

Cleantech Ventures Fund I

PERFORMANCE REPORT 2022

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Message from the CEO and Managing Partner



A generational opportunity for energy transformation

I am pleased to provide our NGIF Capital Performance Reports for 2022. At NGIF Capital, we bring startups and their ideas from concept to commercialization. This particular report presents a summary of the results of Cleantech Ventures Fund I, the work done by our portfolio companies to date, and the effort to reduce emissions in Canada's gas industry.

Founded in 2021, NGIF Capital invests to make an impact in the gas industry. We now have offices in Montreal, Ottawa, and Calgary offering a unique hybrid financing platform of industry grants and venture capital investing that allows us to partner with cleantech founders. Our Industry Grants program has \$240MM in total eligible project value and our Cleantech Ventures Fund I portfolio companies have raised over \$200MM since we invested.

The NGIF Capital platform is dedicated to bringing cleantech innovation faster and further to the market for natural gas, hydrogen, and renewable natural gas. This platform includes an Industry Grants program to de-risk clean technology development through pilot projects and an Emissions Testing Centre program to validate groups of methane management startups. It also includes a venture fund, Cleantech Ventures Fund I, that invests in early-stage startups to accelerate product development and customer creation. In all cases, we are addressing the gas industry's desire to continue to improve the economic and environmental performance of gaseous energy.

Our core competency is to de-risk clean tech startups, help them get to market, and achieve commercial scale. We do this through our amazing team of 15 professionals speaking 14 languages with an average age of 38. The team has subject matter expertise in cleantech, venture capital, gas operations, law, engineering, and portfolio management. We have developed a proprietary and

global network of cleantech founders and startups, venture capital and private equity investors, as well as a government and policy ecosystem. Everyone on our team works with intent, continuous improvement, and driven by performance and results.

In a big picture context, environmental performance is one of the primary concerns for every government, corporation, and citizen around the globe. The demand for clean technologies is at an all-time high, and this demand is only going to increase over time. According to data collected by the Government of Canada, the global clean technology market exceeded \$2.5 trillion as of 2022. Renewable energy will play a vital role in the clean technology advancement however lowering the carbon intensity of natural gas and the low-cost production of hydrogen and renewable natural gas will also be at the forefront.

For the first time in history, we have seen meaningful government policies such as the Inflation Reduction Act and the Clean Technology Investment Tax Credit create substantial tailwinds to accelerate the commercialization of clean technology energy solutions. Our inventory of de-risking projects and portfolio of companies was constructed to bring cleantech solutions to the gas industry in methane emissions management, carbon capture utilization and storage, energy efficiency, hydrogen and RNG production, industrial water management, and software solutions.

At NGIF Capital, we are encouraged by our results to date and know there is still a lot of work to be done to advance innovation and build companies to increase the performance of our industry. As an industry itself, our strategic energy investors supply and distribute the world's lowest cost and emission natural gas molecule to Canada and the world to meet their energy needs. The demand for Canada's natural gas continues to increase and NGIF Capital will support this industry through cleantech innovation and building startups to bring solutions to market. Now more than ever, natural gas has a critical role to play in energy security and reliability.

John Adams

President and CEO
NGIF Capital

A 3D rendering of a molecular structure with several blue spheres connected by rods, set against a blurred blue background. The spheres have a textured, crystalline appearance.

About NGIF Capital

Who is NGIF Capital?

- NGIF Capital is a subsidiary of CGA Enterprises, a wholly-owned subsidiary of the Canadian Gas Association.
- We have offices in Ottawa, Calgary, and Montreal.
- We offer both grant and equity financing for startups with environmental performance solutions for natural gas, renewable natural gas, and hydrogen.
- We connect energy leaders with innovators in the space, scaling startups from concept to commercialization.
- We focus on technology validation, industrial demonstration, and customer creation.



NGIF Capital is an early-stage venture capital firm for the gaseous energy sector

NGIF Capital operates:

