWER PRODUCER

Fuse is aiming to turn idle electric-vehicle (EV) fleets into power producers.

Vehicle-to-grid (V2G) technology leverages parked EV batteries to deliver energy back to the grid at peak capacity or when the grid is stretched and recharging vehicles when electricity is cheaper and cleaner.

As the cost of energy changes throughout the day depending on demand, being more expensive during peak hours, this solution can provide economic and environmental benefits to multiple parties. When electricity demand is low, the grid is more likely to be powered by more consistent and often cleaner sources.

The EV chargers and software analyze available data to ensure that carbon intensity is managed and that vehicles return electricity to the grid to maximize carbon savings.

Fuse has secured a ten-year power-purchase agreement with BC Hydro and is developing the first hub in Metro Vancouver, demonstrating the technology's effectiveness.

The solution is easily replicable in other markets, offering lower deployment costs because projects are designed to meet grid operator requirements and remain technology agnostic.

Electrification of industry and infrastructure will be necessary to meet climate action targets, and this transition will significantly increase demand on the electricity grid.

Governments are also mandating the adoption of EVs, with the number of zero-emission light-duty vehicles in Canada expected to grow to 5 million by 2030, and eventually reach 21 million in 2040.

V2G technology transforms EVs from a power drain into mobile energy storage assets that can support and stabilize the electricity grid.

FOUNDED BY

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FUSE-POWER.COM

IMPACT

Environmental & Productivity Potential

Directly achieves carbon savings, reduced air pollution, and less noise; supports the grid by enabling reduced emissions through energy arbitrage and supplying cleaner electricity during peak demand; and by using AI-monitored batteries to extend lifespan, it reduces the demand for freshly mined lithium, nickel, and cobalt. Furthermore, establishing and running a V2G depot creates skilled, permanent jobs in fields like power electronics, software, and field service.

OFF GRID BATTERY ENERGY STORAGE

*"Global spending on **energy security** and cyber resilience is surging."*

FOUNDED BY

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GRENGINE.COM

Grengine builds the **world's most cyber-secure, modular battery systems** for off-grid, Arctic, and mission-critical energy applications. Its patented, plug-and-play battery energy storage systems (BESS) are moveable, stackable, and scalable, enabling rapid deployment without specialized engineering.

The platform offers a fuel-free, reliable alternative where diesel falls short. Grengine's technology supports remote communities, electric vehicle charging, and mobile sites, providing cleaner energy access even in areas with limited grid infrastructure.

With hardware-level cybersecurity built directly into every pack, the system meets new government mandates and cybersecurity regulations. This makes Grengine the only vendor capable of out-of-the-box compliance.

Across Canada, approximately three-quarters of 250 remote communities still rely on diesel generators.

Collectively, these generators consume over 680 million litres of fuel each year. [6] [7]

The reliance on diesel generators presents issues such as high transportation costs, unreliable fuel supply chains, and environmental and health risks associated with pollution and spills.

Grengine's clean, fuel-free battery system directly addresses these challenges. The system's robustness, rapid deployment capability, and fuel independence also make it highly applicable for government and defence operations, where reliable, off-grid power is essential.

This capability is critical given recent federal mandates, such as Bill C-26, which specifically require designated operators in the energy and transportation sectors to establish rigorous cybersecurity programs and mitigate supply chain risks. [8]

IMPACT

Environmental & Productivity Potential

Fuel-free system reduces carbon emissions, pollution & **total costs while improving reliability**.

Patented cybersecurity ensures **energy security for government and defence** applications.

Validated through Department of National Defence pilots and Arctic deployments.

GAS SEPARATION & UPGRADING

IMPACT
Environmental & Productivity Potential

→ **≤50%**
Reduced Project Capital & Operating Costs

→ **356k+**
Tonnes of CO_2e Reduced by 2030 with Widespread Implementation

*"**A turnkey platform solution** to the RNG, Direct Air Capture, Carbon Capture, and Rare Gas Production industries."*

FOUNDED BY

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HYDRON.CA

North Vancouver-based founder Soheil Khiavi of Hydron Energy has developed the INTRUPTor™ system, an **efficient, low-cost, and low-emissions gas separation technology** poised to transform the Renewable Natural Gas (RNG) and carbon capture markets.

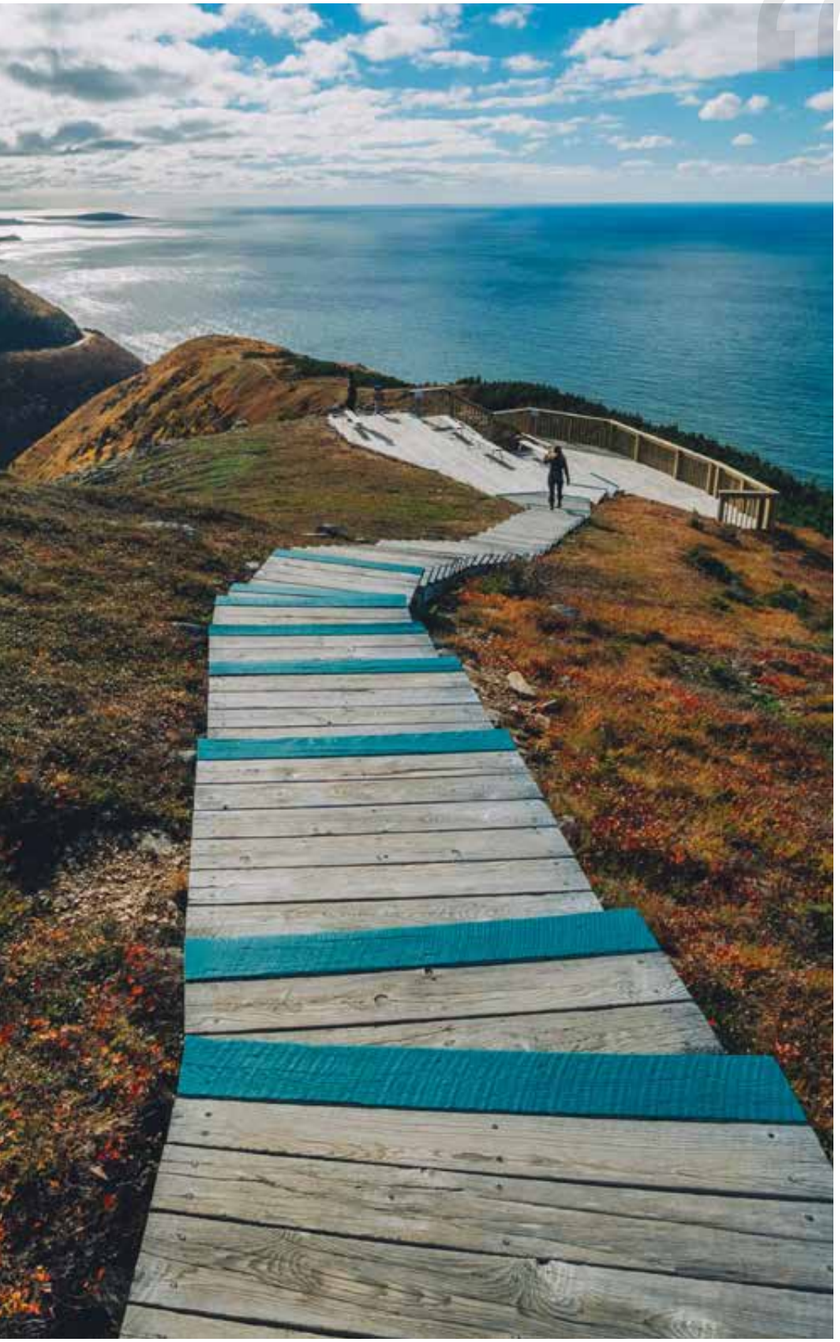
The company offers a turnkey solution for applications such as RNG production, e-fuels and sustainable aviation fuel (SAF) production from Direct Air Capture, and rare gas production for the aerospace, defence, and medical markets.

It leverages biomimicry: a process that mimics nature, specifically, a respiratory system. The system operates in ambient conditions to simplify the entire plant design and manufacturing, making the INTRUPTor™ system a more cost-effective and environmentally friendly alternative to existing solutions.

Renewable fuels, like RNG, SAF, or e-methanol, are expanding rapidly as decarbonization solutions for hard-to-abate sectors, but they face persistent cost and efficiency barriers.

Conventional gas separation methods often require high pressures or cryogenic conditions, driving up capital and operating costs.

These challenges create a strong demand for technologies that can deliver the same results under ambient conditions at lower cost.



We're not just building a carbon removal company—we're building the ***future of the blue economy."***

IMPACT

Environmental & Productivity Potential

Meets **high durability standards** (200+ years) for carbon credits

Co-benefits include **stronger marine ecosystems and fisheries,** pollutant removal, and increased ocean health

Lillianah's low-cost removal process is targeted at just **$24-29 per CDR Credit,** compared to other engineered approaches, which often exceed $600 to $1,000 per tonne.

MICRO ALGAE MAKES BIG IMPACT

Lillianah Technologies has **a scalable and affordable solution to remove carbon dioxide from the atmosphere.**

The Dartmouth, Nova Scotia-based company cultivates phytoplankton, also known as microalgae, microscopic organisms that form the building blocks of the ocean food chain. These organisms absorb CO_2 from the atmosphere, sequestering carbon for centuries at a fraction of the cost of land-based methods.

The solution also delivers significant co-benefits like cleaning polluted waterways, restoring marine ecosystems, and supporting biodiversity.

Founder and CEO Benjamin Slotnick understands the value of carbon removal and ecosystem restoration, monetizing the solution through three revenue streams.

Lillianah's primary revenue model is the generation and sale of CDR credits on the voluntary carbon market, supported by bioremediation and ecosystem restoration services and intellectual property licensing pathways.

Carbon removal is necessary for society to reach net-zero emissions.

The demand for carbon removal credits on the voluntary carbon market is accelerating as corporations and governments commit to net-zero targets, so much so that supply cannot keep up with demand.

Corporations are also becoming much more selective. They are prioritizing credits that are rigorously verified, have high permanence, and offer additional social and environmental co-benefits.

FOUNDED BY

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AI TAMES THE ENERGY SURGE

"Most data centres still operate as ***static, always-on systems,*** *regardless of grid signals or cost fluctuations."*

LOD Technologies has developed an **energy optimization platform** that provides data centres with a seamless and secure way to add flexibility to their operations.

Based in Vancouver, the AI-powered analytics solution enables operators to align energy use with real-time grid conditions, helping them optimize performance, reduce costs, and ensure compliance with emerging regulations.

By optimizing the flow of energy and workload within data centres, LOD helps operators of flexible infrastructure achieve lower costs, greater uptime, and unlock new revenue streams through grid balancing and demand response programs.

In Canada, **data centres consume approximately 1% of the nation's total electricity annually,** with about half of this energy used by computing servers and 40% dedicated to cooling systems. [9]

The increasing demand for data processing, driven by advancements in AI and cloud computing, is projected to significantly elevate this consumption.

For instance, AI-driven data centres typically require over 100 MW of electricity, equivalent to the annual consumption of approx. 350,000 EVs. [10]

This surge in energy demand highlights the urgent need for innovative solutions to optimize energy consumption.

FOUNDED BY

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IMPACT

Environmental & Productivity Potential

→ **30-50%**
Energy Cost Reduction

→ **40%**
Energy-Related Emissions Reduction Potential

→ **15k tCO_2e**
Avoided Annually

REAL ESTATE RETROFIT REVENUE

*"**Banks are leaving $4.5B on the table...** [without a] credible pathway to monetize emissions reduction value for buildings."*

FOUNDED BY

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ONTOLY.ORG

Ontoly is a **software platform that turns building emissions into high-value carbon credits,** addressing a new market driven by rising emissions limits and compliance costs.

As the first platform focused specifically on real estate-based carbon credits, Ontoly, founded by Ashley Sarauer in Squamish, BC, helps building owners, retrofit aggregators, and financial institutions certify and sell their retrofit reductions.

This process unlocks a new revenue stream and provides compliance cost savings, offering a far more cost-effective and faster alternative to legacy registries.

It also makes it financially viable for thousands of smaller and mid-sized retrofit projects that would otherwise go uncertified.

Canada's construction sector is the third-highest carbon-emitting economic sector in the country. [11]

With existing buildings accounting for a significant portion of these emissions, retrofitting presents a crucial opportunity for decarbonization.

However, the process is often hindered by complex certification procedures and high costs.

Ontoly's software platform addresses these challenges by streamlining the certification of retrofit projects, enabling building owners and retrofit aggregators to effectively monetize emissions reductions.

ONTOLY

IMPACT
Environmental & Productivity Potential

→ **80%**
Lower Certification Costs

→ **100-5k**
tCO_2e Reduced per Project

A BREATH OF FRESH AIR

*"**Fresh, filtered air** in an energy-efficient way with low carbon emissions."*

Vancouver-based Oxygen8 engineers and manufactures **high-efficiency dedicated outside air systems** for commercial and multi-family residential buildings.

