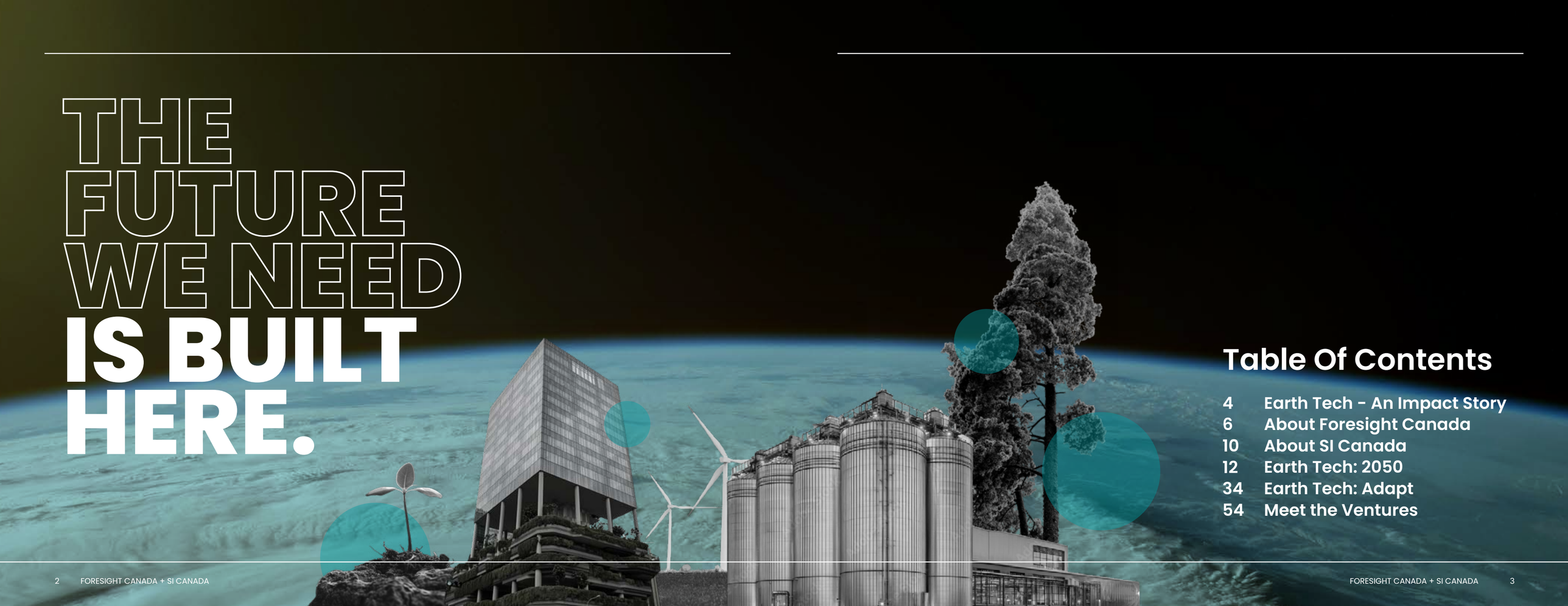

FORESIGHT
CANADA
SI
SOCIAL
INNOVATION
CANADA
EARTH
TECH
REAL
CLIMATE
IMPACT IN
ACTION

THE FUTURE WE NEED IS BUILT HERE.



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EARTH TECH AN IMPACT STORY

Since 2020, Earth Tech has supported some of Canada's most promising and impactful climate technologies, solutions capable of transforming industries, strengthening communities, and accelerating our path toward a resilient, low-carbon future. Across every sector and geography of Canada, these ventures are tackling our most urgent climate challenges with bold innovation and a deep commitment to measurable impact.

Yet even the strongest climate solutions face a critical barrier: the scale-up gap[1]. Technologies that can meaningfully reduce emissions or help communities adapt often stall between prototype and market adoption[2]. At this stage, ventures need capital for pilot validation, techno-economic and life-cycle assessments, market intelligence, community engagement, and investor readiness, but these activities are rarely funded through grants, and too early-stage for traditional investment[3,4]. This is the moment when climate innovation is most fragile, and when support matters most.

To bridge this gap, philanthropic partners came together to pool flexible, mission-aligned funding that enables Earth Tech ventures to focus on what truly moves the needle. This collaborative model ensures founders can advance through key commercialization milestones, validate their technologies in real-world contexts, and build the partnerships required for large-scale deployment.

Philanthropy de-risks breakthrough solutions, helping them reach the markets, communities, and ecosystems where they are urgently needed.

In 2024, Earth Tech evolved into Earth Tech: 2050, sharpening its focus on mitigation technologies with the potential to reduce or remove significant greenhouse gas emissions by mid-century. This year, Earth Tech expanded again through Earth Tech: Adapt, supporting ventures developing the tools, data systems, and technologies that help communities withstand the accelerating impacts of a changing climate.

Together, these streams form a unified platform for climate innovation—one designed to accelerate solutions on both sides of the climate equation: reducing emissions wherever possible, and strengthening resilience where adaptation is essential.

"We built Earth Tech to accelerate the climate solutions Canada, and the world, urgently needs. Earth Tech: 2050 and Earth Tech: Adapt exist to ensure that Canada's most impactful climate ventures don't just survive the scale-up gap, they break through it. **Because when innovation is supported at the right moment, climate impact becomes inevitable.** These programs, delivered in partnership with Foresight Canada and Social Innovation Canada, bring together the country's leading expertise in cleantech and social impact to help transformative ventures scale where it matters most."

— Brittany Goldhawke, Director of Earth Tech & Investor Relations

FORESIGHT
CANADA

HELPING THE WORLD DO MORE WITH LESS, SUSTAINABLY.

Foresight Canada is a national cleantech accelerator focused on helping industry adopt sustainable, high-impact technologies. Its mission is to connect innovators, investors, governments, and industry to accelerate Canada's transition to a net-zero economy.

Foresight supports ventures at every stage with mentorship, commercialization tools, Executives in Residence, investor networks, and curated market introductions—helping companies validate technologies and secure capital to scale.

By working closely with industry to identify urgent decarbonization challenges, Foresight matches real-world demand with emerging solutions, reducing adoption risk and accelerating market deployment for Canadian cleantech.

Foresight collaborates with provincial and federal governments to strengthen Canada's position in climate innovation—supporting regional clusters, export readiness, supply chains, and informed climate policy.

Investors are central to its ecosystem. Through curated deal flow, matchmaking, and fundraising support, Foresight connects high-potential ventures with the capital needed to scale.

Working with academia and industry, Foresight helps commercialize research and build the skilled workforce required for Canada's climate and economic future—accelerating cleantech adoption at home and abroad.