Industry Grants Program

\$ **22**_{MM}

Emissions Testing Centre Program

\$ **28**_{MM}

Cleantech Ventures Fund I

\$ **55**_{MM}



NGIF Capital

Unbridled growth

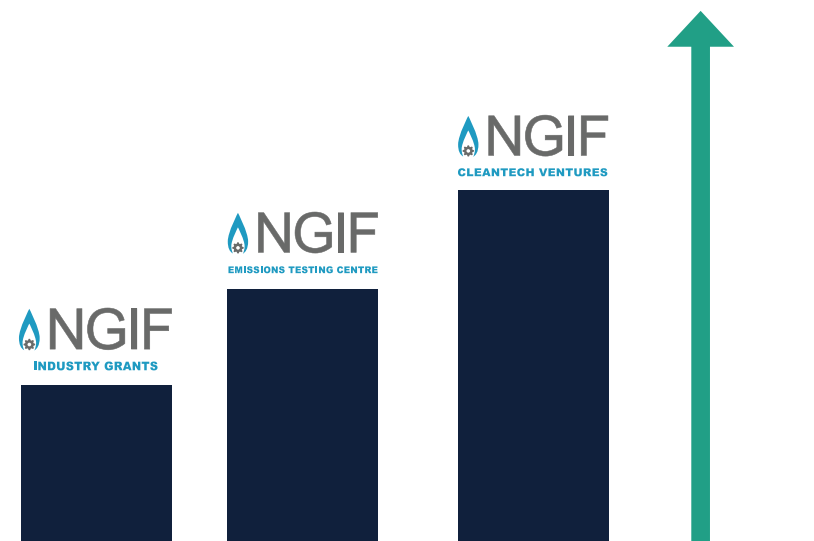
NGIF Capital was born out of a necessity to fill an innovation gap and accelerate the commercialization of cleantech solutions to lower emissions and increase the environmental performance of Canada’s gaseous energy industry. Energy transformation will require collaboration between scientists, industry, capital providers, and government. Our job is to ensure that cleantech startups accelerate their journey from concept to commercialization and into the hands of our energy industry partners.

The NGIF Capital platform offers unique financing models, plus technology demonstration and validation, to support startups along that journey. This includes:

- The Industry Grants program which provides non-dilutive funding to startup companies who are de-risking their technologies through field trials and pilot projects, providing that critical bridge to industry and government.
- The Emissions Testing Center program which provides startups both simulation testing in a university laboratory setting and live testing at a operating gas production system.
- Our Cleantech Ventures Fund I which invests in early-stage startup that have commercial or near commercial cleantech solutions for the gas sector and applications for other sectors.



The NGIF Capital integrated platform provides companies with the funding, support, and knowledge they need at every stage of their journey. ►



NGIF Capital Industry Leadership

NGIF Capital is unique as it brings energy industry leadership and industrial validation to its cleantech investments.

INDUSTRY GRANTS PROGRAM PARTICIPANTS

EMISSIONS TESTING CENTRE PROGRAM CONSORTIUM

CLEANTECH VENTURES FUND I LIMITED PARTNERS



Our Team

BRING TOGETHER BEST-IN-CLASS TALENT

NGIF Capital has built a team of 15 professionals speaking 14 languages with subject matter expertise in natural gas operations, venture capital, engineering, law, finance, communications and technology development.

BACK ROW

Jonathan Bryan

Technical Director, NGIF Emissions Testing Center

Ashutosh Pohary

Senior Manager, Contracts

Milan Karan

Lead Systems Architect & Administrator, NGIF Capital Corp

Ali Ali

Lead, Contracts and Partnerships, NGIF Industry Grants

Saad Sarfraz

Manager, Technology and Evaluations, NGIF Industry Grants

Akhil Abat

Venture Partner

Isaac Da Silva Aboo

Principal and Director, Legal Affairs

Michael Hebert

Principal, Venture Capital, NGIF Cleantech Ventures

Abdul Qadir

Director, Corporate Finance & Accounting

FRONT ROW

Ayoola Ajibare

Communications Coordinator, NGIF Capital Corp

Rosalby Guerrero-Mesia

Coordinator, Investment Process, NGIF Industry Grants

John Adams

Managing Partner, NGIF Cleantech Ventures

Daniely Molero

Executive Assistant to the President and CEO & Board Secretary

Glory Haruna

Accounting & Office Management Coordinator, NGIF Capital Corp

BY THE NUMBERS

15

Full time employees

38

Average age

14

Languages

15

Team members with university degrees



Meet our People: CEO and Managing Partner

John, President and CEO of NGIF Capital and Managing Partner of Cleantech Ventures, brings 30 years of experience in cleantech, executive management, building startups, venture capital, and finance.

He has led the development of NGIF Capital’s integrated investment platform growing startup companies from concept to commercialization. In addition, John holds several board positions including:

- Board and Audit and Finance Committee Member of the Clean Resource Innovation Network (CRIN)
- Board and Audit Committee Member for Tidewater Renewables (TSX: LCFS)
- Board and Observer seats on several Cleantech Ventures portfolio companies.

John earned his bachelor’s degree from the University of Toronto in Environmental Science, is a graduate of the Berkley Venture Capital Executive Program, and was awarded several distinctions such as World Biz Magazine’s 2021 Global Top 100 Innovation CEOs (#2) and Canada’s 2022 Clean50.



John Adams

President & CEO, NGIF Capital
Managing Partner, Cleantech Ventures
Ottawa, ON and Calgary, AB

“At NGIF Capital, we are leading a new way to think about venture capital. We’ve taken on early stage cleantech investing and re-imagined how strategic energy investors can work together as a group.

We have created a successful startup model that has broken new ground on validation, customer creation and product-market fit.

By putting our investors at the centre of what we do, we can increase the performance of an entire sector that will benefit society.”

Meet our People: Investment Team

Our investment team across North America is made up of **hand-picked, dedicated investment professionals**.