Founded by James Dean and Matthew Doherty, the company's solutions provide fresh, filtered air while being highly energy efficient.

By leveraging high-efficiency energy recovery ventilators (ERVs), Oxygen8 recovers up to 70-80% of thermal energy from exhaust air, drastically reducing the need for fossil-fuel-based heating and cooling. As a result, their systems provide healthier indoor air and lower energy costs to engineers, architects, and building owners.

In Canada, HVAC systems account for approximately 60% of the energy consumed in commercial and institutional buildings, with heating as the largest component. [12]

According to Natural Resources Canada, **innovative technologies for heating, ventilation, air conditioning, and refrigeration** are essential to achieving the vision of market-feasible net-zero energy solutions by 2030 and reducing electrical demand during peak times. [13]

FOUNDED BY

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MATTHEW DOHERTY
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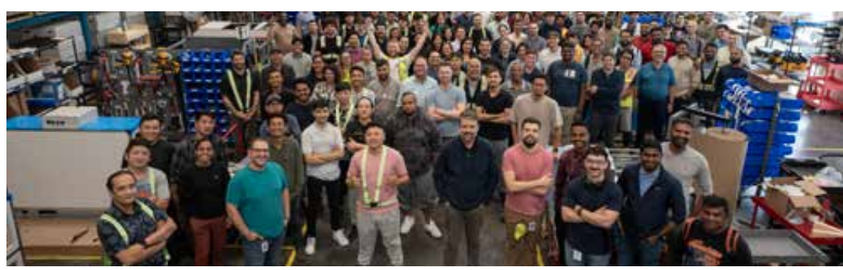


IMPACT

Environmental & Productivity Potential

- **70%** Reduction in HVAC-Related Emissions
- **20-40%** Reduction in HVAC-Related Energy Costs
- **100%** Fresh, Filtered Outside Air
- **20x** Reduction in Indoor Air Particulates

STORE CARBON. RESTORE OCEANS.

*"Combining **measurable, durable carbon dioxide removal** with marine restoration."*

FOUNDED BY

KIMBERLY GILBERT & ANDREW RAY
kim@phathom.tech

HQ: Halifax, NS

PHATHOM.TECH

pHathom Technologies is pioneering a new approach to carbon removal by **capturing carbon dioxide from coastal biomass power plants,** converting it into stable bicarbonate and storing it safely in the ocean for tens of thousands of years.

This solution makes existing bioenergy processes carbon-negative, protects marine ecosystems from acidification, and unlocks carbon credit revenues for industry.

Coastal biomass power plants can be retrofitted, meaning that the infrastructure is readily available and the solution is scalable through partnerships with biomass plant owners and boiler manufacturers.

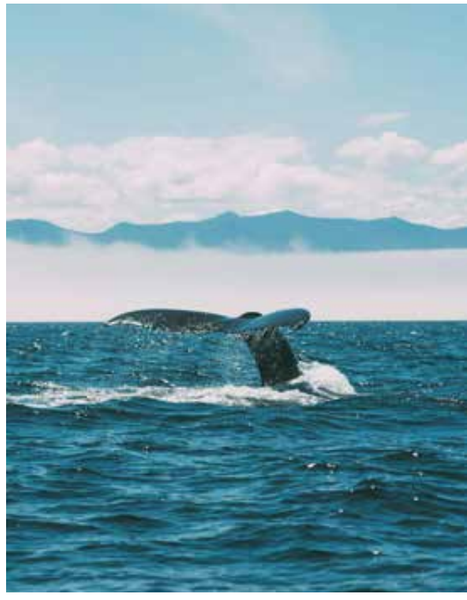
The process is low-cost compared to other carbon removal technologies and enables plant owners to generate revenues through carbon removal credits.

Traditional carbon capture and storage technologies can use chemicals, but with pHathom's process, there is no risk of gas leakage, no transportation requirements, and no need for deep-well injection.

Carbon capture and storage are **necessary to remove legacy CO_2** from the atmosphere and meet climate action targets, but widespread adoption is limited by several major challenges.

Currently, technologies face high costs, particularly upfront investment in transportation and storage infrastructure.

Ocean CDR leverages the vast storage capacity of the Earth's largest natural carbon sink and provides co-benefits for marine health and ocean restoration.



IMPACT

Environmental & Productivity Potential

→ **30-50**
Skilled Jobs per 25MW Plant Retrofit

→ **100k+**
Years of Carbon Storage

GAS. REIMAGINED.

IMPACT

Environmental & Productivity Potential

→ **<158%**

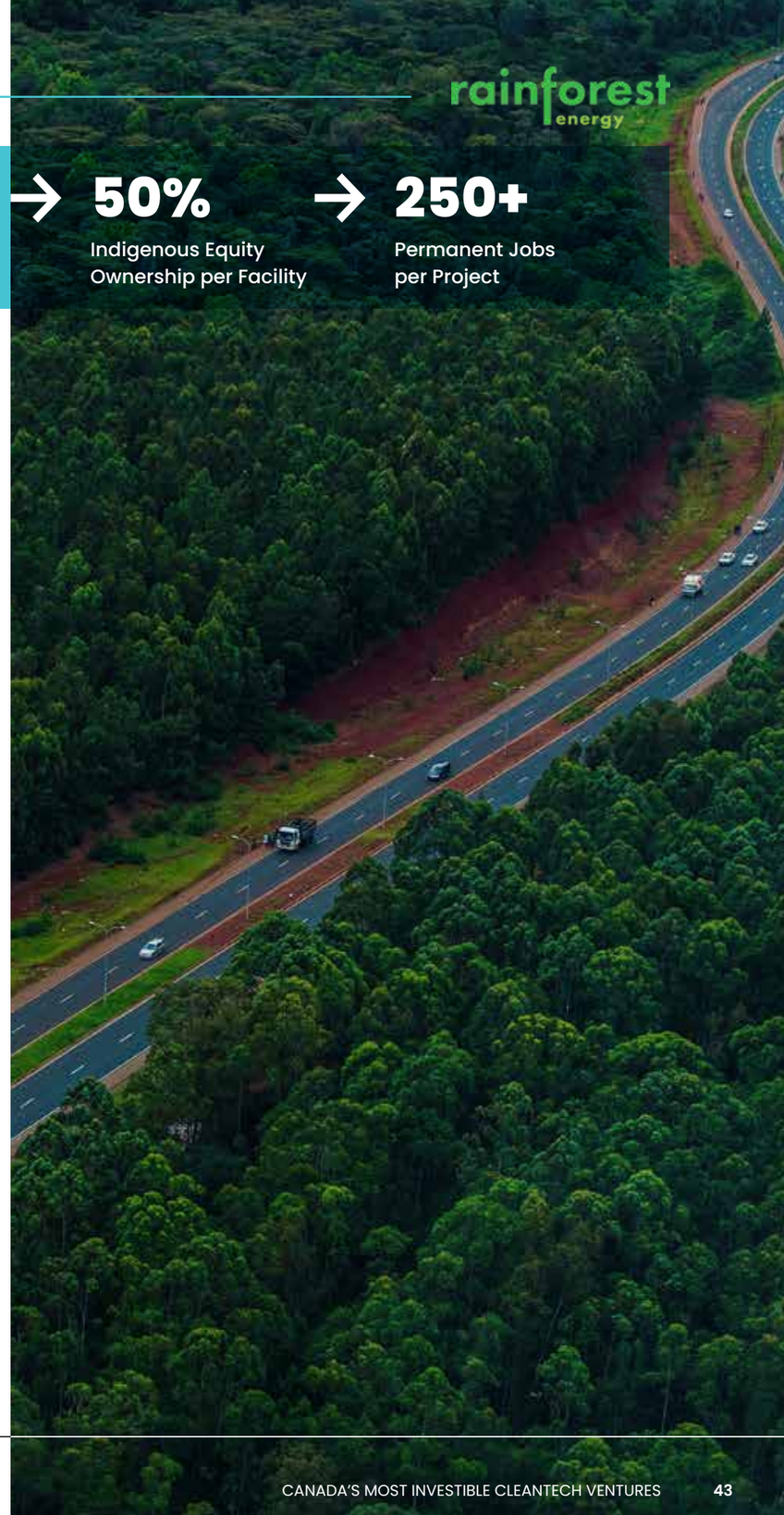
Fewer Emissions Than Traditional Fossil Fuels

→ **50%**

Indigenous Equity Ownership per Facility

→ **250+**

Permanent Jobs per Project



"We are building a new industry that redefines how clean energy and community prosperity go hand-in-hand."

FOUNDED BY

SHONDELL SABAD, JEFF ARSENYCH, & PETE LAFONTAINE
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HQ: Calgary, AB

RAINFORESTENERGY.CA

Rainforest Energy of Calgary has developed a **carbon-negative, drop-in gasoline** with a focus on community and circular economic development.

Rainforest builds their renewable fuels facilities in partnership with Indigenous and rural communities near local waste biomass feedstock sources like agricultural or forestry residues and natural gas.

In addition to producing renewable gasoline, which can be used to reduce the transportation sector's carbon footprint with no modifications to existing vehicles, the value-added co-products of propane, water, heat, and captured CO_2 can also be used in the local community, generating both returns and local economic development opportunities.

Rainforest Energy's business model not only generates strong economic returns but also delivers positive social and environmental impacts.

The transportation sector is a major contributor to Canada's greenhouse gas emissions, **responsible for 22% of the country's total.** [14]

Renewable fuels serve as a transitional energy source, offering a scalable and cost-effective alternative to traditional fossil fuels. They enable emission reductions using existing infrastructure, providing a more immediate pathway toward decarbonization.

Rainforest Energy's carbon-negative gasoline demonstrates how renewable fuels can reduce emissions without requiring changes to existing infrastructure, while also providing Indigenous equity in energy projects.

Indigenous equity in energy projects refers to Indigenous communities holding ownership stakes or financial interests in energy developments on their lands, moving beyond consultation to true partnership. Such equity helps align interests, share economic benefits, and advance economic reconciliation. [15]

BRANCHING OUT *INTO RNG*

The REN Solution™ is a proprietary gasification and methanation platform, that **processes forestry and municipal waste into RNG and the value-added co-products** of biochar and captured CO_2.

The Kelowna-based innovators have developed an efficient system that produces a greater yield of RNG compared to other production methods like anaerobic digestion.

RNG can be used as a sustainable fuel. Biochar is a solid form of carbon that can be used for multiple purposes and has potential benefits for enriching soil and reducing reliance on chemical fertilizers, creating a circular economy that fully utilizes forest resources while providing ecosystem benefits. To ensure consistent and predictable revenue, REN secures long-term offtake agreements for all three of the outputs. REN's strong partnerships with Indigenous groups and municipalities create opportunities for long-term collaboration in environmental stewardship and land use.

RNG from forestry and municipal waste is an important low-carbon alternative to traditional fossil fuels for hard-to-decarbonize sectors.

RNG is interchangeable with natural gas and can be used in existing pipeline and distribution networks without major infrastructure upgrades. REN's production method utilizes waste biomass, which would typically be left to decompose or be burnt, releasing greenhouse gases and pollutants. By utilizing this waste to produce RNG, fossil-based natural gas can be offset by a lower carbon-intensity fuel, and high-value co-products, like biochar, add an additional revenue stream.

*"A **zero-waste, high-yield** system that outperforms conventional alternatives."*

FOUNDED BY

JOHN CHRISTIE, PHILLIP VIGGIANI, NICK WIZINSKI, DUANE LOCKWOOD, & DARYL REGIER
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HQ: Kelowna, BC

RENCORP.CA

IMPACT

Environmental & Productivity Potential

Generates co-products such as biochar and captured CO_2 that can be sold to partners and support long-term carbon sequestration

The solution delivers a carbon intensity of -72 gCO_2e/MJ.

Creates over **30 direct full-time jobs** per facility, plus additional indirect jobs in logistics, maintenance, and feedstock supply

MAKING CO_2 PAY ITS OWN WAY

"Every ton of methanol produced by Secant's process ***avoids up to 2 metric tons of CO_2 emissions*** *— while producing a drop-in fuel at fossil parity."*

FOUNDED BY

JOCHEM KAMSTRA
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HQ: Montreal, QC

SECANTFUEL.COM

CEO and Foresight EIR Jochem Kamstra is monetizing captured CO_2. Montreal-based Secant Fuels has developed technology that **converts captured CO_2 into low-carbon fuel alternatives.**

The technology produces green synthetic gas, or syngas, at a cost equal to fossil-based syngas. Syngas can be used itself as a fuel or base chemical, or it can be further reacted to produce low-carbon fuels, including methanol, diesel or sustainable aviation fuel.

These can be used as drop-in replacements to decarbonize hard-to-abate sectors like shipping, aviation, and petrochemicals.

Operating as an original equipment manufacturer (OEM), Secant will sell their easy-to-install, low-cost CO_2-to-syngas technology to industrial emitters and synthetic fuel developers looking to decarbonize operations or find a use for captured CO_2.

By converting captured CO_2 into a valuable product, they reduce the costs of carbon capture and enable the scaling of e-fuel production.