Climate & Economic Impact

1,725+
Companies Supported

100+
Client-Driven Adoption or Research Projects

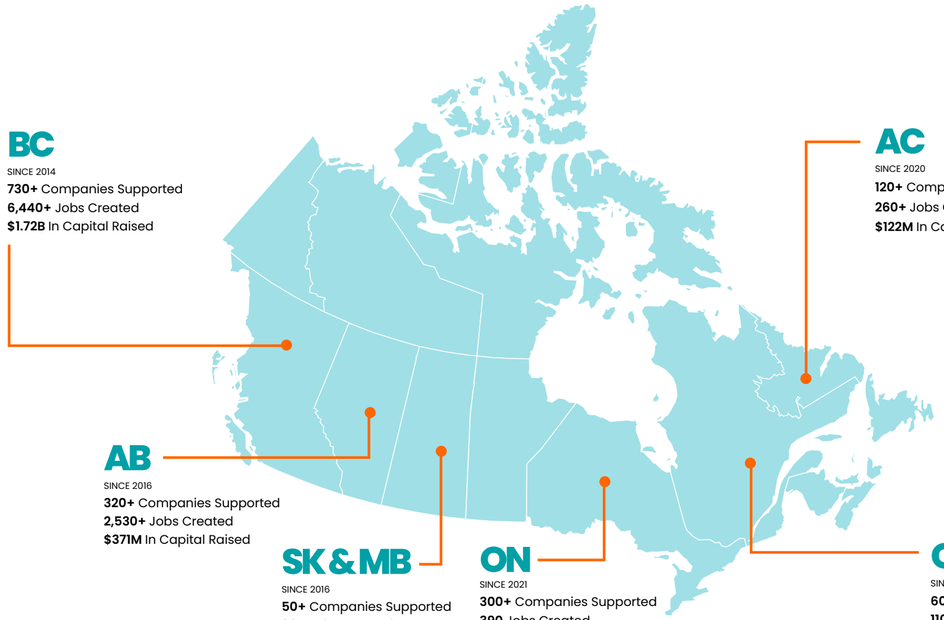
$622M
Revenue Generated

10,000+
Green Jobs

70+
Mt Reduced Emissions

$2.45B
Capital Support

Regional Impact



BC
SINCE 2014
730+ Companies Supported
6,440+ Jobs Created
$1.72B In Capital Raised

AB
SINCE 2016
320+ Companies Supported
2,530+ Jobs Created
$371M In Capital Raised

SK & MB
SINCE 2016
50+ Companies Supported
80+ Jobs Created
$47M In Capital Raised

ON
SINCE 2021
300+ Companies Supported
390 Jobs Created
$53M In Capital Raised

AC
SINCE 2020
120+ Companies Supported
260+ Jobs Created
$122M In Capital Raised

QU
SINCE 2022
60+ Companies Supported
110+ Jobs Created
$80M In Capital Raised

SI SOCIAL INNOVATION CANADA

STRENGTHENING CANADA'S CAPACITY FOR SYSTEMS CHANGE

Social Innovation Canada (SI Canada) is a national charitable organization working to create the conditions for meaningful systems change across the country.

By connecting community organizations, governments, philanthropy, innovators, and academia, SI Canada helps align people, evidence, and resources so communities can address complex challenges more effectively and equitably. Grounded in the belief that Canada's future depends on both technological and social innovation, SI Canada strengthens the capacity to collaborate, experiment, and improve systems for everyone.

Through its programs, SI Canada equips social purpose leaders with tools and methodologies to design, test, and scale solutions, while also shaping the policies and funding environments that enable lasting impact. The organization convenes and stewards cross-sector collaborations on pressing issues such as housing, climate, belonging, and economic resilience—ensuring the process builds community agency and innovation capacity. Guided by inclusion and equity, SI Canada envisions a more just, resilient, and sustainable future where innovation serves people and the planet.

SI Canada Project Spotlight: Climate & Equity Lab

ALIGNING CLIMATE ACTION WITH SOCIAL EQUITY

The Climate and Equity Lab, launched by Gore Mutual Foundation in partnership with Social Innovation Canada, York University, The Co-operators, and Peter Gilgan Foundation, addresses a critical gap: climate change solutions often overlook those disproportionately impacted in Canadian cities — including a growing number of households now considered "uninsurable."

Engaging over 100 stakeholders across Vancouver, Toronto, and Waterloo Region, the Lab is exploring how housing insecurity, limited access to information, fragile social infrastructure, and unaffordable protective measures intensify climate risks like heat, flooding, and wildfire smoke, for communities living at the margins.

Beyond accelerating climate ventures through Earth Tech, SI Canada is advancing systems-level solutions that address the structural drivers of vulnerability. The Lab is now moving into implementation — developing scalable models that support community-led resilience to ensure climate adaptation strengthens, rather than widens, equity.

EARTH 20
TECH 50

SCALING THE TECHNOLOGIES THAT CAN CHANGE OUR CLIMATE TRAJECTORY

At Foresight and SI Canada, we recognize that achieving net-zero by 2050 demands rapid acceleration of high-impact climate technologies. Canada's emissions remain high, 702 million tonnes in 2023[5], just 8% below 2005 levels[5], well short of national targets.

As one of the world's highest per-capita emitters[6], Canada must scale transformative solutions far faster than current trajectories allow.

Earth Tech: 2050 identifies and accelerates climate ventures capable of **reducing or removing 0.5 gigatonnes of CO2e by 2050.**

Even the strongest technologies face structural barriers. Many high-impact ventures struggle to secure pilot funding, validation, and clear regulatory pathways. The "pilot to-scale up" gap remains a critical obstacle to deploying solutions at gigaton scale[7], compounded by regional inequities and limited access to capital. Earth Tech: 2050 was created to close these gaps.

By prioritizing high-impact carbon removal and reduction solutions, we ensure Canada's most promising ventures receive the support needed to commercialize and scale.

Through philanthropic funding, technical validation, mentorship, investor readiness, and industry engagement, Earth Tech: 2050 de-risks breakthrough technologies at critical moments, accelerating market adoption and unlocking real-world climate impact at scale.

Canada cannot reach net-zero without scaling solutions that materially shift our emissions curve. Through Earth Tech: 2050, Foresight Canada and SI Canada are building the infrastructure to turn climate ambition into measurable outcomes, ensuring high-impact ventures don't just emerge, but scale.

MEET THE VENTURES BUILDING THE TECHNOLOGIES THAT CAN CHANGE THE CLIMATE STORY— BOLD INNOVATIONS WITH THE POTENTIAL FOR TRANSFORMATIVE, GLOBAL IMPACT.

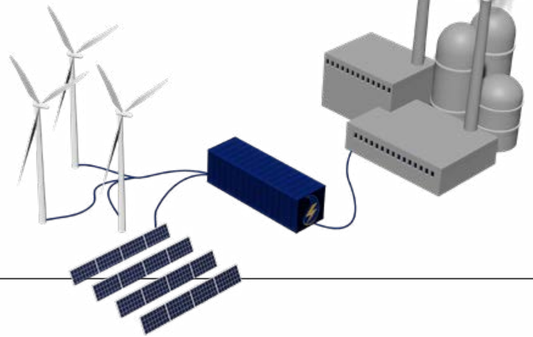
AQUA-CELL ENERGY

POWERING RENEWABLES WITH BREAKTHROUGH SALTWATER BATTERIES

Aqua-Cell was founded on the belief that the clean energy transition requires storage solutions that are safe, scalable, and built from abundant materials. Drawing on expertise in water treatment and electrochemistry, the team reimagined long-duration energy storage using one of the planet's most plentiful resources: saltwater.