Collectively, they have decades of experience in cleantech, natural gas operations, venture capital, investment banking, engineering, law, and technology.



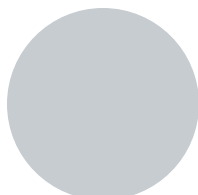
Akhil Abat
Venture Partner
Calgary, AB



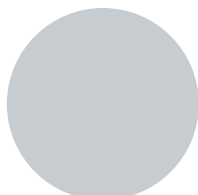
Michael Hebert
Principal
Calgary, AB



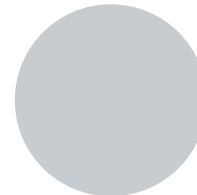
Isaac da Silva Aboo
Principal and Director,
Legal Affairs
Montreal, QC



New Hire
Analyst
Calgary, AB



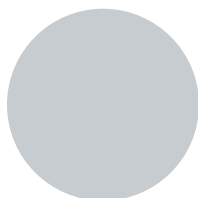
New Hire
Analyst
Location TBD



New Hire
Associate
Location TBD

Meet our People: Grants Team

Our grants team oversees the Industry Grants program and the Emissions Testing Centre program. Collectively, the team is comprised of technical experts in mechanical and chemical engineering, greenhouse gas qualification, technology evaluation, and project management.



New Hire

Director,
Industry Grants
Calgary, AB



Jonathan Bryan

Technical Director
Calgary, AB



Saad Sarfraz

Manager, Technology
Intake & Evaluation
Calgary, AB



Ashutosh Pohary

Senior Manager,
Contracts
Calgary, AB



Ali Ali

Lead, Contracts &
Partnerships
Calgary, AB



Samaneh Ashoori

Senior Analyst,
Technology Evaluation
Calgary, AB

Meet our People: Operations Team

Our operations team members represent the corporate, administrative, systems, and communications function of the organization.

Collectively they have experience in communications, finance, accounting, social media, executive assistance, and administrative matters.



Abdul Qadir

Director, Corporate
Finance and Accounting
Calgary, AB



Milan Karan

Lead Systems Architect
and Administrator
Calgary, AB



Rosalby Guerrero Messia

Coordinator,
Investment Process
Ottawa, ON



Ayoola Ajibare (Mat Leave)

Communications
Coordinator
Calgary, AB



Daniely Molero

Executive Assistant to
the President and CEO
and Board Secretary
Ottawa, ON



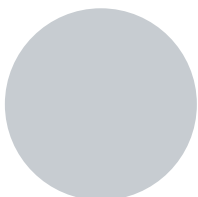
Glory Haruna

Accounting & Office
Management Coordinator
Calgary, AB



Dini Philip

Communications
Coordinator
Calgary, AB



New Hire

Social Media Coordinator
Calgary, AB



Ali Tarar

Manager,
Finance and Accounting
Calgary, AB

Cleantech Categories

NGIF Capital creates environmental performance with cleantech solutions that will reduce GHG emissions, criteria air contaminants, freshwater use, and land disturbance.

Our specific cleantech categories include:

- Hydrogen Production
- Renewable Natural Gas
- Carbon Capture, Utilization, and Storage
- Methane Mitigation
- Emissions Monitoring
- Energy Efficiency
- Heat and Power Generation
- Fuel Switching
- Natural Gas Production and Recovery
- Digital Transformation
- Transportation Mobility
- Value-Added Products
- Waste Heat Utilization
- Water Management
- Land Reclamation



Cleantech Ventures Fund I

Profiles & Results

CLEANTECH VENTURES FUND I

INVESTING AT
Seed to Series A

INVESTMENT AREAS
Emissions reduction

INITIAL CHEQUES BETWEEN

\$250_K – \$3_{MM}

INVESTING IN
Canada and USA

INVESTING SINCE
March 2021

FUND SIZE

\$55_{MM}

TOTAL JOBS
CREATED

86

Creating employment in our communities

Our portfolio companies have helped to create 86 jobs throughout Canada and the United States. These positions provide opportunities to 'move the needle' on cleantech commercialization.