Sectors such as **shipping, aviation, steel, cement, and chemicals are called hard-to-abate** because decarbonization is technologically and economically difficult.

These industries are difficult to electrify as their processes typically rely on fossil fuels for high temperatures or chemical reactions (e.g., petrochemicals), or they use high-energy-density fuels that are difficult to replace with available alternatives (e.g., aviation and shipping). The high cost of carbon capture, utilization, and storage (CCUS) has been one of the largest barriers to its widespread deployment to support hard-to-abate sectors in decarbonizing.

CCU technologies in particular, like those that produce e-fuel, have historically had prohibitively high costs, and often products are said to come with a "green premium," making them non-competitive with fossil-based alternatives.

Making carbon capture profitable and producing drop-in e-fuels at cost parity with conventional fuels is a significant enabler of these sectors to decarbonize, both through scaling of e-fuels to be used as fossil fuel replacements and through increasing the financial feasibility of carbon capture.

IMPACT

Environmental & Productivity Potential

Secant's methanol shows an 89-93% reduction in carbon footprint compared to fossil-based methanol.

E-fuels or synthetic fuels like the ones produced by Secant burn cleaner than fossil fuels, emitting fewer pollutants.

SUSTAERO
GREEN FUELS FOR BLUE SKIES

CANADIAN WOOD ***FUELS*** CLEAN AIR TRAVEL

*"Canada has **900 former mill sites,** many with infrastructure in place."*

SUSTAERO is building Canada's first **large-scale sustainable aviation fuel** (SAF) production capacity, aiming for over one billion litres annually.

The Burnaby, BC-based company is uniquely positioned to achieve this by leveraging Canada's extensive pulp and paper infrastructure, along with a fully scaled, TRL-9 wood-to-SAF technology.

SUSTAERO's SAF is a drop-in replacement for conventional jet fuel, produced entirely from sustainably harvested Canadian wood.

The company's strategy involves installing and operating its technology on former mill sites, beginning in British Columbia, to capitalize on existing access to wood, electricity, and water.

By building on former mills, SUSTAERO can also support the economic revitalization of communities impacted by the decline of the pulp and paper industry.

Sustainable Aviation Fuel has the potential to reduce lifecycle CO_2 emissions by up to 80% compared to conventional jet fuel. [16]

As the global aviation sector faces increasing pressure to meet net-zero greenhouse gas targets, SAF offers a practical and scalable solution to decarbonize air travel while supporting Canada's climate commitments.

FOUNDED BY

KEITH GILLARD
& JOEY O'BRIEN
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HQ: Burnaby, BC

SUSTAERO.CA

IMPACT

Environmental &
Productivity Potential

Revitalizes rural communities experiencing job and economic losses from pulp and paper decline.

Approximately **90 local workers** employed per plant.

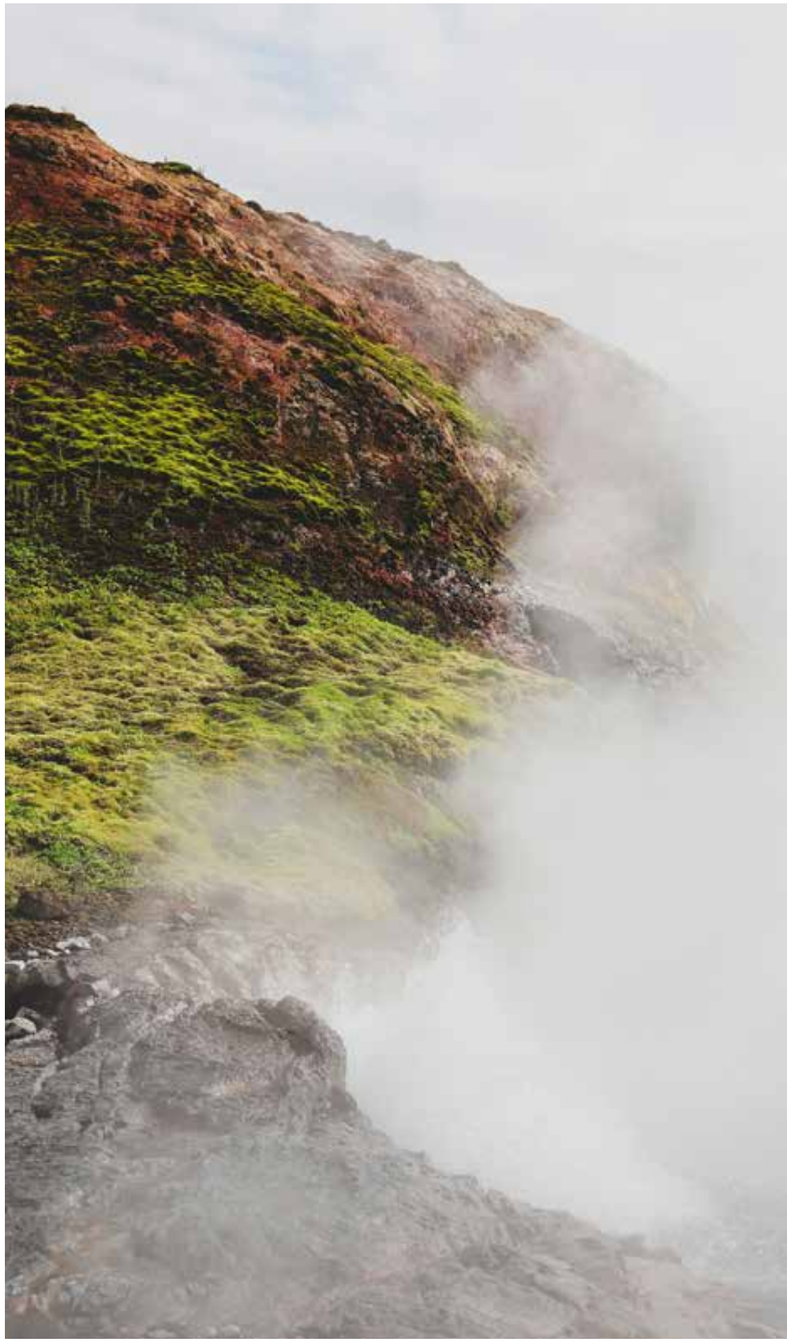
IMPACT

Environmental & Productivity Potential

Enables geothermal operators, oil & gas companies, and utilities to **reduce drilling costs by up to 50%.**

The combination of **lower costs and substantially higher energy output** ensures a rapid return on investment and high margins.

Creates **new opportunities for oil & gas professionals** to transition their expertise and upskill into geothermal.



UNDERGROUND ENERGY GOES MAINSTREAM

Although geothermal energy holds vast potential, more than 98% remains untapped.

Calgary-based TerraFerno is developing optimization systems that, when installed deep underground, can **boost energy recovery by 80% to over 500%.**

By introducing flow control mechanisms—previously unavailable and economically unviable—TerraFerno overcomes a core challenge of conventional geothermal projects: high costs coupled with limited energy yield.

The result is a more efficient and commercially viable path to scaling geothermal power.

Canada's geothermal energy resources offer **significant potential as a source of clean power,** with binary cycle power plants serving as the primary technology for energy generation.

Geothermal prospects are widespread across the country, though much of Canada's land requires further exploration to fully understand its potential.

FOUNDED BY

IAIN HOLLAN
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HQ: Calgary, AB

TERRAFERNO.COM

*"Working to **unlock the other 98%** of global geothermal potential to deliver clean, baseload energy across the planet."*

variablegrid

EV POWER IN *ANY* BUILDING

***"50% of buildings** cannot support EV charging without electrical upgrades."*

North Vancouver's Variablegrid has developed a patented **adaptive power platform** that eliminates the primary barrier to widespread EV charging: the high cost and complexity of electrical upgrades.

The system monitors and reallocates a building's existing electrical capacity in real time, enabling homes, multi-unit buildings, and fleets to install EV chargers without requiring panel upgrades or service changes.

This solution makes reliable, fast charging accessible to over half of all buildings and is designed to scale beyond EV charging to support future electrification needs like heat pumps and solar.

Approximately 50% of buildings in Canada, especially older homes and multi-unit residential buildings, **lack the electrical capacity to support Level 2 electric vehicle chargers** without costly upgrades.

These upgrades can range from $12,000 to $15,000 per building, depending on the complexity of the electrical system. [17] Variablegrid offers inexpensive access to EV charging.

IMPACT

Environmental & Productivity Potential

Adaptive power management avoids emissions associated with manufacturing and installing new equipment for electrical upgrades.

By dynamically managing energy demand and aligning usage with low-carbon grid conditions, the platform helps operators reduce energy-related emissions.

The system also **significantly cuts energy costs** for operators.

FOUNDED BY

DAN LAFFERTY & GREG MERRICK
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HQ: North Vancouver, BC

VARIABLEGRID.COM

IMPACT

→ 50%
Less Electricity Consumption

→ 5M
Litres of Water Saved Annually

→ 30
Jobs per 5MW Development

COOLY

CUTTING AI EMISSIONS

There is growing demand for AI data centres which often have a large environmental footprint, requiring large amounts of energy and water to operate.

Wafr Technologies has developed **a solution that combines passive cooling innovation with clean energy integration.**

For every 1MW of electricity consumed by the IT equipment doing computing work in a data centre, Wafr Technologies reduces the amount of heat that needs to be removed by 80% through a passive thermal management system.

This also reduces the electricity consumption that is required to cool the facility, reducing the total energy consumption by around 40-50%. Based on Canada's average grid intensity, this could represent savings of around 2,628 tonnes CO_2e/year and approximately 5,000,000 litres of water per year. The solution can be integrated into new data centres or retrofitted.

AI data centres consume large amounts of electricity and water to operate.

A report from the Canadian Climate Institute indicates that while a typical data center might require 5 to 10 MW of power, an AI data center can exceed demands of 100 MW, equivalent to the annual consumption of about 350,000 EVs. [10]

Ensuring the long-term viability of AI needs to be met with solutions that ensure operational sustainability.

FOUNDED BY

BIKRAMJEET SINGH
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HQ: Vancouver, BC

WAFRAI.COM

*"A breakthrough passive cooling system that **significantly reduces energy consumption**—without relying on water, compressors, or complex infrastructure."*

ADAPTATION

Building Resilience

Adaptation is the essential complement to mitigation—it's how we proactively adjust to an already changing climate to protect people, infrastructure, and ecosystems.

The intensifying effects of the climate crisis, from extreme heat and drought to catastrophic flooding, are already having wide-ranging economic and environmental impacts. This reality is placing immense strain on food systems, natural resources, and critical infrastructure.

The ventures focused on adaptation are developing resilience solutions that shore up our defences against these threats. Adaptation isn't optional; it's an immediate necessity to ensure the long-term security of our global economies and the safety of our most vulnerable communities.

Old Tires, Stronger Cities.

*"6x faster, 5x cheaper, and 2x stronger resilience to engineers, contractors, and property owners—at **80% fewer emissions** than traditional FRP or shotcrete systems."*

Atlantis Fiber has created NexGuard, an **innovative concrete strengthening agent** designed to enhance aging buildings and infrastructure.

By upcycling end-of-life tire waste into a high-performance fiber composite, the company's technology offers engineers and contractors a simple, cost-effective, and code-compliant alternative to traditional and more complex retrofit systems.

This innovative solution enables the revitalization of structures without the need for demolition, thereby extending their service life and meeting modern seismic and durability standards.

Building infrastructure resilience is a massive Canadian and global need.

The 2019 Canadian Infrastructure Report Card noted the significant amount of aging public infrastructure in Canada, estimating that almost 40% of roads and bridges nationwide are in fair, poor, or very poor condition. [18] In addition, accelerating retrofits is one of three priorities in the Canada Green Buildings Strategy to achieve both energy efficiency and climate resiliency in Canada's buildings. [19]

The sector is also under increasing pressure to reduce emissions and embrace circular economy solutions, indicating growing market potential for green building materials. The global green building materials market is projected to reach $708.9 billion by 2030. [20]

Transforming tire waste into building resilience is an innovative example of the circular economy's high potential.

FOUNDED BY

PATRICK MCCONNELL & HERB LARSEN
pat@atlantisfiber.com

HQ: Vancouver, BC

ATLANTISFIBER.COM

IMPACT

Environmental & Productivity Potential

→ 40lbs
Repurposed Tire Fiber per Cubic Metre

→ 500kg
CO_2e Avoided per Cubic Metre

→ 80%
Lower Carbon Footprint Than Conventional Systems

THE 5° DIFFERENCE A SIMPLE SPRAY CAN MAKE.

*"**More than energy savings**—it enables thermal resilience, public health benefits, and climate equity at scale."*

Montreal-based ChillSkyn has created PolyFrost, a spray-on coating that reflects sunlight and passively cools surfaces.

In areas exposed to the sun and therefore absorbing heat, PolyFrost keeps surfaces up to 5°C cooler than the surrounding air.