Their vision is simple yet transformative: deliver 24/7 clean power without relying on critical minerals or fragile supply chains.

Aqua-Cell exists to unlock renewable energy at scale and redefine how grids store and deliver power.



LOCATION: ALBERTA
CO-FOUNDER & CEO: KEITH CLELAND

Problem

Global electricity demand is projected to double by 2035[8], driven by AI data centers, electrified heating, and electric vehicles[9,10,11]. As renewables scale, grid intermittency and peak demand are placing growing strain on infrastructure[12,13,14].

Without affordable, long-duration storage, utilities face billions in transmission and substation upgrades[15,16]. The world needs solutions that store renewable power for hours or days, not just minutes, while improving reliability and reducing costs.

Solution

Powering the world with saltwater.

Aqua-Cell's saltwater flow battery delivers 12–100 hours of safe, long-duration storage at lower cost than lithium-ion. Built without critical minerals and based on proven water-treatment technology, it scales quickly for mid-size grid needs.

Aqua-Cell makes renewable energy dependable, 24/7.

Impact

11.4M
tonnes of Co2 reduced by 2025

$40M
substation upgrade costs deffered with a $5M battery installed

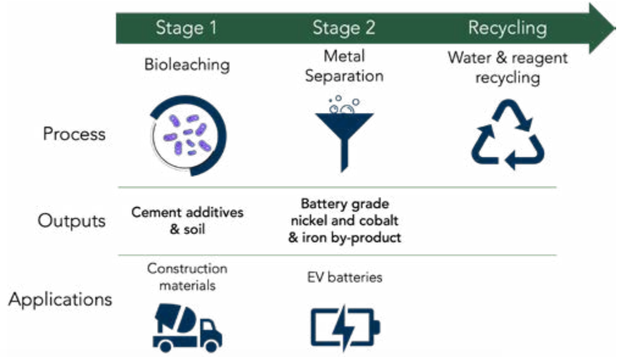
$0-$60
per MWh charge

BROKKR MINERAL RESOURCES

MINING BATTERY METALS WITH MICROBES, AND WITHOUT THE EMISSIONS

Brokkr was founded to solve a defining challenge of the energy transition: producing the battery metals needed for electrification without repeating the environmental harms of traditional mining and refining. Inspired by nature's chemistry, the team developed a microbe-powered extraction and bio-inspired refining system that reimagines how critical metals are produced.

By harnessing electrogenic bacteria and advanced ion-exchange materials, Brokkr delivers a cleaner, lower-cost pathway to supply nickel, cobalt, and manganese, the backbone of batteries and renewable energy systems.



LOCATION: BRITISH COLUMBIA
PRESIDENT: RACHEL SIMISTER
CEO: SEAN CROWE

Problem

Global demand for critical minerals—nickel, cobalt, and manganese—is surging as batteries and electrified infrastructure scale[17,18,19].

Yet dominant processing methods like HPAL, smelting, and solvent extraction are incompatible with a sustainable transition[20, 21, 22].

They emit over 33 tCO_2e per tonne of refined nickel [20,22], rely on extreme heat and pressure, generate toxic waste[21,23], and cannot economically process low-grade ores[24,22,25]. A cleaner, lower-carbon, and more efficient approach to producing these essential metals is urgently needed.

Solution

Brokkr has developed a microbe-powered extraction and bio-inspired refining system that replaces high-emission mineral processing with low-energy natural chemistry. Their electrogenic bioleaching uses bacteria to recover nickel, cobalt, and manganese at ambient conditions, eliminating harsh acids and unlocking low-grade ores. Paired with selective ion-exchange refining, the process purifies metals without toxic solvents and with far lower energy use.

Together, these innovations create a scalable, low-carbon platform for producing the critical minerals essential to the clean energy transition.

Their Process Yields:


Manganese Sulfates


Cobalt Sulfates


Nickel Sulfates

Impact

82%+
emissions reduction per tonne of refined nickel

70–95%
reduction in electricity demand

Zero
toxic tailings; no acid effluent

FEX ENERGY

TURNING IRON INTO FOSSIL-FREE INDUSTRIAL HEAT AT MASSIVE SCALE.

FeX Energy emerged in 2023 as a spin-out from McGill University's Alternative Fuels Laboratory, in partnership with the cleantech venture studio Hard Climate.

Their mission is bold yet simple: to empower industrial decarbonization with an iron-based energy storage solution that is abundant, safe, and globally accessible.

By tapping into iron's unique material properties, FeX aims to store renewable energy over long periods and deliver it as clean, reliable heat or power — even for the most demanding industrial applications.

Problem

As industries transition away from fossil fuels, many sectors still rely on high-temperature heat and steady power—needs poorly served by intermittent renewables or traditional batteries[26].

Lithium-ion and other storage solutions often lack the energy density, duration, or temperature range required for heavy industry and remote operations[27,28].

Without high-density, long-duration storage capable of delivering heat, many sectors remain locked into fossil fuels, slowing decarbonization[29].

Solution

FeX Energy's core innovation is a proprietary iron-based long-duration storage system built around its Iron Arc Reactor. The system uses renewable electricity during low-demand periods to store energy chemically in iron. When energy or heat is needed, even at industrial temperatures up to 900 °C, the iron is oxidized to release high-temperature heat or power.

Iron is abundant, inexpensive, stable, and free from the toxicity and supply-chain risks of many battery metals. The modular, containerized reactor can store energy from days to years, making it ideal for industrial heat, remote power, heavy transport, and other high-density, dispatchable energy needs.

LOCATION: QUEBEC
CEO: HAYDEN SMITH

Impact

Energy
storage duration:
days > months > years

900°C
Increase in energy delivery

Emission- free,
Safe iron-based system

GREEN GRAPHITE TECHNOLOGIES

CLEANING UP GRAPHITE TO UNLOCK NORTH AMERICA'S BATTERY FUTURE.

Green Graphite Technologies was founded to solve a key electrification bottleneck: the shortage of sustainable, battery-grade graphite in North America. While graphite anodes are essential to lithium-ion batteries, today's supply chain relies on high-carbon processes overseas. GGT is building a cleaner, local alternative.

Through its patented technologies: GraphPure™, GraphRenew™, and GraphRestore™, GGT converts natural and recycled graphite into high-purity, battery-grade material, strengthening domestic supply and reducing environmental impact.

LOCATION: QUEBEC
CEO AND CO-FOUNDER: GILLIAN HOLCROFT
CTO CO-FOUNDER: KEVIN WATSON
VP PROJECT DEVELOPMENT: TOM WHITTON

Problem

Global electrification is driving demand for battery-grade graphite[30], yet the supply chain remains dominated by high-carbon, chemically intensive processes overseas[31].