BOARD POSITIONS

Including board and observer seats

11

TOTAL CAPITAL
RAISED

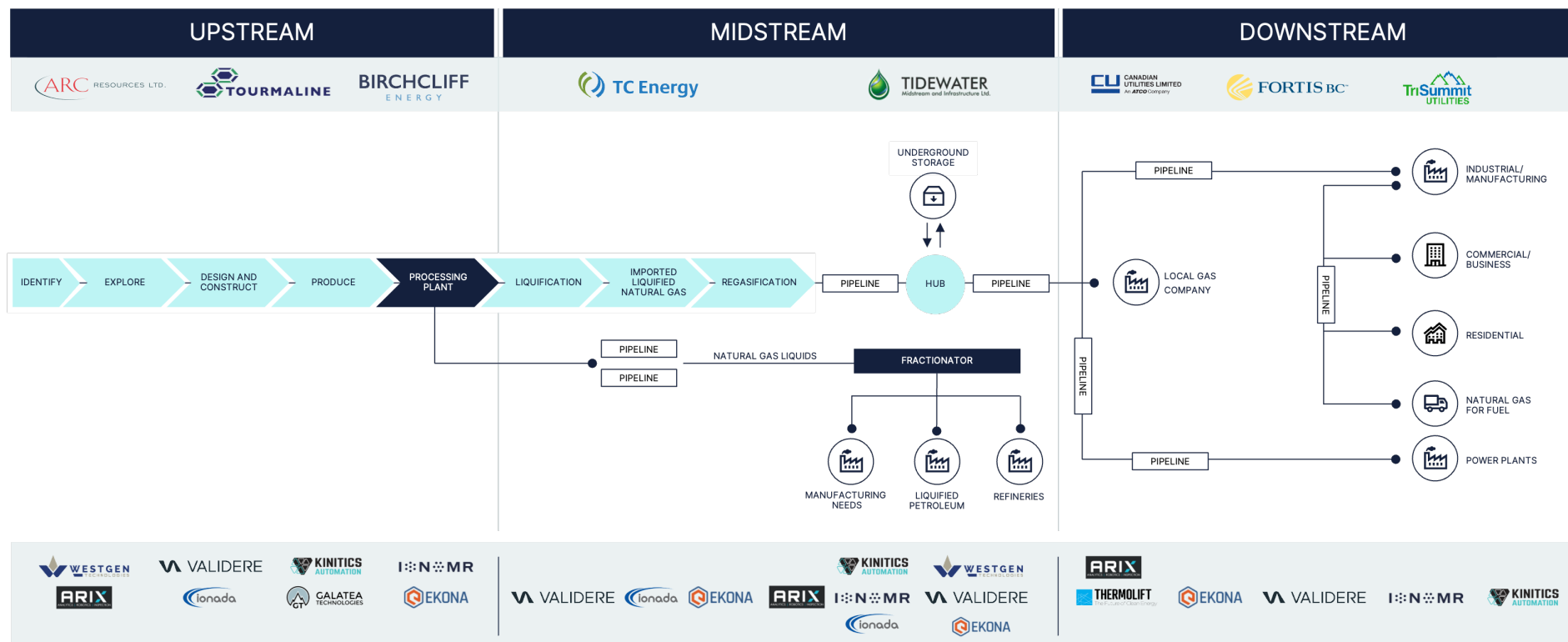
\$200_{MM}

Building a 2nd generation of cleantech startups

NGIF Cleantech Ventures Fund I portfolio companies have raised in excess of \$200MM in capital to scale their innovative cleantech solutions for the gaseous energy industry.