Led by CEO & Co-founder Patrick Racine, the company is initially focusing on refrigerated transportation, where the coating's ability to reduce heat leads to a significant decrease in diesel consumption and a compelling return on investment for customers. With versatile applications, ChillSkyn will look to scale in adjacent sectors like battery energy storage, telecom enclosures, emergency shelters, and other infrastructure.

Reflective cooling is an efficient and versatile tool for climate resilience, especially for the urban heat island (UHI) effect.

This phenomenon occurs when urban areas with large quantities of built surfaces, like roofs and pavements, are much warmer than rural areas. UHIs can exacerbate the impacts of extreme heat due to climate change, such as health risks, infrastructure damage, and the cost of cooling.

Reflective cooling lowers ambient temperatures affordably and effectively, and can be an equitable solution to cooling for communities that lack reliable electricity or cannot afford capital-intensive cooling systems.

FOUNDED BY

PATRICK RACINE
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HQ: Montreal, QC

CHILLSKYN.COM

IMPACT
Environmental & Productivity Potential

→ **≥17%**
Reduced Diesel Consumption

→ **23 tCO_2e**
Emissions Avoided per Trailer

DENOVA

IMPACT

Environmental & Productivity Potential

100x
Less Land Required

90%
Less Fresh Water Needed

2.5kg
Less CO_2e per kg Product

THE WHOLE MICROBIAL MEAL DEAL

*"Expansion of **aquaculture is vital** to increasing food production and ocean conservation."*

DeNova offers a novel, **sustainable microbial protein** called Psomi™ to the aquafeed market, addressing the instability and environmental limitations of traditional protein sources like fishmeal and soy.

Through a methanol-fed fermentation process, the Dartmouth, Nova Scotia-based company produces a high-performance nutritional ingredient that provides the consistent supply and amino acid profile demanded by producers. This industrial-scale platform, which is land-light and climate-agnostic, enables secure and scalable protein production without impacting fragile ocean ecosystems or relying on extractive agriculture.

DeNova is uniquely positioned to rapidly scale in the growing aquafeed market and potentially expand into pet or livestock sectors.

The global aquafeed market was estimated to be worth USD $67.5 billion in 2024 and is projected to reach USD $112.3 billion by 2033. [21]

This growth is driven by increasing seafood consumption and the need for sustainable feed alternatives. Traditional protein sources like fishmeal and soy face environmental and supply challenges, making DeNova's Psomi™ microbial protein a timely and scalable solution for the aquaculture industry.

FOUNDED BY

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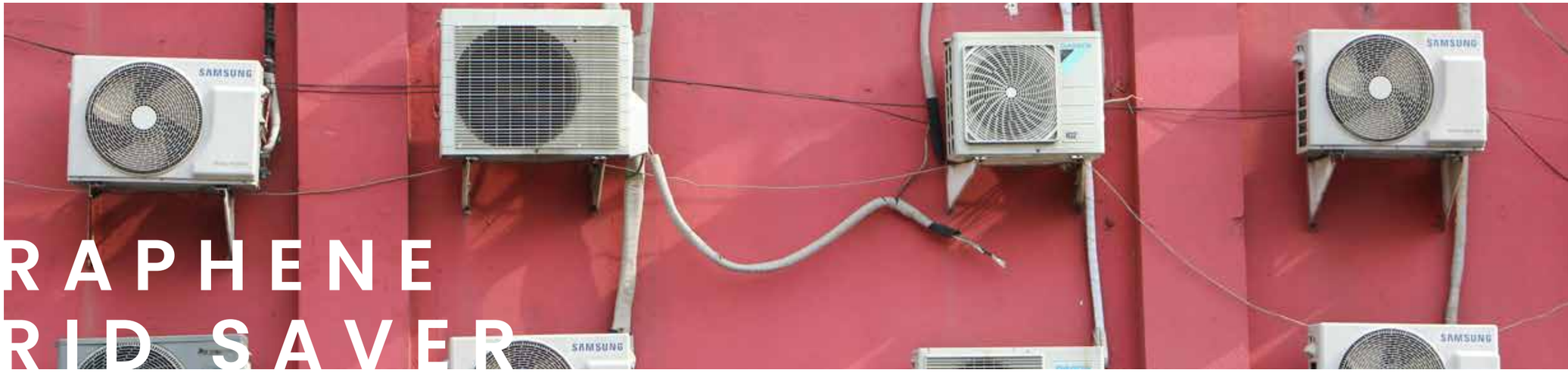
HQ: Dartmouth, NS

DENOVA.CA

EVERCLOAK

THE GRAPHENE GRID SAVER



***"Over 50% of cooling energy is wasted** on humidity removal. Inefficient building cooling systems are costly and unsustainable."*

FOUNDED BY

EVELYN ALLEN & MICHAEL POPE
evelyn@evercloak.com

HQ: Kitchener, ON

EVERCLOAK.COM

Founded by Evelyn Allen and Michael Pope out of Kitchener, Ontario, Evercloak manufactures **refrigerant-free membrane dehumidification system components** that can seamlessly integrate into air handling units.

The technology is a graphene-oxide membrane that removes humidity without changing air temperature. It slashes energy consumption by 50% by eliminating the need for defrost cycles and improving efficiency in low-temperature conditions.

This reduction in electricity demand can alleviate strain on grids, lower CO_2 emissions, and bring efficiency to a market where dehumidification alone accounts for over half of a building's cooling energy use. [22]

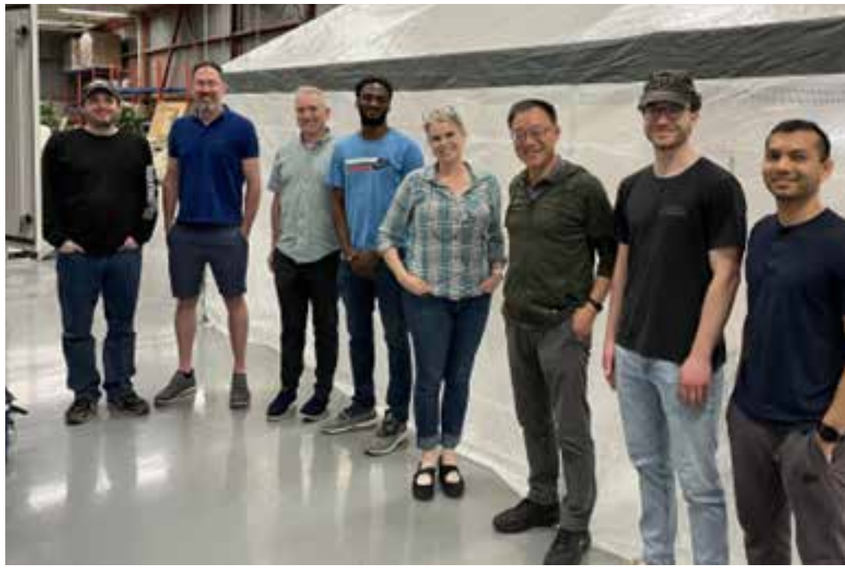
The impacts of heat on our national productivity are staggering.

Heat-related productivity losses are projected to reach up to $15 billion per year by the end of the century. [23] Impacts will be especially felt in sectors that take place either outdoors or in poorly cooled spaces like manufacturing, transportation, and construction.

As global temperatures rise and heatwaves become more frequent, the demand for building cooling is skyrocketing, more than tripling energy demand by 2050. [24]

This surge in cooling energy demand will be necessary for human health and productivity, but it will create a massive strain on electricity grids, particularly during peak demand.

According to the IEA, efficient air conditioning has the potential to reduce global cooling energy demand by 45%. [24]



IMPACT

Environmental & Productivity Potential

→ **>50%**
Reduced Energy Consumption

→ **>45%**
Total Lifecycle Cost Savings

IMPACT → **1-2hr** → **~20%**

Environmental & Productivity Potential

Response Time Reduces Emissions & Damage

Reduction in Burned Acreage

800 LB WILDFIRE FIGHTING FORCE

*“**Faster response times** and **greater safety** for governments, emergency responders, and industries.”*

FOUNDED BY

ALEX DESLAURIERS, DAVID THANH, & MELANIE BITNER
alexd@fireswarmsolutions.com

HQ: Squamish, BC

FIRESWARMSOLUTIONS.COM

FireSwarm Solutions supports wildfire management and prevention by using **ultra-heavy-lift drones, AI, and data analytics** to offer a full-service emergency response solution.

This can support early identification of fires and optimize firefighting and suppression activities. FireSwarm has an unmatched 800lb capacity, autonomous coordination, real-time intelligence, and seamless integration with existing wildfire response teams.

The solution aims to achieve a 20-50% decrease in the time required to action early-stage wildfires in remote and wildland-urban interface areas, contributing to reduced resource needs and higher containment success rates, aiming to reduce the burn acreage by 20%.

A pilot has been completed with the City of Kelowna and the Kelowna Fire Department.

Wildfires are a growing issue across the country.

The 2023 wildfire season was the most destructive on record, forcing the evacuation of over 230,000 Canadians.

Nearly 5,500 fires burned 17.3 million hectares of land, with environmental and economic impacts, making wildfire response solutions increasingly critical. [25]

IMPACT

Environmental & Productivity Potential

Severe flood damage often results in complete home losses, which can **generate tons of debris** that is often contaminated and unsalvageable.

Average annual insured losses over the past 10 years have **increased by almost 400%** in Canada when compared to the average of the previous 30 years. [26]

The average cost per weather-related disaster has **increased by 1250%** compared to the 1970s. [27]

DATA TO **DRY UP** INSURANCE RISK

Founded by Hachem Agili, Quebec-based Geosapiens provides insurers with a **highly accurate flood risk modelling solution.**

By using Geosapiens' technology, insurance companies can more precisely assess flood exposure, avoiding the financial pitfalls of undercharging for high-risk properties and overcharging for low-risk ones.

This not only makes their insurance products more profitable but also helps them mitigate financial losses from increasingly frequent flood events, creating a significant economic advantage in a market where climate-related risks are rapidly escalating. This also ensures new development projects are directed toward insurable areas, avoiding construction in high-risk flood zones, and promoting more sustainable urban development.

As global temperatures rise, **extreme weather events like floods are becoming more frequent and severe,** creating a significant challenge for the insurance industry.

Traditional flood risk models, which rely on historical data, are often inadequate for predicting future risks influenced by a changing climate.

This can lead to mispricing of insurance premiums, where companies underprice policies for properties with escalating risks and overprice for those with stable or low risks.

This operational problem can cause financial losses for insurers, make flood insurance unaffordable for many homeowners, and leave a large portion of the population vulnerable and uninsured.

> *"Geosapiens' solutions [can] help **minimize economic and emotional stress** for millions."*

FOUNDED BY

HACHEM AGILI
hachem.agili@geosapiens.ca

HQ: Quebec, QC

GEOSAPIENS.COM

A NET ZERO ANSWER TO THE HOUSING CRISIS

*"40% less embodied carbon emissions than leading incumbents—without compromising on **cost, quality, or performance.**"*

FOUNDED BY

LOGAN ASHLEY
logan@goodwayhomes.com

HQ: Revelstoke, BC

GOODWAYHOMES.COM

The construction industry is a major contributor to global greenhouse gas emissions and there is a growing housing shortage in Canada.

Good Way Homes **designs, manufactures, and constructs energy-efficient homes** that are resilient to severe weather but also reduce environmental impact by optimizing resource use and operational efficiency.

The benefits of modular construction, where a large part is constructed off-site, include faster construction, reduced labour costs, standardized components, and quality control.

The Good Way Living Corporation works directly with customers, as well as real estate developers and investment firms to form strategic partnerships.Materials with low embodied carbon such as wood framing and wood fibre insulation are used in the construction.

As an Indigenous-founded company, the seven-generation mindset is at the core of the business which emphasizes long-term thinking and community care.

Canada is in the midst of a housing crisis. The Canada Mortgage and Housing Corporation (CMHC) estimates that an additional 3.5 million housing units will be needed by 2030. [28]

Alongside the climate crisis, the construction industry is facing challenges in providing low-carbon, affordable housing whilst minimizing negative environmental impacts.

IMPACT

Environmental & Productivity Potential

Reduced construction waste / energy efficient homes

Reduced transportation emissions by locally sourcing materials

Creating skilled jobs in construction and sustainable development

IMPACT
Environmental & Productivity Potential

→ **6M**
Litres of Water Saved

→ **1,200t**
Growing Media (Soil) Conserved Annually

→ **67%**
Resource Cost Reduction

→ **7%**
Profit Margin Boost for Growers

AI *SORTS OUT* HORTICULTURE WASTE

FOUNDED BY

MALLORY FLYNN &
AMANDA ACKROYD
mallory@insporos.io

HQ: Vancouver, BC

INSPOROS.IO

Vancouver-based Insporos' **proprietary hardware and AI platform provides non-destructive seed sorting and seed analysis** as a service to nurseries.

The technology analyzes each seed to identify and remove diseased or defective ones before they are planted.

This process offers a level of predictability previously unavailable on the market, as it enables nurseries to avoid the substantial costs and resource waste associated with over-planting.