These energy-intensive methods are costly and environmentally damaging[32], limiting North America's ability to secure a sustainable domestic supply[33].

Meanwhile, natural and recycled graphite remain underutilized due to inefficient purification technologies[34]. Without a cleaner, scalable local solution, EV and energy storage growth will face graphite bottlenecks[35].

Solution

Green Graphite Technologies provides a sustainable North American alternative to conventional graphite purification through its patented GraphPure™, GraphRenew™, and GraphRestore™ technologies.

These processes convert natural and recycled graphite into high-purity, battery-grade material using a low-impact method that avoids harsh acids, extreme temperatures, and significant waste.

By reducing energy use and environmental impact, GGT enables scalable, local graphite production, strengthening domestic battery supply chains and supporting EV and energy storage growth with a cleaner, more resilient anode material.

Impact

~50%
lower operating costs vs conventional graphite purification

82%
less emissions vs LiB-grade graphite from China

>99%
Reduction in H2O use/waste generation

GRENGINE

REPLACING DIESEL GENERATORS WITH SILENT, ZERO-EMISSION POWER ANYWHERE.

Grengine was founded to set a new standard in clean, accessible energy, building modular battery systems that replace emission-heavy diesel generators with reliable, renewable-compatible power. As a woman-owned, LGBTQ+-led company, Grengine's mission blends sustainability, equity, and practical energy access.

Their vision is to democratize energy for remote communities, industry, and everyday users by delivering affordable, ethically built storage manufactured in North America.

LOCATION: ALBERTA
CEO: CONNIE STACEY

Problem

Millions still lack reliable electricity[36], relying on costly, polluting diesel generators that worsen climate change[37,38]. For remote and underserved communities, this energy poverty limits economic opportunity and essential services[39].

Meanwhile, conventional storage solutions are often too expensive or ill-suited for off-grid needs[40]. A clean-energy transition, especially beyond urban grids, requires flexible, modular storage that integrates with renewables and eliminates the emissions and logistical burdens of diesel[41].

Impact

50%
reduction in electricity bills from load balancing with batteries.

911,250
tonnes of Co_2e avoided per year

80%
Up to 80% reduction in lifecycle waste

Solution

Grengine offers a modular, stackable battery storage system designed to deliver clean, reliable power without the downsides of conventional diesel or legacy backup systems. Their batteries are plug-and-play, chemistry-agnostic, and manufactured in North America.

Because they can be stacked like building blocks and combined flexibly, Grengine's systems scale from small residential or remote-site use, all the way up to industrial applications.

They can be charged from solar, wind, or grid power, offering a versatile platform that replaces diesel generators, reduces emissions, and improves energy access in even the most challenging settings.

Their design emphasizes simplicity: no complex installation or highly technical maintenance, meaning communities can deploy them without needing specialized engineers — a major advantage for remote or underserved areas.

LITUS

UNLOCKING HIDDEN LITHIUM WITHOUT DRAINING ECOSYSTEMS.

Litus was founded in 2019, spun out of University of Calgary research, to address a growing challenge: surging lithium demand met by limited, environmentally intensive supply methods. While traditional extraction focuses on high-concentration brines or mining, vast lower-concentration resources remain untapped.

Litus developed a nanotechnology solution to unlock these underutilized sources, enabling more sustainable, low-impact lithium extraction to support the clean energy transition.

LOCATION: ALBERTA
CEO AND CO-FOUNDER: GHADA NAFIE
CTO AND CO-FOUNDER: GERARDO VITALE
CO-FOUNDER: PEDRO PERIERA-ALMAO

Problem

Global electrification is driving lithium demand to unprecedented levels[42], but traditional extraction cannot keep pace[43]. Hard-rock mining and evaporation ponds are slow, water and energy-intensive, and environmentally damaging, limiting supply to select high-concentration regions[44].

Meanwhile, vast lithium resources in low-concentration brines, geothermal fluids, and oil-field waters[45] remain untapped because conventional technologies cannot extract them efficiently[46]. This growing gap between demand and sustainable supply threatens EVs, battery manufacturing, and grid storage[47].

Solution

Litus has developed LiNC™ (Lithium Nanocomposite Capture), a proprietary direct lithium extraction system that selectively recovers lithium from aqueous sources, even low-concentration brines, with high efficiency and minimal environmental impact. The plug-and-play system uses little water and energy, rejects impurities, and produces battery-grade lithium.

Its modular design enables deployment at oil-field produced water sites, geothermal reservoirs, salars, and other previously uneconomic sources, replacing high-impact mining and evaporation with a cleaner alternative.

Impact

≥99.5%
lithium recovery from brines

~8 kWh
energy per extraction cycle, low energy demand.

~3x
lower greenhouse-gas emissions vs traditional methods

SIXONE LABS

TRANSFORMING TEXTILE WASTE INTO HIGH-PERFORMANCE CIRCULAR POLYESTER.

Sixone Labs was founded to address one of the textile industry's toughest challenges: recovering high-quality materials from complex, blended garments at scale. Recognizing that current recycling systems cannot achieve true circularity, Sixone developed a technical and digital platform that transforms mixed textile waste into high-value polyester.

Their mission is to enable decentralized, intelligence-driven recycling where waste actually exists, producing virgin-like materials that can meaningfully displace fossil-derived polyester.

LOCATION: BRITISH COLUMBIA
CEO AND CO-FOUNDER: CHRISTOPHER WAI
CTO AND CO-FOUNDER: JIN SUNTIVICH

Problem

Most textile waste cannot be recycled because garments are made from complex fiber blends and chemical finishes[48]. Existing recycling technologies handle only clean, single-fiber inputs, leaving most post-consumer clothing outside the circular system[49].

Recycling infrastructure is also misaligned with waste generation, manufacturing is concentrated in Asia, while waste accumulates in North America and Europe[50]. Without blended-material processing and local systems, large-scale textile circularity remains constrained[51].

Solution

Sixone Labs enables textile circularity through predictive intelligence, gentle chemistry, and localized recycling. Their Prism engine analyzes complex garments to determine optimal processing, replacing guesswork with data-driven sorting. Using mild chemistries, Sixone selectively extracts polyester to produce Origin, a high-performance, virgin-like material.

Paired with decentralized recycling infrastructure in North America and Europe, Sixone turns blended textile waste into valuable feedstock, making scalable circularity achievable.

Impact

1.5
tonnes of crude oil avoided per tonne recycled

10–30
chemicals prevented from contaminating soil & water

3–4 m³
landfill space saved per tonne recycled

SUSTAERO

FUELING AVIATION WITH CANADIAN WOOD — MINUS THE CARBON.

Sustaero is developing Canada's first large-scale Sustainable Aviation Fuel (SAF) capacity, targeting 1 billion litres annually using Canadian wood waste and its proprietary SOAR™ process.

Founded to address aviation's urgent decarbonization challenge, Sustaero leverages forest biomass, renewable electricity, and former pulp-and-paper sites to create a secure, domestic SAF supply.