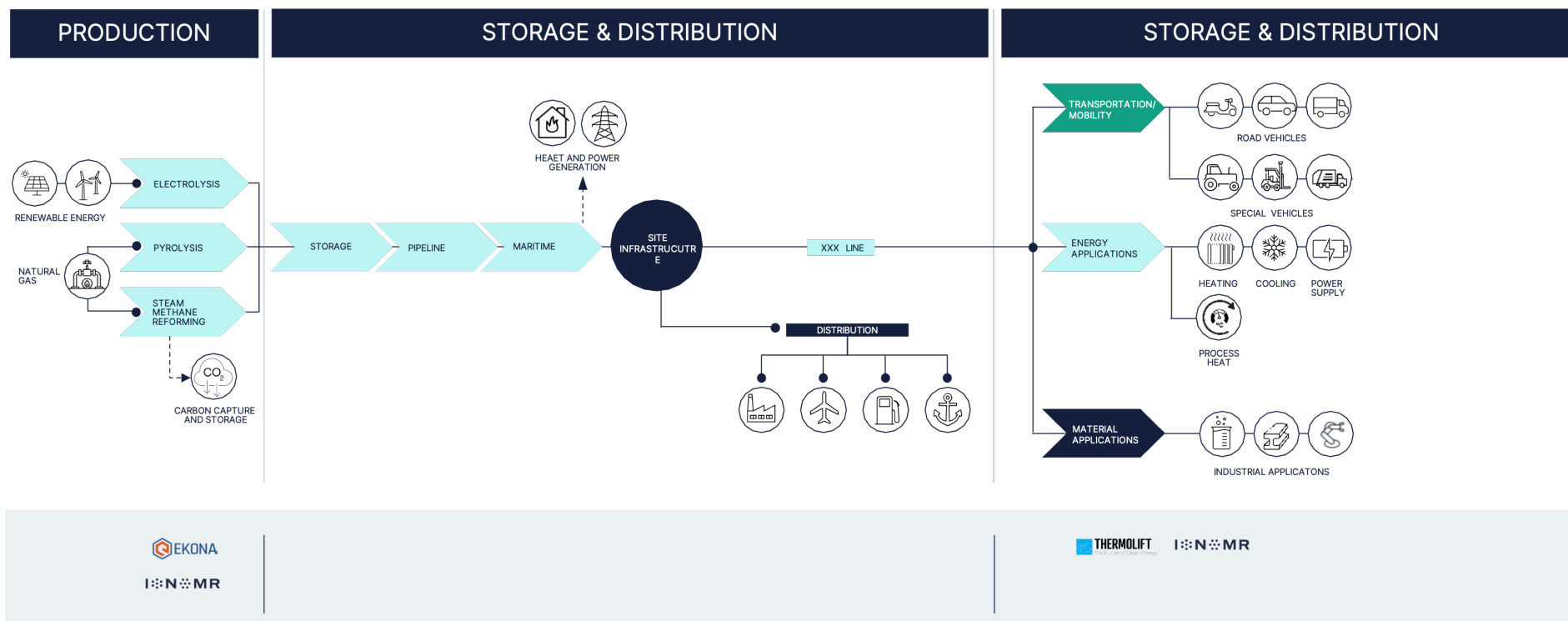
Value Chain Investments

CLEANTECH VENTURES FUND I | PORTFOLIO COMPANY VALUE CREATION FOR INDUSTRY











Hydrogen Value Chain

CLEANTECH VENTURES FUND I PORTFOLIO COMPANY VALUE CREATION FOR INDUSTRY



Limited Partners

CLEANTECH VENTURES FUND I

Company	Geography	Supply chain	Description
 TOURMALINE	Canada	Upstream	Energy company engaged in natural gas and crude oil acquisition, exploration, development, and production in the Western Canada Sedimentary Basin.
 ARC RESOURCES LTD.	Canada	Upstream	Energy company engaged in the acquisition, exploration, development, and production of conventional oil and natural gas in Western Canada.
 BIRCHCLIFF ENERGY	Canada	Upstream	Intermediate oil and gas company that explores for, develops, and produces natural gas, light oil, and natural gas liquids.
 TC Energy	Canada and the US	Midstream	TC Energy operates natural gas, oil, and power generation assets in Canada and the United States. The firm operates more than 60,000 miles of oil and gas pipelines.
 TIDEWATER Midstream and Infrastructure Ltd.	Canada	Midstream	Engaged in providing midstream infrastructure and a natural gas storage facility. It mainly focuses on the purchase, sale, and transportation of Natural Gas Liquids (NGLs).
 CANADIAN UTILITIES LIMITED An ATCO Company	Canada	Downstream	Offers gas, electric, and infrastructure solutions. Canadian Utilities is the largest subsidiary of ATCO, which operates natural gas, electricity, and logistical services.
 FORTIS BC	Canada	Downstream	Distributor of natural gas and electricity services intended to help reduce emissions in BC. FortisBC owns and operates approximately 48,000 km of natural gas transmission and distribution pipelines.
 TriSummit UTILITIES	Canada	Downstream	Provider of energy infrastructure services intended to provide clean and affordable energy. The company operates natural gas distribution utilities and renewable power generation assets.

Our Focus

SEED TO SERIES A ENERGY TECHNOLOGIES

For years, the natural gas sector had been ignored and largely marginalized to the fringes of the energy evolution. However, we at NGIF Capital see things differently. We see an opportunity to change the narrative around natural gas and implement cutting-edge technology solutions that lower emissions and improved the performance of this vital resource theme.

Cleantech Ventures Fund I's investment thesis is focused on the critical role that natural gas technologies will play in decarbonizing our economy. This scope extends to a variety of energy intensive industries with the potential for material GHG emissions reductions including:

- Heavy Industry, Artificial Intelligence/Machine Learning, Methane Detection, Carbon Management, Hydrogen, HVAC, Water, and Transportation.

Together these industries present an emissions reduction opportunity. It is the focus of Cleantech Ventures Fund I to make investments supporting a cleaner energy supply.



Our Methodology

CLEANTECH VENTURES FUND I

Cleantech Ventures Fund I has built its foundation on a commitment to scaling cleantech companies. Our vision for the future of cleantech is an energy mix that utilizes the abundance, performance, and safety of natural gas feedstock. To achieve our vision, we have developed a robust methodology to identify and invest in cleantech innovation.

- **Management team** – Our priority is investing in management teams first and then the companies. We actively seek partners with top-notch management backed by knowledgeable investors and advisors. We also demand the team has a significant ‘skin in the game’ conducive to long-term strategic fit. Only a purpose driven management team can reach its goal of emissions reduction and investment returns.
- **Product-market fit** – We invest in cutting-edge innovation and breakthrough technologies. These companies will often feature proprietary technology with a strong and defensible economic moat in the form of patents and intellectual property, a clear product-market fit evidenced by customer traction and/or demand, a well-designed product development roadmap, and a clear go-to market strategy.
- **Environmental performance** – We invest in clean technologies that advance environmental performance. Cleantech Ventures Fund I’s portfolio companies should have the potential to reach megatonne scale GHG emission reductions over the life of the fund.