Insporos is revolutionizing the way we produce our food by providing propagators with insights that are currently unavailable, resulting in significant cost reductions and a more stable supply chain.

Canada's horticulture sector is a vital component of the agricultural industry.

The greenhouse, nursery, field-grown cut flower, and sod industries collectively generated $6.0 billion in sales in 2024, up from $5.5 billion in 2023. At the same time, the total greenhouse area grew 4.0% over the same period, reaching 33.3 million square metres. [29]

*"Up to **50%** of greenhouse plants don't reach maturity."*

By preventing the planting of non-viable seeds, inefficiencies in seed germination and planting that result in significant resource waste, including water and growing media, as well as increased greenhouse gas emissions are avoided.

GETTING TO THE **ROOT** OF CROP HEALTH

Farming and agriculture are facing increasing pressures due to climate change.

Excessive use of fertilizers can contribute to excess nitrogen, which results in nitrous oxide and nutrient runoff into waterways.

Picketa Systems has developed a **Leaf Evaluated-Nutrient System (LENS™) crop nutrient assessment,** bringing fertilizer savings to agriculturalists at 50% less cost and emissions than lab testing.

Picketa Systems offers trials that translate into an annual software and hardware subscription, whilst training local scouts and agronomists to scale usage. The technology contributes to reduced fertilizer use through precise, in-field nutrient analysis, which in turn reduces greenhouse gas emissions.

Excessive use of fertilizers can contribute to excess nitrogen, which results in nitrous oxide and nutrient runoff into waterways.

Canadian agriculturalists face many challenges related to crop production due to environmental and economic pressures. Increased extreme weather events, including droughts and floods, can damage crops and reduce yields. Excessive use of nitrogen fertilizers is also a major source of greenhouse gas emissions and contributes to eutrophication of water resources.

FOUNDED BY

XAVIER HÉBERT-COUTURIER, MAXIME DUMONT, ZACHARY ANDERSEN, & DOMINIC LEVESQUE
x@picketa.com

HQ: Fredricton, NB

PICKETA.COM

*“**A proven, urgent need** in a $240 billion fertilizer market.”*

IMPACT

Environmental & Productivity Potential

Reduces fertilizer use by up to 30%, which leads to lower greenhouse gas emissions and fertilizer runoff.

Reduces transportation-related emissions by replacing lab shipping for nutrient testing with on-site scanning.

LENS helps agronomists and farmers **increase crop return on investment** and improves decision-making which can also reduce input costs by up to 30%.

SCALING UP FOOD SECURITY

QuantoTech utilizes **innovative equipment and manufacturing processes alongside a decentralized farming model** with replicable, in-building, 'hub and spoke' farms.

These farms offer a solution that improves food security and reduces reliance on imports. The reduced need for space means that the solution is replicable and scalable. Combined with a novel business model that removes the middleman, the solution reduces food waste and maximizes profits.

Food security is a growing area of concern in Canada, particularly with the fresh produce market relying heavily on imports.

Vertical farming offers a solution to increase local food production and enhance food sovereignty.

Vertical farms have the benefit of year-round production and reduced carbon emissions associated with food transportation.

"We are one of only a handful of vertical farms that have ***reached operational breakeven."***

IMPACT

Environmental & Productivity Potential

Reducing carbon emissions associated with importing leafy greens and herbs from California, where over 90% of Canada's consumed lettuce comes from.

Creating many small and medium sized farms that contribute to local communities and employment.

FOUNDED BY

ALYCIA VAN DER GRACHT
alycia.vandergracht@quantotechltd.com

HQ: Vancouver, BC

QUANTOTECHLTD.COM

IMPACT → **99.996%** → **0**

Environmental & Productivity Potential

Molecular Destruction of PFAs

Air, Water, Byproduct Toxins Produced

PFAS ARE NOT FOREVER ANYMORE

*"By permanently destroying PFAS in water and waste streams, FRG™ **reduces long-term exposure risks** for communities."*

FOUNDED BY

GORDON FRASER
gfraser@responsible.energy

HQ: Maitland, ON

REINC.CO

Responsible Energy has developed a **modular solution that permanently destroys harmful "forever chemicals"** and firefighting foam to 99.99% in under 5 seconds without creating dangerous byproducts.

Founded and co-invented by Gordon Fraser, the solution helps governments, businesses, and utility companies comply with environmental regulations and safely dispose of these toxic materials at a lower cost and with fewer emissions than traditional methods like incineration.

Instead of building and owning every facility, REinc plans to license its technology to partners — environmental services companies — who will operate the modular systems under a franchise model, allowing REinc to grow without the expense of building everything themselves.

Per- and polyfluoroalkyl substances (PFAS) are a class of chemicals that have been used since the 1940s in consumer and industrial products.

These substances earned the nickname "forever chemicals" because they do not break down naturally in the environment. This means they have leached into our air, soil, and water, and have been found to accumulate in the human body over time.

Studies have linked long-term exposure to PFAS with a range of serious health issues, including liver damage, thyroid disease, and various cancers. Technologies that assess, remove, and destroy PFAS are therefore growing in necessity and are estimated to be the fastest-growing environmental market. [30]

SenseNet

IMPACT

Environmental & Productivity Potential

Enables fire **detection within 36 seconds compared to hours** with traditional systems, preventing fires from escalating and translating into carbon emissions savings.

Protecting forest and wildland habitat and helping to **preserve biodiversity and prevent soil erosion .**

Safeguarding water and air quality by minimizing impacts from ash runoff and smoke.

Provides **greater information to first responders** and supports the protection of local communities.

FOUNDED BY

HAMED NOORI
hamed@sensenet.ca

HQ: North Vancouver, BC

SENSENET.CA

36 SECOND DETECTION TIME HALTS MEGA FIRES

Wildfires are a growing concern in Canada, contributing to rising carbon emissions and incurring severe economic costs that include suppression efforts, asset loss, business disruption and the displacement of communities.

Current solutions lack real time detection and focus on large heat signals or smoke.

SenseNet provides an **integrated solution, combining sensors, thermal cameras, satellite data and environmental inputs into a single AI-powered platform to detect fire** in the smoldering phase and provide instant data.

By integrating diverse data sources including a proprietary sensor network, cameras, satellite imagery, historical weather and infrastructure maps, this solution can improve response times and reduce the impact of wildfires.

The solution supports industries that are at risk from wildfires such as infrastructure and development companies and governments.

In 2023, Canada experienced its worst wildfire season on record, with over 15 million hectares burned which is an area larger than the size of Greece. [31]

These fires released 1.5 billion tonnes of carbon dioxide and cost an estimated $1.4 billion annually in wildfire suppression efforts in Canada.

*"In Vernon [...] we **detected and mitigated 217 wildfire incidents** at an average detection time of just 3 minutes."*

THE FUTURE OF RE-FORESTATION TAKES FLIGHT

"Our work also improves ***water security, biodiversity, and cultural connection*** *to land."*

TreeTrack offers a **faster and cheaper alternative for large-scale reforestation** to traditional hand-planting by using drones to deploy seedpods.

The technology offers a 55% establishment rate, which is 10 times higher than conventional methods and at a cost 40% lower than manual or other aerial planting. TreeTrack can be used to support governments, NGOs and industry to meet sustainability and carbon offsetting goals.

This approach reduces emissions from nursery operations, transportation and fossil fuel-intensive planting processes by utilizing more compact logistics and efficient aerial deployment.

Beyond carbon benefits, TreeTrack improves soil health, water quality, and biodiversity through reforestation. The Seedpods deployed incorporate organic ingredients and enable reforestation in hard-to-access areas.

IMPACT

Environmental & Productivity Potential

→ **274**

Tonnes of CO_2e Reduced per 100 Hectares

→ **99.7%**

Emissions Reduction Compared to Hand Planting

TreeTrack has completed several successful pilots demonstrating the efficacy of the technology.

As forests are under growing pressure from harvesting, wildfires, and climate change, **reforestation solutions provide a promising opportunity.**

Restoring these vital ecosystems is crucial for supporting biodiversity, enhancing air and water quality, and sequestering carbon to combat climate change.

FOUNDED BY

AMIR SOLEIMANI & SAM SARABI
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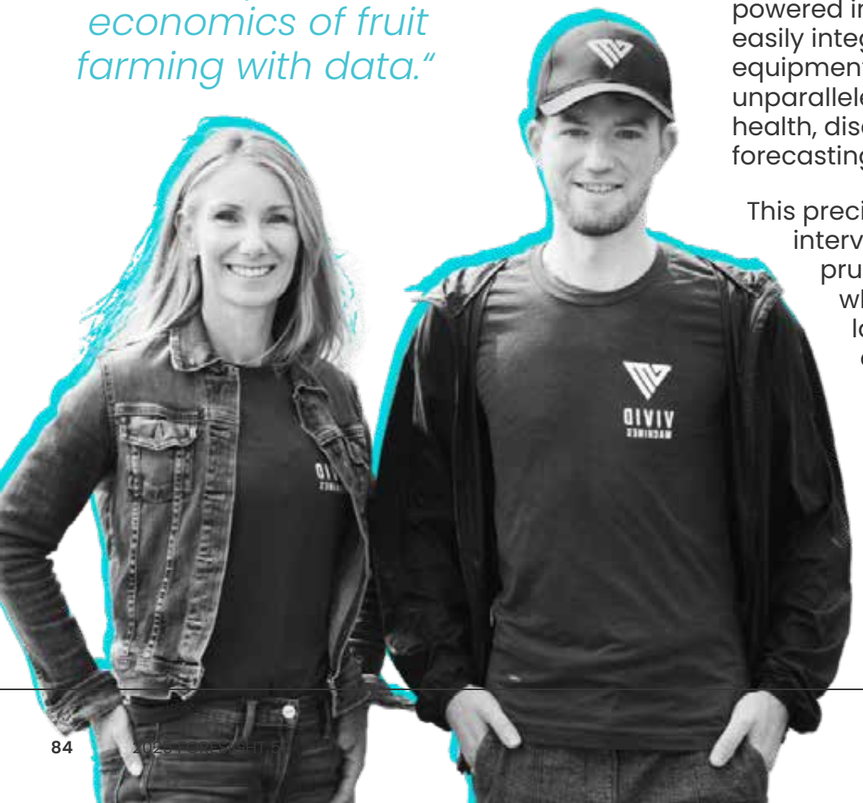
HQ: Port Coquitlam, BC

TREETRACK.CA

vivid machines.

AI POWERED PRECISION AGRICULTURE

*"There is a **massive opportunity** to improve the economics of fruit farming with data."*



Vivid Machines is solving a critical operational problem for growers by providing **precise, real-time crop data.**

The Toronto-based venture's AI-powered imaging technology easily integrates with existing farm equipment, providing growers with unparalleled insights into plant health, disease detection, and yield forecasting with up to 90% accuracy.

This precision allows for optimized interventions like targeted pruning and fertilization, which significantly reduce labour costs and boost crop quality and quantity.

Precision agriculture is a key area of opportunity in Canada's agri-food technology value chain. [32]

These technologies not only offer resource and yield optimization opportunities but also play an important role in risk management for the sector.

Climate change is creating unpredictable conditions.

Precision agtech can support early detection of crop stresses, diseases, water risks, and pests. Efficiencies provided by these technologies can also help alleviate problems with labour shortages in the agri-food sector.

FOUNDED BY

JENNY LEMIEUX &
JONATHAN BINAS
jenny@vivid-machines.com

HQ: Toronto, ON

VIVID-MACHINES.COM

IMPACT

Environmental & Productivity Potential

→ **~98KG CO_2e**
Saved per Acre of Apples

→ **14%**
Less Fruit Waste

→ **17%**
Less Chemicals Spray Needed

IMPACT → **20%** → **5km²**

Environmental & Productivity Potential

Improved Response on Fires Growing 10% in Radius Daily

Reduced Burn Area in Fires w/ 17km² Burn Area

AI REAL-TIME DATA SAVES FORESTS & CREWS

*"Even small improvements in suppression timing and effectiveness **yield large reductions** in burn area."*

FOUNDED BY

COLIN O'NEIL, KAAN WILLIAMS, WALI SHAYAAN & PAUL ALLARD
colin@voxelis.ai

HQ: Richmond, BC

VOXELIS.AI

Billions of dollars are spent each year on helicopter flights for wildfire management, but an opportunity is being missed by not leveraging real-time data.

Voxelis has developed a solution that **enables helicopters to be retrofitted with Voxvision, a hardware that collects data from flights** from multiple sensors and a thermal camera.

This is supported by Voxelis Cloud, a geospatial software-as-a-service (SaaS) platform.

The system delivers real-time environmental data to fire agencies and helicopter operators supporting them with greater knowledge of the situation at a drastically lower cost and crew burden than existing aerial data solutions. This helps crews respond faster and more intelligently, which can reduce the fire size and associated carbon emissions.

Further benefits can be achieved through enabling fewer and smarter flights, improving flight paths, and supporting earlier response.

In 2023, wildfires burned approximately 119,000 km² of forests globally.