By revitalizing industrial infrastructure in rural and Indigenous communities, Sustaero pairs climate action with economic renewal.

SUSTAERO
GREEN FUELS FOR BLUE SKIES

Problem

The aviation sector accounts for a meaningful share of global greenhouse gas emissions, and growing air travel continues to drive carbon-intensive jet fuel demand[52]. Conventional kerosene-based fuel significantly contributes to CO_2 emissions and climate change[53].

While Sustainable Aviation Fuel (SAF) offers a drop-in alternative compatible with existing aircraft, global supply remains a small fraction of total jet fuel demand[54].

Without expanded domestic capacity and cost-competitive production, aviation's emissions trajectory will remain high-carbon[55].

Solution

Sustaero is building large-scale domestic SAF capacity using sustainably harvested wood waste processed through its SOAR™ technology.

By converting forest residues into certified drop-in jet fuel, Sustaero enables airlines to reduce emissions without modifying aircraft or infrastructure. Facilities will be deployed on former pulp-and-paper sites, repurposing existing infrastructure and leveraging Canada's renewable energy and forestry resources. This creates a secure, low-carbon SAF supply while reducing reliance on imported fossil fuels.

LOCATION: BRITISH COLUMBIA
CEO: KEITH GILLARD

Impact

92%
lifecycle emissions reduction vs. fossil jet fuel

97%
carbon utilization rate in wood waste

1Billion
litres/year production capacity

TERSA EARTH

CLEANING TOXIC MINE WASTE WHILE RECOVERING VALUABLE CRITICAL METALS.

Tersa Earth was founded to transform legacy mining waste from environmental liability into a source of critical minerals and clean water.

Based in Vancouver, the team applies biotechnology to reimagine mining remediation. Their core innovation, TersaClean™, uses microbial fuel cells and bioprocesses to treat acid rock drainage, recover metals, and restore ecosystems.

Tersa's vision is to convert tailings ponds from long-term hazards into revitalized land, water, and economic opportunity.

LOCATION: BRITISH COLUMBIA
CEO: BARINDER RASODE

Problem

The mining industry generates vast volumes of tailings and acid rock drainage (ARD), creating risks such as heavy-metal leaching, groundwater contamination, and long-term community liabilities[56].

Traditional remediation methods are costly and energy-intensive, and often fail to recover valuable metals still locked in waste streams[57].

At the same time, global demand for critical minerals for batteries and electrification is rapidly increasing[58], placing additional pressure on virgin ore extraction and ecosystems[59].

The result is a dual challenge: hazardous legacy waste and growing environmental strain from new mining.

Solution

Tersa Earth's solution, TersaClean™, is a microbial-based remediation and metal-recovery platform.

Using bacteria in microbial fuel cells, the system extracts valuable metals, such as copper, nickel, and cobalt, from tailings and acid rock drainage without harsh chemicals, high energy input, or large volumes of water.

Recovered metals become usable resources, and treated water is neutralized for safe discharge or reuse. The modular, containerized system scales to legacy or active mine sites, turning waste into value while helping close environmental liabilities.

Impact

99%
metal recovery

100%
elimination of acid rock drainage (ARD) risks

40%
less GHG emissions vs. lime/chemical baseline

WAFR TECHNOLOGIES

REINVENTING DATA CENTERS WITH WATER-FREE, ULTRA-EFFICIENT COOLING.

Wafr Technologies was founded to tackle a rapidly growing climate challenge: powering AI and high-performance computing without overwhelming grids or increasing emissions.

Built by experts in thermal engineering and clean energy, Wafr developed a breakthrough passive cooling system that dramatically reduces data center energy use—without water or complex mechanical systems.

Today, Wafr partners with enterprises and infrastructure developers to build next-generation AI data centers where performance and sustainability go hand in hand.

LOCATION: BRITISH COLUMBIA
CEO: BIKRAM SINGH
CFO: DARRELL KOPKE

Problem

AI and high-density computing are driving rapid growth in data center energy demand[60].

Cooling systems account for a significant share of this electricity use, requiring extensive mechanical infrastructure and operating costs[61].

Globally, data centers consume more power than many countries, with emissions rising as AI adoption accelerates[62].

Conventional cooling relies on water-intensive evaporative systems or energy-heavy chillers[61], creating sustainability risks amid water scarcity and grid strain[63]. Without new approaches, data centers could become one of the fastest-growing sources of infrastructure emissions[60,62].

Solution

Wafr Technologies delivers a proprietary passive cooling system that eliminates water, compressors, and complex chillers—reducing cooling loads by up to 80% and significantly lowering overall data center energy use. Integrated into full-stack solutions that include site design, infrastructure integration, and clean-energy deployment, Wafr enables AI-ready facilities that operate at lower cost and dramatically reduced emissions.

Working across both new builds and retrofits, Wafr helps enterprises modernize existing facilities or design next-generation, sustainable data centers from the ground up.

Impact

80%
cooling load reduction

40–50%
total electrical load reduction

>90%
reduction in water consumption

EARTH TECH ADAPT

BUILDING THE TECHNOLOGIES THAT PROTECT COMMUNITIES IN A CHANGING CLIMATE

Climate mitigation alone cannot shield Canada from accelerating climate impacts. Even as emissions reduction continues, communities are already facing historic wildfires, floods, droughts, infrastructure strain, and economic disruption[63,64]. Adaptation is no longer optional, it is essential to protecting lives and local economies.

Climate impacts in Canada are intensifying faster than the global average[63], placing mounting pressure on infrastructure and emergency systems. A landmark FCM–IBC report estimates that avoiding the worst outcomes will require $5.3 billion annually in adaptation investment, 0.26% of GDP, with every $1 spent on resilience preventing $6 in future losses[65]. Yet despite this strong economic case, adaptation remains chronically underfunded and overlooked[66].

Adaptation ventures face barriers similar to, often more entrenched than, those in mitigation. Many struggle to secure early adopters or navigate procurement systems built for legacy infrastructure rather than climate-risk modelling, early-warning systems, or nature-based solutions[67]. The "pilot-to-scale" gap is especially pronounced in adaptation, where technologies that could prevent major losses stall due to fragmented, risk-averse markets[68].

These challenges are particularly acute in rural, remote, and Indigenous communities, which face disproportionate climate exposure and limited access to capital and capacity[69]. Earth Tech: Adapt was created to address these systemic gaps. By advancing innovations in wildfire management, flood forecasting, water security, heat resilience, nature-based infrastructure, climate-risk analytics, and emergency preparedness, Earth Tech: Adapt ensures Canada's most promising solutions receive the support needed to scale and deploy.

Earth Tech: Adapt identifies and accelerates climate ventures that strengthen resilience, reduce climate risk, and help communities prepare for and withstand the impacts of a destabilizing climate system.

Through philanthropic funding, technical expertise, mentorship, market support, and partnerships with municipalities, Indigenous Nations, utilities, insurers, and industry, the program de-risks high-impact adaptation technologies at critical moments.