Cleantech Ventures Fund I is committed to the industry and to partnering with entrepreneurs with cleantech solutions. We seek out technologies that increase the environmental performance of Canada’s gas sector. Our investment methodology extends to opportunities in the following areas of interest:

- Air/Fuel Systems
- Energy Efficiency
- Advanced Natural Gas Recovery
- CCUS
- Digital Transformation and Software
- Emissions Monitoring and Measurement
- Fuel Switching, Heat and Power Generation
- LNG and Micro-LNG, Methane Venting
- Flaring and Fugitive Emissions
- Renewable Natural Gas
- Hydrogen
- Transportation
- Value Added Products
- Water Management
- Land Reclamation/Reuse

What Our Investors Say

CLEANTECH VENTURES FUND I



Terry Anderson
President and CEO, ARC Resources

“The Canadian natural gas industry plays a significant role in creating a better life for Canadians. Canada is a leader in producing this important resource in the most responsible manner. ARC Resources Ltd. is excited to play an active role by participating in NGIF Cleantech Ventures, as continued investment in new and clean technology will play an important role in further reducing Canada’s GHG emissions and providing a competitive advantage for our sector.”

BIRCHCLIFF

Jeff Tonken
President and CEO, Birchcliff Energy

“We are proud to be a part of the new NGIF Cleantech Ventures. Birchcliff believes that innovation and technology are key to a strong natural gas industry in Western Canada and the whole of Canada. By being a part of this fund, we are supporting the development of new technologies that will help our industry to develop this vital natural resource in an even more responsible manner so that we can continue to deliver clean, affordable energy to the world.”



Roger Dall’Antonia
President and CEO, FortisBC

“Innovation is vital to Canada’s clean energy future. FortisBC is investing in new technologies through several initiatives including NGIF Cleantech Ventures, that promote energy efficiency and improving access to renewable gases through our existing infrastructure. These initiatives will help ensure cleaner, affordable energy for year to come.”



François Poirier
President and CEO, TC Energy

“Supporting clean innovation is a critical component to meeting global GHG emission reduction goals and to the overall success of our energy future. We are proud to partner with NGIF Cleantech Ventures and look forward to developing these opportunities while continuing to deliver safe, reliable energy.”

What Our Investors Say

CLEANTECH VENTURES FUND I



Rob Colcleugh
CEO, Tidewater Midstream and
Tidewater Renewables

“Tidewater is proud to be a founding investor in the NGIF Cleantech Ventures. This investment reflects our ongoing support of important initiatives in cleantech, particularly in the natural gas and hydrogen sectors. Investments such as this not only help our industry but assist in positioning Canada as a leader in clean energy.”



Jason Sharpe
President, Natural gas, ATCO

“Our investment and commitment to advancing the future of clean technologies, innovative opportunities and renewable energy sources is a fundamental part of our growth and success as a natural gas delivery provider [...]. With the continued evolution of the development of [NGIF Industry Grants] and now NGIF Cleantech Ventures, the future of natural gas as part of the Canada’s energy delivery system is an exciting one. I look forward to the ground-breaking discoveries I know will come from the work supported by this fund.”



Mike Rose
President, CEO, and Chairman,
Tourmaline Oil

“NGIF Cleantech Ventures will further support the ongoing effort by the full natural gas industry to produce continually lower methane emissions from drill bit to burner tip.”



Jared Green
President and CEO, TriSummit Utilities

“The team at NGIF Cleantech Ventures has tremendous experience developing and commercializing clean energy technologies for emission reductions. TriSummit’s executive leadership team is confident in NGIF Cleantech Ventures’ ability to create transformative value for the natural gas sector and help us meet our energy transition goals.”

The Future of Energy

NGIF CLEANTECH VENTURES PORTFOLIO FUND I COMPANIES

CV Fund I Portfolio



THERMOLIFT

ThermoLift is leveraging technology based on the Hofbauer Cycle to develop a natural gas heat pump that provides heating, air-conditioning, and water heating from a single appliance. ThermoLift's technology has the potential to revolutionize the HVAC space by providing a significant reduction in building costs, as well as associated reductions in greenhouse gas emissions.

"Energy use in buildings accounts for 18% of global GHG emissions. ThermoLift's technology can reduce HVAC energy use by up to 50%." ¹

INVESTMENT THESIS

The HVAC space is one of the largest contributors to GHG emissions globally, but it has proven very difficult to decarbonize. Incumbent technologies have stagnated and there is an immediate need for innovative turnkey solutions. ThermoLift's natural gas heat pump has the potential to drastically reduce the carbon intensity of this staple of modern-day life, and we are excited about their ability to disrupt the multibillion-dollar HVAC space.

IMPLICATIONS FOR THE NATURAL GAS VALUE CHAIN

ThermoLift's heat pump utilizes existing infrastructure to leverage low-carbon gaseous fuels such as natural gas, RNG, and hydrogen to decarbonize residential and commercial HVAC systems. This technological revolution provides a turnkey solution for millions of end users without the need for extensive retrofits.