Estimates highlight that global wildfires generated approximately 2,170 Mt of carbon emissions in 2023, of which Canadian wildfires accounted for 22%. [33]

Because wildfires expand in a radial pattern, even small improvements in suppression timing and effectiveness yield large reductions in burn area. Since the 1970s, the cost of wildfire protection has risen by about $150 million per decade, exceeding $1 billion for six of the last 10 years. [34]

"Today, over 2 billion people still lack access to safe water. [35] *Traditional solutions **often miss invisible contaminants** like lead, DDT, and cholera, and are slow, expensive, or energy-intensive."*

NO POWER CHLORINE POLLUTANTS

Toronto-based Xatoms is using **proprietary AI and quantum chemistry software to discover new photocatalysts,** or materials activated by light, **to purify water.**

These materials, which come in powder form and can be applied as a coating to different surfaces, are capable of targeting and eliminating a wide range of dangerous pollutants like heavy metals, chemicals, viruses, and bacteria. These pollutants are often missed by traditional water treatment solutions like chlorine and UV.

They are activated by any light source, including sunlight, in just 30 minutes and without electricity or added chemicals.

The company's 8 patent-pending photocatalysts are also more affordable and efficient compared to traditional water purification methods.

1 in 4 people globally still lack access to safe drinking water, according to the WHO.

In Canada, many Indigenous communities face a crisis due to a lack of safe drinking water, with 35 long-term drinking water advisories currently in effect.

As one of the UN's Sustainable Development Goals, access to clean water and sanitation is a human right.

FOUNDED BY

DIANA VIRGOVICOVA, KEREM TOPAL ISMAIL OGLOU, & SHIRLEY ZHONG
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HQ: Toronto, ON

XATOMS.COM

IMPACT

Environmental & Productivity Potential

→ **72%**
Cost Reduction

→ **4x**
Faster than Leading Solutions

→ **0**
Need for Chlorine, Electricity, or Fossil Fuels

CIRCULARITY

Create Value, Not Waste

Achieving climate resilience demands a paradigm shift in how we manage our planet's finite resources. To effectively drive both mitigation and adaptation, we need to adopt circular economy principles to consciously and effectively use available resources and maximize the utility of existing materials.

By prioritizing the reuse, remanufacturing, and longevity of these resources, we significantly reduce the need for virgin resource extraction and energy-intensive manufacturing processes. This is how we decouple economic growth from environmental degradation.

Circular economy ventures are reshaping the way we think about waste and materials, providing innovative solutions to resource scarcity, pollution, and climate change. These companies are transforming waste products into valuable feedstocks and proving that continued economic prosperity doesn't have to mean adding new planetary impacts.

Li CLEANER CHEAPER FASTER

*"Each unit of lithium produced [helps] to eliminate **55 kg of CO_2 per EV."***

Chemshift Technologies of Calgary is unlocking new value from low-purity lithium byproducts with its innovative **refining technology, which converts these materials into battery-grade lithium for direct use in EV batteries.**

Built on proven science, the solution recovers more lithium, shortens qualification timelines, and reduces overall production costs.

The process achieves battery-grade output at half the levelized cost of incumbents, with significantly lower environmental impact.

By partnering with lithium producers, Chemshift delivers reliable, cost-effective lithium carbonate to cathode active material manufacturers, original equipment manufacturers, and commodities trading houses.

Canada's lithium production is growing significantly, but the country remains a net importer of battery-grade lithium due to a historical lack of local refining capacity.

This reliance on imports exposes the country to supply chain vulnerabilities, particularly as global demand for lithium continues to grow with the demand for EVs. To address this, Canada is now actively building out its domestic refining industry.

Chemshift's innovative refining technology is a critical part of converting low-purity lithium byproducts into battery-grade lithium locally.

This solution has the capability to strengthen Canada's position in the global supply chain and securing a domestic supply for its growing electric vehicle market.

FOUNDED BY

DREW MOXON
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HQ: Calgary, AB

CHEMSHIFT.COM

IMPACT

Environmental & Productivity Potential

Reduces water use, energy consumption, and waste to the greatest extent economically feasible.

Strengthens the North American battery-grade lithium supply chain.

IMPACT
Environmental & Productivity Potential

→ **0**
Need for Deep, Energy-Intensive Mining

→ **1.4tCO_2e**
Reduced per Ton of Copper

MINE-FREE, HIGH-PURITY COPPER

*"Bloomberg is predicting that **copper demand is going to rise** to 50 million tons by 2035."*

FOUNDED BY

GREG HANNA
gregh@destinycopper.com

HQ: Thorold, ON

DESTINYCOPPER.COM

Destiny Copper of Thorold, Ontario, has developed a **process to extract high-purity copper and copper powder from industrial and mining waste.**

Founder and CEO Greg Hanna's innovative approach uses chemistry to precipitate copper powder, reducing energy consumption to near zero and cutting GHG emissions.

Destiny Copper can offer its copper at a significantly reduced price and in rural environments.

The solution also presents a waste management solution for producers of copper-rich industrial waste, such as in the semiconductor and mining industries, which is often incinerated or stored in deep rock wells.

Copper powders, used in additives, brazing, coatings, and lubricants in EV manufacturing and data centres, typically retail at 5-50x the price of traditional copper. Destiny plans to access this market first and then scale up to produce LME-grade copper from mine tailings.

Copper is the world's third-most widely used metal.

The global copper market, valued at over $345 billion, is currently experiencing a significant supply deficit driven by the accelerating worldwide shift toward clean energy and electrification.

Copper's unique properties make it irreplaceable in these new technologies. Copper mining is also facing several challenges, including increasing costs due to declining ore grades. Copper production in Canada declined by more than 22% from 2014 to 2023. [36]

This is creating a critical market need for more sustainable, cost-effective, and scalable copper production methods to meet the growing demand.

E-WASTE RECYCLING, **90% CLEANER**

Calgary-based Excir has developed **an integrated recycling platform that transforms how the world recovers value from electronic waste**—the fastest-growing and least-addressed waste stream on the planet.

Founded by Hiwa Salimi and Loghman Moradi, their modular technology uses proprietary chemistry and mechanical separation at lower temperatures to recover valuable materials from e-waste, mitigating the need for energy-intensive smelting.

This approach is designed to be highly scalable and can be integrated into existing waste management systems or operate as standalone facilities, enabling in-country processing close to the source of generation.

In 2022, the world generated a record 62 million tonnes of e-waste, with only 22.3% being formally collected and recycled. [37]

Canada's e-waste generation has more than tripled over the past two decades, from 8.3 kg per person in 2000 to 25.3 kg per person in 2020, and is projected to reach 31.5 kg per person by 2030. [38]

Excir's technology offers a scalable solution to this growing problem by enabling the efficient and environmentally friendly recovery of valuable materials from e-waste.

> *In 2022, **only 22% of e-waste was formally recycled,** leaving over US$60 billion in recoverable materials lost to landfill."*

FOUNDED BY

HIWA SALIMI &
LOGHMAN MORADI
alogan@excir.com

HQ: Calgary, AB

EXCIR.COM

SERVING SUSTAINABILITY AT SCALE

*"We're building the **technology and logistics infrastructure** to change the way we consume packaging at scale."*

FOUNDED BY

KAYLI SMITH & JACQUIE HUTCHINGS
kayli@friendlier.com

HQ: Guelph, ON

FRIENDLIER.COM

Co-founders Kayli Smith and Jacquie Hutchings of Guelph, Ontario, have created Friendlier, a **complete reusable packaging system for food service.**

The service, which includes smart containers, logistics, and software, makes it easy and affordable for businesses to switch from single-use to reusable packaging. By offering a system that is both convenient and cost-effective, Friendlier helps their clients meet growing consumer demand and regulatory requirements for sustainability. This approach has already prevented over 3 million packages from ending up in landfills while proving that a circular packaging model can be scaled profitably.

Single-use packaging has become a major environmental problem.

After disposal, these items can stay in the environment for hundreds of years. The resulting global waste crisis has prompted governments, including Canada's, to implement bans and regulations, creating an urgent need for businesses to find sustainable and cost-effective alternatives.

However, even alternatives like compostable packaging have their own issues, as there is limited capacity from composting facilities in Canada to accept them. [39]

Circular container reuse systems that maintain the convenience provided by single-use plastics are therefore gaining momentum.

IMPACT

Environmental & Productivity Potential

→ 3M
Packages Diverted from Landfills

→ 175
Tonnes of Waste Prevented

→ 500 tCO_2e
Avoided Emissions

IMPACT → **82%** Less CO_2 than Incumbent Technology → **18,300** Tonnes Less Waste per Year

→ **502k** m^3 Less Water Use per Year

EV LITHIUM-ION, ON-SHORED.

*"Graphite is the critical mineral that has the **largest projected supply gap** of over 5M tons per year."* [40]

FOUNDED BY

KEVIN WATSON
& GILLIAN HOLCROFT
gillian@greengraphitetech.com

HQ: Montreal, QC

GREENGRAPHITETECH.COM

A major economic and environmental challenge in the rapidly growing EV industry is the critical reliance on graphite, a material used in lithium-ion batteries.

Green Graphite Technologies (GGT) is a Montreal-based company addressing this problem by commercializing its **patented technology to produce battery-grade graphite in North America from both new and recycled sources.**

Led by founders Kevin Watson and Gillian Holcroft, GGT will build, own, and run commercial plants to produce battery-grade graphite from raw mined graphite, recycled battery materials, and factory scrap.

The company will also act as a licensor, selling technology packages and equipment to partners like graphite miners, battery recyclers, and gigafactories.

This will allow them to integrate GGT's process directly into their operations for fixed and recurring fees, ultimately establishing the build-own-operate model.

This technology is designed to serve North American and European battery factories with a 50% lower operating cost and lower carbon footprint than current Chinese production, making it a compelling solution to a critical supply chain weakness.

Electric vehicles contain 15x more graphite than lithium.

With the surge in demand for EVs, the industry faces a projected surge in demand for graphite. Canada has strong potential to build its EV battery supply chain, ranking between first and second place globally from 2022-2025. Despite being a producer of graphite, a key gap in Canada is known as the "midstream," or the ability to process raw critical minerals like lithium and graphite into battery-grade materials for use in manufacturing. China is projected to supply 80% of global battery-grade graphite in 2035, and it was noted as a key supply vulnerability by the IEA.

Developing battery material processing capacity in Canada is a critical component of building the national EV supply chain.

THERE'S GOLD IN THEM DEAD BATTERIES

*"Local, safe recycling infrastructure that **reduces dependence on overseas** mining and processing."*

GreenLIB of Kingston, Ontario, is making battery recycling more efficient and profitable.

Founded by Fred Rostrami, the company's **patented pre-treatment process removes contaminants like fluorine and other organic materials from battery waste,** known as black mass. This approach significantly improves the recovery of valuable materials like lithium, graphite, nickel, and cobalt by up to 20% while reducing energy consumption and emissions compared to current methods.

By providing a more efficient and cost-effective way to extract these materials, GreenLIB helps its partners, including recyclers and chemical processing firms, increase their yields and profitability. The technology is designed to be easily integrated into existing recycling facilities, allowing the industry to scale up to meet the growing demand for critical minerals for use in renewable energy, electric vehicles, and defence electrification.

The demand for critical minerals is rising rapidly—especially those essential for the clean energy transition, like in batteries and renewable infrastructure.

But production of these key minerals is very concentrated in a few regions of the world. For example, over 75% of the global supply of cobalt, which is critical in producing lithium-ion batteries, comes from the Democratic Republic of Congo, [41] and Australia, Chile, and China. Together, they produce almost all lithium worldwide. [42]

As the demand for materials grows, so does the importance of increasing and diversifying the sources of these minerals.

End-of-life batteries contain significant amounts of critical minerals that can be extracted and reused, minimizing the environmental and social impacts associated with the primary extraction of materials.

FOUNDED BY

FRED ROSTAMI
fred@greenlib.co

HQ: Kingston, ON

GREENLIB.CO

IMPACT
Environmental & Productivity Potential

→ **95%+**
Lithium, Graphite, and Ni/Co Recovered

→ **>90%**
Less Energy Consumption

PULP FIELDS, NOT FORESTS

*"The only pulp that meets industry specifications from **100% field fibre.**"*

HEJMAS has developed a patented, revolutionary technology that solves a critical, dual-pronged problem in the pulp industry: the need for a **sustainable alternative to wood pulp that is both more cost-effective and higher-performing.**

Founded by Marek Hejduk, the Calgary-based company's process uses only field fibre, producing pulp more efficiently and at a lower cost without using harmful chemicals. This allows manufacturers to reduce their reliance on expensive, environmentally damaging wood pulp.

The resulting pulp is three times stronger than wood pulp, enabling manufacturers to reduce the amount of long-fibre pulp needed in their products.

The Canadian pulp and paper sector has experienced a significant decline, with production falling from 22 million tonnes to 6 million tonnes over a decade, resulting in mill closures and job losses. [43]

Production has fallen from 22 million tonnes to 6 million tonnes over a decade, resulting in mill closures and job losses. This downturn is attributed to decreased demand for printing and writing paper, coupled with increased competition from global markets.