Canada cannot safeguard its people, infrastructure, or ecosystems without rapidly expanding access to adaptation technologies. Through Earth Tech: Adapt, Foresight Canada and SI Canada are building the national infrastructure needed to strengthen resilience across every region, ensuring that the innovators working to protect our communities don't just emerge, but scale to meet the urgency of the moment.

MEET THE VENTURES BUILDING THE TECHNOLOGIES THAT WILL SHAPE A SAFER, MORE RESILIENT FUTURE—SOLUTIONS DESIGNED TO HELP US SURVIVE AND THRIVE WITHIN A CHANGING CLIMATE.

BAYES STUDIO

STOPPING WILDFIRES BEFORE THEY BECOME CLIMATE DISASTERS.

Bayes Studio was founded to turn wildfire detection from reactive response into real-time climate intelligence. As fires grow hotter and more unpredictable, early detection can mean the difference between containment and megafire. Developed by technologists and wildfire specialists at UBC, Bayes combines ground sensors, autonomous UAVs, and AI analytics to detect ignitions at the spark stage—often within seconds.

Their mission is to help communities, industries, and ecosystems prevent catastrophic losses through continuous, intelligent wildfire monitoring.

LOCATION: BRITISH COLUMBIA
CEO: HOSSEIN RAHIMI
COO: MARYAM PARIZI

BAYES STUDIO INC.

Problem

Wildfires have become one of Canada's most significant climate threats[70]. The 2023 season burned millions of hectares[71], generated record-breaking emissions[72], and forced widespread evacuations[73]. Yet detection systems remain slow and fragmented: satellites can miss early ignitions[74], lookout coverage is limited[75], and many high-risk sites lack continuous monitoring[76].

By the time smoke is visible, fires are often beyond low-cost suppression[77]. Without rapid, automated detection, wildfire impacts will continue to escalate[78].

Solution

Bayes Studio delivers an integrated, real-time wildfire intelligence platform designed to detect fires at the spark stage, before they escalate into megafires.

The system combines ground-based sensor networks providing 24/7 monitoring, autonomous UAV coverage for wide-area and remote surveillance, and edge-and-cloud AI that fuses sensor data with satellite imagery, weather patterns, and fuel conditions.

This layered approach enables early detection of smouldering ignitions, predicts likely fire spread, and feeds clear alerts directly into existing emergency and operational systems. By replacing fragmented, reactive monitoring with continuous, intelligent surveillance, Bayes transforms wildfire management into a preventative, data-driven capability.

Impact

40%
Wild fire emissions reduced

120M tonnes
CO_2 avoided each year

6300%
return on investment for every $1 spent

CRWN.ai

PREVENTING TRANSMISSION LINE SPARKS FROM BECOMING MEGAFIRES.

CRWN.ai was founded with a clear mission: stop wildfires before the first spark. As climate-driven fire seasons intensify, utilities face mounting pressure to prevent ignitions linked to aging or weather-stressed transmission assets.

Traditional monitoring detects problems only after visible damage occurs, often too late. By combining electrical engineering, AI, and IoT sensing, CRWN.ai has built a predictive wildfire-prevention platform for powerline infrastructure, helping utilities detect early failure signals, intervene sooner, and protect communities and ecosystems from catastrophic fires.

LOCATION: BRITISH COLUMBIA
PRESIDENT AND CEO: ERIC MILLER
CO-FOUNDER & HEAD OF PRODUCT: BRITTANY COURVOISIER-NICOL
CO-FOUNDER & HEAD OF OPERATIONS: DAVID LOYDEN

CRWN.ai

Problem

Wildfires are increasing in scale and cost[79], and electrical infrastructure is a leading source of human-caused ignitions in both Canada and the United States[80].

Utilities lack continuous, asset-level visibility into wildfire risk, while early warning signs—such as insulator tracking and partial discharge—are often undetectable through conventional inspections[81].

By the time visible damage or smoke appears, ignition has frequently already occurred[82].

Aging infrastructure, more extreme weather, and rising grid loads intensify the threat[83], leaving utilities reliant on reactive approaches that struggle to keep pace with modern wildfire risk—putting communities and ecosystems at growing danger[84].

Solution

CRWN.ai delivers a pre-spark detection system that continuously monitors transmission infrastructure and identifies ignition risk at the individual pole level. Pole-mounted ultrasonic and RF sensors capture early electrical signatures—such as tracking and discharge—that are invisible to traditional inspections.

AI models, developed with Powertech Labs and validated through 100+ field deployments, analyze data in real time to pinpoint the exact asset at risk before visible damage or ignition occurs. Unlike periodic patrols or satellite scans, CRWN.ai provides always-on, asset-level visibility that enables precise, cost-effective intervention.

By detecting failures before a spark becomes a fire, CRWN.ai shifts wildfire management from reactive suppression to predictive prevention—protecting communities, infrastructure, and ecosystems.

Impact

600K–1.2M
tonnes GHG emissions avoided - by preventing one 10K acre wildfire

70%
of ignition-prone insulators detected early, with fewer evacuations and community disruptions

eOCEANS

TURNING REAL-TIME ECOSYSTEM DATA INTO ACTION FOR NATURE AND CLIMATE.

eOceans was founded on a transformative idea: protecting marine ecosystems requires real-time, auditable data at scale. Traditional tools—spreadsheets, manual logs, and disconnected GIS systems—are too slow and fragmented to keep pace with accelerating environmental change.

Built by ocean scientists and technologists, eOceans developed an integrated data platform that connects field observations, sensor inputs, and ecological indicators into a unified system, enabling faster decisions and measurable conservation impact.

As part of a growing wave of ocean innovation in Canada and globally, eOceans harnesses digital tools and emerging technologies to support ecosystem protection and sustainable blue economies.

Problem

The health of the world's oceans is deteriorating rapidly due to climate change, pollution, overfishing, and habitat loss[85]. Yet monitoring systems remain fragmented and slow, limiting real-time understanding and response[86].

Researchers often spend significant time cleaning and reconciling data instead of acting on it[87], while conservation and policy decisions are frequently made without access to timely, trusted data streams[88]. This gap weakens climate adaptation, ecosystem protection, and sustainable ocean management[89].

LOCATION: NOVA SCOTIA
CEO: CHRISTINE WARD-PAIGE

Solution

eOceans provides a patent-pending, end-to-end data platform that unifies collection, integration, analysis, and reporting of ecological information.

Through a mobile app and centralized dashboard, field teams can capture observations offline and seamlessly sync data across projects, while automated processing and visualization eliminate manual bottlenecks.

By replacing fragmented tools—spreadsheets, hotlines, and disconnected dashboards—eOceans delivers standardized, traceable data streams from people and sensors across marine environments. Near real-time insights enable researchers, managers, and policymakers to make faster, evidence-based decisions.

Impact

1Billion+
ecological data combinations processed

Near-real-time environmental insights

Automated biodiversity and threat tracking

FLUX FORECAST By Foundry Spatial

TURNING REAL-TIME ECOSYSTEM DATA INTO ACTION FOR NATURE AND CLIMATE.