(1) Climate Watch, the World Resources Institute (2020), Our World In Data.



INVESTMENT DATE

May 2021

ROUND

Series A

CO-INVESTORS

Euclidean Capital

BOARD SEAT

Observer

CV Fund I Portfolio IONOMR

IONOMR INNOVATIONS

Ionomr Innovations (Ionomr) is a developer of ion-exchange membranes and polymer product solutions. Ion-exchange membranes are critical components to many electrochemical applications including hydrogen production, zero-emissions vehicles, and synthetic fuel production from CO² capture and conversion processes.

“Ionomr’s game changing membrane products are poised to take advantage of near-term growth opportunities thanks to their high efficiency, durability, and cost-competitiveness.”

INVESTMENT THESIS

Ionomr is well positioned to become the market leader in ion-exchange membranes. The company’s patented process in conjunction with a wide range of OEM partnerships will allow for rapid market penetration and generate economies of scale that market competitors will be unable to match.

IMPLICATIONS FOR THE NATURAL GAS VALUE CHAIN

We believe that increased blue hydrogen production will benefit all members of the natural gas value chain. Ionomr’s revolutionary ion-exchange membranes provide critical exposure to multiple end use applications for hydrogen gas including and increased adoption and demand for hydrogen fuel cells, and synthetic fuels production.



INVESTMENT DATE

October 2021

ROUND

Series A

CO-INVESTORS

Shell Ventures, Finindus, Chevron Technology Ventures, Pallasite Ventures

BOARD SEAT

Yes

CV Fund I Portfolio



IONADA

Ionada is a Carbon Capture, Utilization, and Storage (CCUS) company that develops, manufactures, and markets exhaust gas cleaning systems. Ionada has developed membrane contactors, which are ideal for small and medium sized emitters with applications where space is limited. Ionada's modular units are capital efficient, and easily scaled up with additional units to provide bespoke on-site applications.

"Ionada is primed to dominate the carbon capture space for small and medium emitters through a novel membrane contactor decarbonization system."

INVESTMENT THESIS

Carbon pricing in Canada has increased by 300% since 2018, and it is expected to grow by 1,600% to \$170 per ton by 2030. 85% of emissions are attributed to small and medium emitters, which is why Ionada is targeting that market segment with its patented membrane contactor decarbonization system for applications < 200,000 tonnes per annum.

IMPLICATIONS FOR THE NATURAL GAS VALUE CHAIN

Ionada's containerized carbon capture solution can be deployed at various locations across the natural gas value chain including at remote well sites, compressor stations, and processing facilities. The flexibility of a solution created to specifically address the needs of small and medium sized emitters will be critical for natural gas industry participants to meet their emissions reductions objectives.



INVESTMENT DATE

November 2021

ROUND

Seed

CO-INVESTORS

Halliburton Labs

BOARD SEAT

Yes

CV Fund I Portfolio

EKONA



Ekona Power (Ekona) is a hydrogen technology developer that is pioneering a Pulse Methane Pyrolysis (PMP) platform to deliver low-carbon, low-cost, and scalable industrial hydrogen production. Ekona's patent pending PMP reactor process uses the principles of pulse-combustion and high-speed gas dynamics to dissociate feedstock methane thereby converting natural gas into industrial scale hydrogen.

"Ekona's PMP process could produce the lowest cost 'blue' hydrogen in the world." ²

INVESTMENT THESIS

Ekona's PMP reactor process puts them in the sweet spot 'Goldilocks' zone for hydrogen production. The pulse-combustion and high-speed gas dynamics allows Ekona to cheaply produce hydrogen at industrial scale while generating up to 90% fewer CO₂ emissions compared to traditional steam methane reforming. The proprietary reactor process also manages the carbon fouling issues that plague other pyrolysis platforms, which allows for greater reliability.

IMPLICATIONS FOR THE NATURAL GAS VALUE CHAIN

Ekona's PMP hydrogen production method utilizes natural gas as the feedstock, which provides increased demand for natural gas production. This breakthrough technology development ensures a robust demand for natural gas as a key input for the hydrogen economy.

(2) International Energy Administration, "hydrogen Production Costs Using Natural Gas in Selected Regions", 2018



INVESTMENT DATE

January 2022

ROUND

Series A

CO-INVESTORS

Baker Hughes, Mitsui, ConocoPhillips, TransAlta, Continental Resources, BDC Capital, and others

BOARD SEAT

Strategic Committee

CV Fund I Portfolio

GALATEA TECHNOLOGIES



Galatea Technologies (Galatea) has created a Software-as-a-Service (SaaS) platform that provides energy producers the ability to gather fluid measurements (tank levels) from various hardware, manual or API processes, calculate fill rates, and use predictive analytics to determine when the tank will reach full capacity. The platform then analyzes disposal market variables (transport cost, disposal pricing, wait time cost) to find the optimal vehicle route and disposal schedule while providing an automatically generated disposal ticket manifest.