HEJMAS's innovative pulping technology addresses these challenges by using field fibre, reducing environmental impact while producing stronger, high-quality pulp.

FOUNDED BY

MAREK HEJDUK
marek.hejduk@hejmas.com

HQ: Calgary, AB

HEJMAS.COM

IMPACT

Environmental & Productivity Potential

→ 90%
Less CO_2 Than Competitors

→ 60%
Less Fresh Water Use

→ 70%
Lower Production Cost per Tonne

IMPACT → **4:1**

Environmental & Productivity Potential

Converts 4kg of Shell Waste into 1kg CNCs

PLASTIC GETS A SHELL SHOCK

FOUNDED BY

AARON GUAN
aaron.guan@neptunenano.com

HQ: Markham, ON

NEPTUNENANO.COM

Markham, Ontario-based Neptune Nanotechnologies **transforms crustacean waste into high-performance, biodegradable chitin nanocrystals** (CNCs).

Founded by Aaron Guan, these CNCs serve as a drop-in replacement for fossil-fuel-based plastics and chemical additives used in industries like pulp and paper and consumer packaged goods for coatings, packaging, and epoxy resins and composites.

In addition to reducing emissions by replacing fossil-based plastics, diverting organic waste from landfills also reduces methane and carbon emissions, enabling manufacturers to contribute to both net-zero and plastic-reduction targets.

Neptune's approach focuses on the application of circular economy, transforming an underutilized biomass stream into a renewable, value-added material which also delivers superior strength, moisture and oil resistance, and durability.

Global manufacturing companies are looking for environmentally friendly but effective alternatives to fossil-fuel-based plastics and chemical additives to meet plastic-reduction and emission-reduction targets.

Bio-based plastics and resins offer a compelling solution for manufacturers, allowing for the production of materials of similar performance from organic materials, including crustacean shells, previously thought of as waste.

> *Globally, 6–8 million tonnes of **crustacean end-of-life shell waste** are generated annually."* [44]

FOUNDED BY

YVON NADEAU & MUSTAPHA OUYED
mustapha.ouyed@groupeonym.com

HQ: Adstock, QC

GROUPEONYM.COM

FUEL, MINUS FOSSILS

*"Bio-oil, biochar, and wood vinegar at **prices competitive** with fossil fuels."*

ONYM **builds and operates large bioenergy plants that convert residual biomass, such as forestry waste, woody construction waste, or agricultural residues, into bioproducts through pyrolysis.**

Based in Adstock, QC, ONYM founders Yvon Nadeau and Mustapha Ouyed own and operate their production facilities rather than license technology, and sell products directly to customers in energy, materials, and agricultural markets.

These products, which include bio-oil, biochar, wood vinegar, and biogases, can be used as fuel substitutes for energy generation in heavy industries or as value-added products, like soil additives for agricultural production, among others.

Technologies that utilize residual biomass—the leftover woody and organic material from agriculture and forestry—are a significant opportunity to address environmental and economic challenges.

Processes like pyrolysis convert this waste into valuable bioproducts or bioenergy that can be used to replace fossil-based fuels or materials and reduce GHG emissions.

Often this waste is either sent to landfill or is burned, releasing GHGs into the atmosphere.

Instead, using the biomass is a promising circular solution with both environmental and economic benefits. It is also an opportunity for regional economic development, creating jobs and stimulating economic growth in rural areas.

IMPACT

Environmental & Productivity Potential

→ **70k**
tCO_2e Avoided Annually

→ **-15**
gCO_2e/MJ Carbon Intensity

RECYCLED IS THE NEW BLACK

*"The extracted PET is then sold into the textile manufacturing chain for use in **yarn, fabric, and then end-products."***

FOUNDED BY

CHRISTOPHER WAI
chris@sixone.ca

HQ: Burnaby, BC

SIXONE.CA

Sixone can **analyze unknown and mixed textiles to predict the optimal conditions for breaking down the materials,** overcoming the challenge of inconsistencies in material composition.

Many textiles and garments are polyester-based, made from a synthetic plastic material, the most common of which is Polyethylene Terephthalate (PET). The manufacturing of PET is energy intensive and uses fossil fuels.

PET is not biodegradable and although pure plastics can be easily recycled, there are challenges with effectively recycling polyester-based textiles. This is largely due to clothing that is made from a blend of materials, making it difficult to separate and process, so many used textiles end up in landfills.

Sixone enables the efficient recycling of textile waste into polyester chips.

The solution addresses key industry challenges, including feedstock availability and processing costs, by providing a technology platform that leverages data and AI to identify chemical composition and reactivity.

Sixone's solution will help to divert waste from landfills and also can help the apparel and textile industry to meet sustainability targets by increasing the supply of recycled PET and reducing reliance on fossil fuel-based raw materials.

Effective textile waste management reduces environmental harm by minimizing the leachate of chemicals and dyes and controlling microplastic pollution from discarded textiles.

More than 92 million tonnes of textile waste is produced around the world annually. [45]

Around 85% of this ends up in landfill with a significant environmental impact. Synthetic fibres take hundreds of years to decompose whilst release harmful greenhouse gases and the production of new textiles is resource intensive using high volumes of water, energy, and chemicals. [46]

IMPACT

Environmental & Productivity Potential

→ **417%**
Lower Environmental Impact than Virgin PET

→ **300k**
Garments Diverted from Landfills to Date

Sustane

IMPACT → **50%**

Environmental & Productivity Potential

Less Carbon Intensity When Replacing Fossil Fuels

RECYCLING THE *UN*RECYCLABLE

*"Sustane **recycles the least recyclable** plastics back into plastic feedstock with a proprietary process."*

FOUNDED BY

PETER VINALL
peter.vinall@sustanetech.com

HQ: Halifax, NS

SUSTANETECH.COM

Despite public awareness and collection efforts, plastic recycling remains a challenge due to the technical complexity of sorting mixed materials, combined with low economic incentive.

Sustane has developed a **process of turning the least recyclable plastics into 'drop-in' feedstock** for plastic production.

This solution reduces the need for resource and carbon-intensive fossil fuel feedstocks.

Increased recycling diverts plastic waste from landfills and minimizes environmental impacts like microplastic pollution that can result from improper disposal. Sustane's process is independently verified under ISCC PLUS protocols, and the company has secured major, long-term sales commitments, confirming high market demand for its recycled plastic product.

Canada generates over 2 million tonnes of plastic waste annually, with less than 10% of this being recycled, primarily due to economic disincentives, diversity of plastic types, and material contamination.

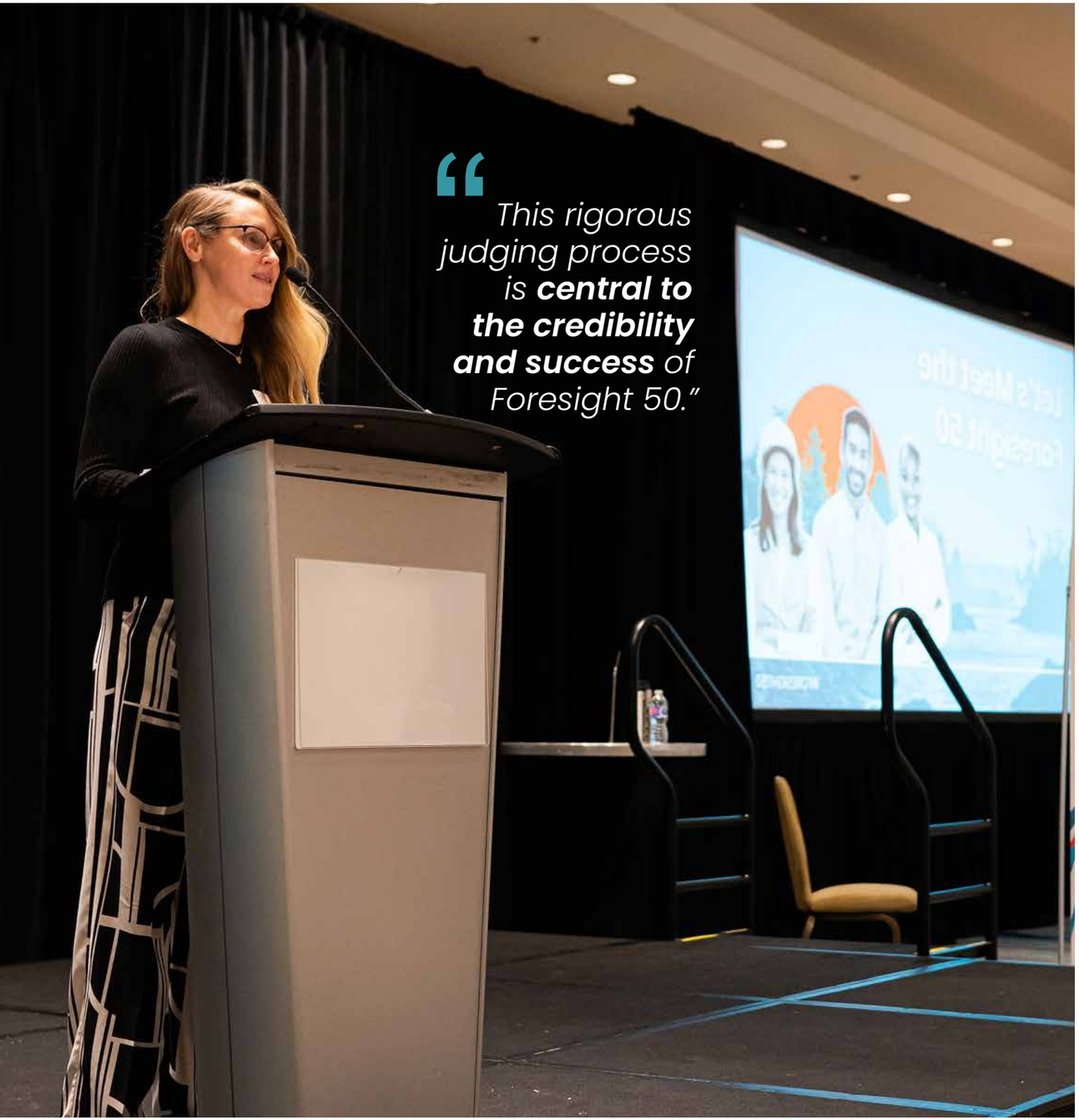
Plastics are a major source of pollution in landfills, rivers and oceans. [47]

You've Met the Honourees.

Now it's Time to Act.

Whether you're an investor, potential partner or adopter, or cleantech champion inspired by these solutions, we encourage you to connect with us directly to take these and previous years' Foresight 50 solutions to the next level.

foresightcac.com/foresight-50 | **info@foresightcac.com**



AN

OBJECTIVE JUDGING PROCESS

Having directed the Foresight 50 recruitment and judging process since 2023, it has been my mission to ensure it identifies Canada’s most promising, impactful cleantech ventures.

Each year, Foresight opens a nationwide call for applications, seeking the most scaleable, investible solutions to our toughest environmental challenges. To ensure **fairness and objectivity,** applicants do not need to have a previous relationship with Foresight or its acceleration programs.

This year, we received **over 180 phenomenal applications** from coast to coast. All submissions are reviewed by an independent panel of judges composed of leading Canadian angels, venture capitalists, and corporate venture capital investors.

Judging is conducted anonymously, with each venture being evaluated by five different judges whose scores across four key criteria are then averaged:

1. **Team:** Is the team the right fit to deliver the solution’s potential?
2. **Environmental Impact:** Do they demonstrate a measurable and likely environmental impact?
3. **Probability of Success:** Does the business model, market, and traction indicate strong potential for scale?
4. **Investment Readiness:** Are they positioned for successful investment?

The 50 highest-scoring applicants are selected based on overall scores, while ensuring a diverse representation of sectors, stages, and regions.

This rigorous judging process is central to the credibility and success of Foresight 50, ensuring ventures are evaluated through a true investibility lens.

And I’m excited to share that for the **first time ever,** none of the top 50 ventures have been recognized in previous years’ Foresight 50 lists, demonstrating both the growth of Canadian cleantech and that of Foresight’s national reach!

My deepest gratitude to the 37 judges who generously volunteer their time and expertise each year. Their detailed and thoughtful evaluations, as well as their commitment to advancing Canada’s cleantech sector, make this initiative possible.

Sincerely,

– **Brittany Goldhawke**
Director of Earth Tech & Investor Relations, Foresight Canada

*"These founders... **don't just "tick the climate box"—they outperform incumbents** on quality, performance, and cost."*

NOTE FROM A LONGTIME JUDGE

It's inspiring to see how many ambitious founders are seizing the opportunity to build globally competitive climate tech companies here in Canada.

The Foresight 50 is a powerful way to showcase these leaders and to remind us of the immense contribution Canadian companies can make toward solving an urgent global challenge.

As a judge for the Foresight 50 over the past three years, I've had the privilege of diving deep into the details behind dozens of Canada's most promising clean- and climate-tech ventures.