Flux Forecast was created by Foundry Spatial, a team working for over a decade at the intersection of science and technology to protect infrastructure and ecosystems. After the devastating 2021 atmospheric river in British Columbia exposed gaps in early-warning systems, the team shifted focus to building a solution that gives operators meaningful lead time before extreme weather hits.

Launched in 2023, Flux Forecast is a hyper-local, probabilistic weather-intelligence platform that helps infrastructure managers act before conditions become dangerous. It is now trusted across North America by governments, utilities, and industry to reduce climate-driven risk.

LOCATION: BRITISH COLUMBIA
CEO: BEN KERR

Problem

Extreme weather is becoming more frequent and severe[90], yet many infrastructure operators remain reactive. Traditional alerts are often broad or delayed, offering limited guidance for complex operational decisions[91]. Teams managing pipelines, bridges, and municipal systems may receive warnings only after precipitation begins[92], increasing exposure to infrastructure failures and economic losses[93].

Without site-specific forecasts tied to engineering thresholds, organizations cannot effectively prepare for escalating climate risks[94].

Solution

Flux Forecast delivers hyper-local, seven-day probabilistic weather intelligence that helps operators act before extreme conditions threaten assets.

Without on-site sensors, it provides forecasts tailored to specific locations and engineering thresholds, such as pipeline crossings, bridges, and sewer systems, translating weather data into clear operational guidance.

Instead of reacting to storms, organizations can preposition crews and secure vulnerable infrastructure days in advance.

Across North America, Flux Forecast converts raw weather data into actionable insights that protect infrastructure and ecosystems from rising climate risks.

Impact

30–50%
reduction in flood damages

$3–8 Billion
in annual avoided losses

80–150k Tonnes
CO_2e avoided per $1B prevented reconstruction

GEOSAPIENS

MAPPING CLIMATE RISK SO ASSETS SURVIVE WHAT'S COMING.

Geosapiens was founded with a clear mission: to transform complex climate-risk data into actionable intelligence that helps organizations protect people, infrastructure, and financial assets. Built on more than a decade of Canadian climate-modeling research, the company has become a trusted partner to insurers, financial institutions, governments, and industry leaders seeking credible, high-resolution insights into emerging climate risks.

Their work sits at the intersection of science, technology, and decision support—making climate uncertainty something organizations can quantify, manage, and prepare for with confidence.

LOCATION: QUEBEC
CEO: HACHEM AGILI

GEOSAPIENS

Problem

As climate risks intensify, organizations face growing exposure to floods, wildfires, and extreme weather[95], yet available risk tools are often fragmented or too coarse for operational and regulatory needs[96]. Insurers and financial institutions must now comply with expanding climate-disclosure requirements[97], while municipalities and utilities are expected to safeguard assets against escalating hazards[98]. However, many models lack the localized precision and scenario flexibility required for proactive planning[99].

This widening gap between climate threat and actionable insight increases the risk of financial loss, operational disruption, and regulatory exposure[100].

Solution

Geosapiens delivers a climate-risk intelligence platform that converts complex environmental data into actionable insight. It provides high-resolution assessments for major flood types and AI-powered, property-level wildfire risk modeling using dozens of climatic and environmental variables.

Through API integration, visualization portals, and ready-to-use datasets, Geosapiens embeds directly into organizational workflows. By translating climate data into financial and operational intelligence, the platform enables insurers, governments, and businesses to anticipate hazards and strengthen resilience.

Impact

77+
variables powering national wildfire predictions

✓
Robust financial modelling and loss estimation

✓
Dynamic flood mapping for municipalities and infrastructure owners

ORCA WATER

MAKING EVERY DROP OF WATER VISIBLE, VALUABLE, AND CONSERVED.

Orca Water was founded on a simple principle: you can't conserve what you can't measure.

As global water stress intensifies, with the UN projecting 75% of the world's population could face water scarcity within decades[101], building water use remains largely invisible and unmanaged.

Orca developed a non-invasive submetering and leak-detection system that brings real-time water intelligence to any building. By revealing where water is used or lost, Orca helps owners and residents conserve water, reduce damage, cut emissions, and strengthen building resilience—ensuring every litre counts.

orca

Problem

Water security is becoming a critical global challenge, with up to 75% of the world's population projected to face water stress in coming decades[102]. Yet in multi-family buildings—major water users—over 90% lack individual metering, leading to excess consumption and rising costs[103].

Leaks further compound the issue: water damage is the leading source of property-insurance claims[104], and undetected leaks can result in losses exceeding $25,000 and significant water waste[105].

Without real-time visibility into usage and loss, buildings cannot effectively control costs or conserve water. Orca Water was created to close this gap.

Solution

Orca Water delivers a scalable platform combining real-time submetering, leak detection, and analytics in one system. Its non-invasive ultrasonic sensors clip onto pipes without construction or downtime, providing instant visibility into water use and flow anomalies.

The platform enables accurate billing, turning utilities into a recoverable expense while typically reducing tenant consumption by 15–30%. Early leak detection prevents costly damage, improves NOI, and supports conservation and ESG goals.

LOCATION: QUEBEC

CEO: KERRY CHIN

Impact

$93k
annual utility recoveries per 100-unit building

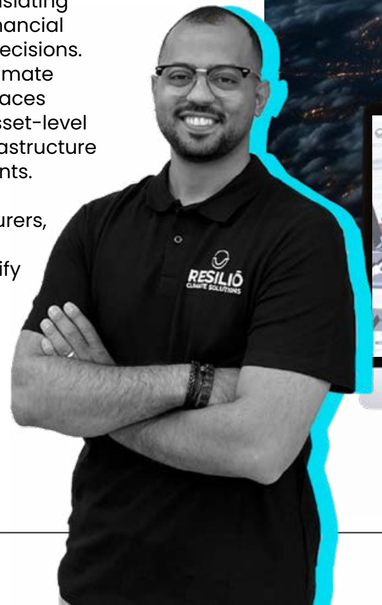
5Tonnes
5 tonnes CO_2e avoided annually per 100-unit building with reduced hot water use

5000+m³
Water saved per building annually

RESILIŌ CLIMATE SOLUTIONS

Resiliō Climate Solutions was founded to solve a key resilience gap: translating climate hazard data into clear financial risk and actionable adaptation decisions. Built by experts in engineering, climate science, and AI, the platform replaces static risk maps with dynamic, asset-level intelligence that reflects how infrastructure performs during real climate events.

Resiliō enables asset owners, insurers, and investors to assess risk in minutes—not months—and identify the most cost-effective path to long-term resilience.



LOCATION: ONTARIO
CEO: MOUSTAFA NAIEM

RESILIOCS INTELLIGENCE

Problem

Climate risk is now a major threats to physical assets and portfolios[106], yet many organizations still rely on coarse exposure maps that do not quantify asset-level loss[107].

Traditional assessments are slow and costly[108], limiting insurers' underwriting precision and investors' ability to evaluate long-term resilience[109]. Engineering studies can take months and cost tens of thousands per asset, making portfolio-scale planning impractical[110].