Each application tells a story of grit, ingenuity, and commitment. We evaluate companies on several key criteria: **leadership, environmental impact potential, likelihood of success, investment readiness,** and that **hard-to-define "wow factor"** that signals a breakout opportunity. It's an exercise that provides a rare panoramic view of the sector's health and direction, and a humbling reminder of how much talent and creativity exist in this space.

Despite the headwinds facing climate investment globally, this year's Foresight 50 gives me reason for optimism.

These founders are building superior products and services that don't just "tick the climate box"—**they outperform incumbents on quality, performance, and cost.** That's how real transformation happens: when climate solutions win in the market on their own merits.

Foresight plays a critical role in maintaining momentum through uncertain times by helping ensure that visionary entrepreneurs have the resources, mentorship, and visibility they need to keep moving forward, and that investors like us can identify and support the next generation of category-defining companies.

The 2025 Foresight 50 stands as proof that Canada's climate innovators **aren't just building great technologies—they're building great businesses** with the potential to lead globally.

– **Sophie Seston**

VP Operations, Active Impact Investments & Foresight 50 Judge

JUDGES

Alisha Jani
At One Ventures

Holding an M.S. in Sustainability Science from Stanford, Alisha co-founded an educational non-profit in East Africa and co-led BD at a soil carbon startup. She works to help shape a more resilient, just, and sustainable future.

Andrew Wong
TRIREC

With over a decade of finance experience, Andrew is a Director at TRIREC. He leads strategic deals in energy, mobility, and agriculture. He founded the Little Environment Club to support Asia's climate tech community.

Barbara McKenzie
Metis Settlements Dev

Serving as the CEO of Metis Settlements Development Corporation, a $100 million Indigenous investment firm, Barbara focuses on strategic disruption and entrepreneurship.

Ben Gibbons
Waterpoint Lane

As a Co-Managing Partner and CIO, Ben sets the fund's strategic direction. With 20+ years in finance, he has led over $2 billion in transactions and serves on two portfolio company boards.

Bijoy Shah
Earth Foundry

Bijoy focuses on sourcing and portfolio support. He previously worked at an agtech venture fund and co-founded a student-led venture studio at Boston College.

Blake Bunting
GoParity

As Co-founder of Goparity Canada, Blake secured over $1 million in funding and facilitated nearly $1 million in loans. He has been recognized as one of Canada's Top 25 Environmentalists Under 25.

Cheri Corbett
Pender Ventures

With two decades of experience, Cheri focuses on impact and climate tech. She played a key role in launching a $500 million fund and is committed to scaling transformative companies.

Chris Edwards
Tall Grass Ventures

Chris specializes in fund operations and portfolio management. With 20 years of experience, he works closely with founders and has a passion for agri-food innovation.

Crystal Lo
InBC Investment Corp

Deploying capital for positive social and environmental outcomes at InBC, Crystal brings a global perspective from her work in impact investing, lending, and real estate.

Dania Moazzam
RBCx

Dania is a strategic advisor in Calgary's tech community. A CFA charter holder, she mentors entrepreneurs and is deeply involved in Alberta's innovation ecosystem.

Daniel Kriozere
Anthropocene Ventures

Daniel splits his time between early-stage equity at Anthropocene Ventures and growth credit at IFM Investors, remaining active across multiple asset classes in climate finance.

Daniel Vo
Renewal Funds

Daniel is responsible for deal sourcing and due diligence. He previously worked at British Columbia Investment Management Corporation, researching sustainable public companies.

David Weekes
Pangaea Ventures

Prior to Pangaea Ventures, David developed research and tech initiatives at the University of British Columbia. He is an active mentor within the BC startup community and holds a PhD in Chemistry.

Doug Lui
Vine / Misfit Ventures

Founding Misfit Ventures, an LGBTQ+ VC fund, Doug has over 25 years of experience in corporate finance. He also serves as a Venture Partner at Vine Ventures, focusing on ESG projects.

Eric Yao
Azolla Ventures

As an Investment Analyst, Eric sources and manages investment opportunities. A Rutgers University graduate, he previously advised Fortune 500 companies on sustainability and branding.

Grant Lawrence
Valhalla Private Capital

As an active angel investor, Grant manages Valhalla Angels' BC chapters. With 20+ years of B2B experience, he helps founders with sales, business development, and capital raises.

Guirong Yang
Xavaav Capital

A seasoned executive and investor with 30 years of experience, Guirong has a strong track record in renewable energy. He is a founding partner of Pacific Hi-Tech Investment, focusing on clean-tech.

Irene Yang
BASF Venture Capital

Prior to BASF Venture Capital, Irene was previously BASF Canada's Director of Business Development. Her career includes roles at AMD and McKinsey. She earned her graduate degrees from MIT.

Jay Patel
Toyota Ventures

Jay has held internships in sustainability and climate tech at Chevron and the US Department of Energy. He also founded a climate-focused consulting organization.

Jennie Graham
Burnt Island Ventures

Jennie supported founders in Afghanistan and the Middle East. She transitioned to venture capital, focusing on water, food, and waste investments. She holds an MBA from Duke University.

Jessica Lajoie
Alberta Ecotrust

An environmental engineer, Jessica leads impact assessments for the Climate Innovation Fund (hosted by the Alberta Ecotrust Foundation) and is dedicated to advancing AB environmental projects.

Jonathan Graham
Investor

Specializing in mining, manufacturing, and cleantech, Jonathan serves on the board of a global industrial minerals company and has held strategy roles at Siemens UK.

Jotham Chow
Amplify Capital

Working as an analyst at Amplify Capital, Jotham has experience developing medical devices and analyzing health tech and deep tech investments.

Ka-Hay Law
Telus Global Ventures

Sourcing and executing investments for TELUS, Ka-Hay focuses on sustainability and agriculture. She was previously VP of Impact and Investments at the Lundin Foundation.

Ludovic Copere
Sony Innovation Fund

With 17 years of venture capital experience at Sony, Ludovic leads scouting and due diligence for the Sony Innovation Fund. He focuses on fintech, mobility, and agtech.

Manuel Garcia
Innovate Calgary

As an Associate at the UCeed Energy Fund, Manuel invests in deep tech and energy. He works with founders to advance science-based solutions toward commercialization.

Moien Giashi
GreenSky Ventures

A polymer engineer turned venture capital investor, Moien is a Principal at GreenSky Ventures and serves on multiple startup boards, including eight GreenSky portfolio companies.

Namandra Anand
Northpine Foundation

A global leader in sustainable finance with over 20 years of experience, Namandra focuses on driving transformative solutions at the intersection of energy, equity, and the environment.

Nikhil Nayar
Rogue Insight Capital

Nikhil leads investments at Rogue, a single-family office, focusing on sourcing, due diligence, and portfolio strategy. He has a track record of backing high-growth ventures.

Olivia Hornby
Spring Capital

As a founding partner at Spring Impact Capital, Olivia invests in pre-seed climate and health companies. She has over 15 years of finance experience, including a previous role as a VP at Goldman Sachs.

Simon Olivier
Cycle Capital

A global executive with a background in innovation and finance, Simon led GE's entry into renewables and oversaw M&A for GE Ventures. He empowers organizations to scale transformative solutions.

Steven Xu
INP Capital

As a co-founder, CEO, and managing partner, Steven has 20 years of financial experience. He focuses on high-tech, agriculture, and healthcare investments, and has nurtured three unicorn companies.

Taylor Huff
Khasma Capital

Taylor invests in climate tech with Khasma Capital. He previously led business development for a waste-to-hydrogen project and was the founding CEO of a Series A startup.

Tom Urban
Agribusiness Advisors

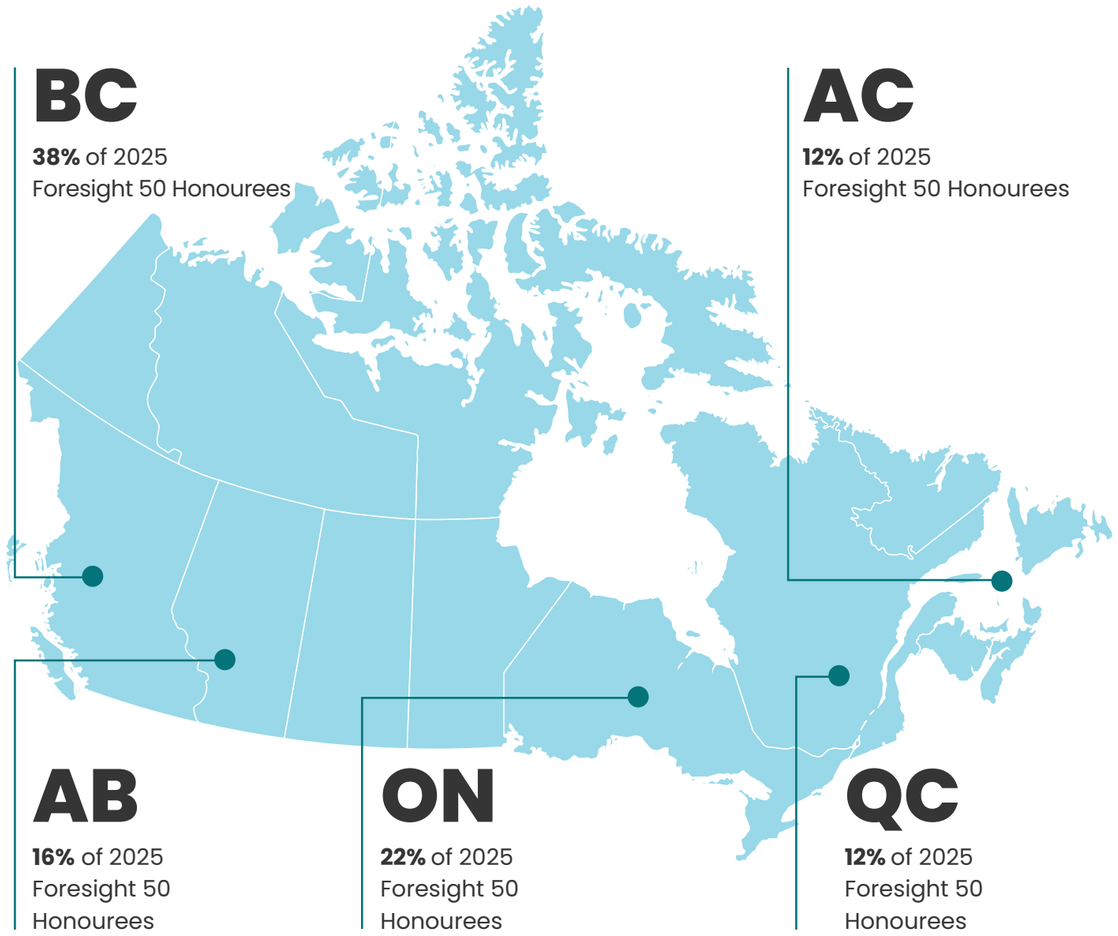
With a career spanning Goldman Sachs, Pioneer, and DuPont, Tom is seasoned in agriculture and finance. He served as CEO of CellFor until its acquisition, and founded Agribusiness Advisors in 2013.

Uzoma Erondu
The Atmospheric Fund

Uzoma oversees market research and due diligence for low-carbon investments. He is a Chartered Accountant and CFA Charterholder, with experience at SVX and KPMG.

Val Chiykowski
Evok Innovations

Val has worked with the Creative Destruction Lab on mentorship for advanced material startups and supported Canadian cleantech firms at Sustainable Development Technology Canada.



→ 44%
of 2025 Foresight 50 Ventures have Women-Identifying C-Suite Leaders

→ 10%
of 2025 Foresight 50 Ventures have Indigenous-Identifying C-Suite Leaders

→ 30%
of 2025 Foresight 50 Ventures have BIPOC-Identifying C-Suite Leaders

→ 48%
of 2025 Foresight 50 Ventures have New Canadian-Identifying C-Suite Leaders

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CATCH MORE CANADIAN CLEANTECH:

WEB SUMMIT VANCOUVER

May 11-14, 2026

The future of clean technology is undoubtedly here in Canada—a country home to distinct innovation ecosystems from coast to coast. In May 2026, **Web Summit Vancouver** offers global investors and adopters a prime opportunity to connect with this top-tier Canadian talent.

You can find the best of cleantech innovation showcased in the **Climate Innovation Zone,** a dedicated landing pad for all things green economy on the summit floor. Foresight Canada will be headquartered there, along with NorthX Climate Tech and more valued partners.

Join us at Web Summit Vancouver to meet exceptional ventures and gain insight into the investment landscape that makes Canada a global innovation powerhouse.

Connect with Web Summit for curated advice and recommendations to maximize your experience:

Partnership Opportunities:
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About Foresight

Foresight Canada helps the world do more with less, sustainably. As Canada's largest cleantech innovation and adoption accelerator, we de-risk and simplify public and private sector adoption of the world's best clean technologies to improve productivity, profitability, and economic competitiveness, all while addressing urgent climate challenges.

Disclaimer

Information in this pitchbook was collected between August and September, 2025, and therefore some information may have been updated since then. For the most up-to-date venture investment information, please contact the ventures directly.

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