Without scalable, financially grounded climate intelligence, organizations face mispriced risk and rising losses[111].

Solution

Resiliō provides engineering-grade, asset-level climate risk intelligence through an AI platform that simulates physical damage, system failures, and cascading disruptions across entire portfolios. Rather than showing exposure alone, it quantifies loss estimates, downtime, repair costs, and the ROI of adaptation actions using digital twins and multi-hazard modeling—delivering results in minutes.

Each recommendation includes projected loss reduction and payback, turning resilience into a financial strategy. By reducing assessment time and cost by over 70%, Resiliō enables scalable, portfolio-wide climate Intelligence for asset owners, insurers, and investors.

Impact

87%
Prediction accuracy

3Billion
CAD projected savings

350%
ROI on Adaptation Measures

SPORALIS

HEALING CONTAMINATED LAND WITH THE POWER OF FUNGI.

Sporalis is reimagining how industries restore damaged land in a world increasingly shaped by climate instability. As floods, fires, and extreme weather accelerate the spread and mobility of contaminants, traditional remediation approaches are becoming too carbon-intensive, too costly, and too slow to support long-term resilience. Sporalis was founded on a different belief—that adaptation starts with the ground beneath our feet.

By harnessing advanced fungal systems, Sporalis brings the healing power of biology to industrial contamination, restoring soil function, improving ecological integrity, and building landscapes capable of withstanding the climate shocks ahead.

LOCATION: BRITISH COLUMBIA
CEO: MARIE-EVE ARSENEAULT

Problem

Industrial sites across North America face a growing remediation challenge, with many legacy methods remaining expensive and carbon-intensive[112].

Excavation relocates contamination and increases transport risk[113], while thermal treatment can emit up to 70 kg CO_2 per cubic metre of soil[114]. Chemical treatments often degrade soil biology, weakening carbon storage and ecosystem function[115].

As climate change intensifies rainfall, wildfire disturbance, and permafrost thaw[116], degraded soils become more vulnerable to erosion and contaminant mobility[117]. Remediation approaches that fail to restore ecological function can undermine long-term climate resilience[118].

Solution

Sporalis replaces high-carbon remediation with mycoremediation, a biology-driven approach using specialized fungi to break down contaminants such as Total Petroleum Hydrocarbons (TPH), Polycyclic Aromatic Hydrocarbons (PAHs), and certain Per- and Polyfluoroalkyl Substances (PFAS) at a molecular level.

Unlike conventional methods, Sporalis treats contamination on-site, reducing hauling and preserving soil structure.

As pollutants degrade, fungal networks help restore microbial life and ecological function—shifting remediation from extractive to regenerative. The result is healthier, more stable soils that better retain water and resist erosion, strengthening climate resilience.

Sporalis offers a low-carbon, cost-effective pathway that transforms environmental liability into long-term resilience.

Impact

50–70%
reduction in petroleum hydrocarbons (TPH)

37%
reduction in phytotoxicity

80%
Up to 80% lower CO_2 emissions vs. thermal treatment

XATOMS

DESIGNING AI-ENGINEERED MATERIALS THAT CLEAN THE WORLD'S WATER.

LOCATION: BRITISH COLUMBIA
CO-FOUNDER AND CEO: DIANA VIRGOVICOVA
CO-FOUNDER & CTO: KEREM TOPAL ISMAIL OGLOU
COO: SHIRLEY ZHONG

Xatoms was founded to address a growing climate adaptation challenge: contaminated water under increasing pressure from droughts, floods, and extreme weather. The company combines AI, quantum chemistry, and solar-powered photocatalysis to rapidly develop materials that break down pollutants in minutes rather than hours.

Moving quickly from lab to field deployment across agriculture, textiles, mining, and river systems, Xatoms has identified dozens of high-performance, patent-pending photocatalysts designed for fast, low-energy, chemical-free water purification—turning wastewater into a resilient resource.

Xatoms purifies water using light

Problem

Climate change is intensifying global water insecurity[119]. Over 80% of industrial wastewater is discharged untreated[120], contributing to hundreds of billions of dollars in annual economic losses[121].

Emerging contaminants—including Per- and Polyfluoroalkyl Substances (PFAS), industrial dyes, pesticides, and 6PPD-quinone—are rising rapidly, with hundreds identified in recent years[122].

Conventional treatment systems often rely on high energy use and harsh chemicals, making them costly and vulnerable to climate stressors such as drought and extreme storms[123]. As water scarcity grows, industries need decentralized, low-energy solutions that keep water safe and usable in a changing climate[124]. Xatoms was built to address this gap.

Solution

Xatoms delivers a climate-adaptive water treatment technology powered by visible light, requiring no added chemicals, external power, or direct CO_2 emissions. Using AI and quantum chemistry, the team built a solar-photocatalysis dataset and discovery engine that identifies new materials far faster than traditional methods, enabling rapid development of photocatalysts optimized for industrial wastewater.

These materials break down dyes, pathogens, pesticides, and other contaminants on-site, supporting low-energy purification and water reuse. Deployments across agriculture, textiles, mining, and river systems show industries can reduce water stress, cut costs, and meet stricter regulations, turning wastewater treatment into a climate adaptation strategy.

Impact

ZERO added chemicals

ZERO CO_2 emissions

ZERO external power

Meet The Ventures

WHERE INNOVATION MEETS COMMUNITY, INDUSTRY, AND THE FUTURE OF CLIMATE SOLUTIONS

Earth Tech ventures aren't just building the technologies that will define our climate future — they're actively engaging with the people, organizations, and communities shaping it.

Throughout 2025–2026, you'll have the opportunity to meet founders, explore their technologies firsthand, and see how climate solutions come to life across Canada.

WHERE THEY'VE BEEN

Indigenous TECH CIRCLE

Indigenous Tech Circle

January 2026 — Vancouver, BC

At the Indigenous Tech Circle Conference in Vancouver, Earth Tech: 2050 sponsored FeX Energy, Grengine, and SUSTAERO to attend as panel speakers that were listeners rather than pitchers. The experience emphasized trust, humility, and co-designing solutions with communities, recognizing there is no one-size-fits-all approach to clean energy and fuels. Grounded in Elder-led openings and community-driven dialogue, the event reinforced that meaningful climate solutions must respect land, culture, and lived experience.

For each venture, it strengthened relationships and reshaped how they approach partnership and long-term resilience.

WHERE TO FIND THEM

Energy Influencers at the Global Energy Show

June 2026 — Calgary, AB

One of the world's largest energy and technology showcases, bringing together innovators across renewable energy, decarbonization, digitization, and industrial transformation.

Earth Tech ventures will feature in the cleantech and climate innovation pavilions, presenting technologies that reduce emissions, electrify operations, accelerate energy transition, and strengthen climate resilience across the sector.

Earth Tech is made possible by:

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DISCLAIMER

Information in this book was compiled between December 2025 and February 2026, and some details may have changed since publication. For the most current technical, operational, or investment information, please contact the ventures directly.

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