“Waste disposal, and associated trucking, is one of the largest operating expenses (up to 40%+) facing upstream producers today.”³

INVESTMENT THESIS

North American oil and gas producers spent approximately USD\$41Bn annually on oilfield waste transportation and disposal. Disposing of wastewater is a complicated endeavor because each waste facility is engineered to only accept specific waste types. Managing this process creates unpredictability, lengthy wait times, limited available capacity, and increased hauling distances – all of which can increase costs and the environmental impact of the disposal of a single load of waste.

IMPLICATIONS FOR THE NATURAL GAS VALUE CHAIN

Galatea provides upstream producers with the ability to materially reduce OPEX, generate quantifiable and credible emissions reduction metrics, and create additional revenue streams by marketing unused or underused wastewater disposal facilities.

(3) Seven Generations Annual Report, 2018



INVESTMENT DATE

October 2021

ROUND

Seed

CO-INVESTORS

N/A

BOARD SEAT

Yes

CV Fund I Portfolio



KINITICS AUTOMATION

Kinitics Automation (Kinitics) is a developer of shape memory alloy linear actuators and piston pumps. These components perform critical functions for valve operation, pumping, pressing, and clamping across a range of applications. Kinitics' linear actuators offer compact size and light weight for a given force, and require less infrastructure compared to hydraulic units.

"Kinitics has developed a light, compact, and powerful product offering that will displace incumbent solutions for process control valves."

INVESTMENT THESIS

Kinitics is focusing on addressing pain points in several very large and well capitalized industries. Specifically, within the oil and gas sector, Kinitics units provide turn-key compliance with several AER and BCOGC (currently known as BC Energy regulator) regulatory mandates to reduce or eliminate gas venting from pneumatic devices. In addition to the energy industry, linear actuators and piston pumps have strong demand in the automotive, aerospace, and advanced manufacturing sectors, which ensures a robust and diverse serviceable addressable market.

IMPLICATIONS FOR THE NATURAL GAS VALUE CHAIN

Kinitics actuators can be incorporated into both greenfield projects and retrofitted into existing facilities. The primary benefit of this technology is to reduce or eliminate methane emissions from level control and pressure control devices at well sites.



INVESTMENT DATE

January 2022

ROUND

Pre-seed

CO-INVESTORS

N/A

BOARD SEAT

Yes

CV Fund I Portfolio VALIDERE

VALIDERE

Validere is a leading data and analytics SaaS provider that is digitally transforming the oil and gas supply chain to be more sustainable and efficient.

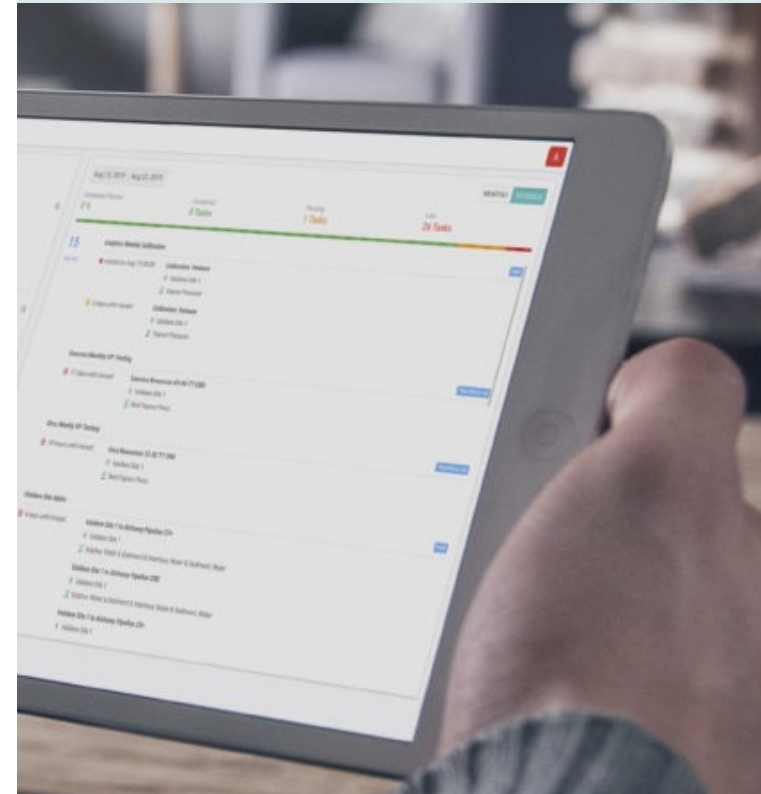
“Validere is building the first universal data layer for oil and gas. This data layer aggregates all available customer provided data into a complete, accurate, and auditable repository that allows the company’s customers to create a real-time digital fingerprint for each molecule that travels along the supply chain from producers to end users.”

INVESTMENT THESIS

Validere’s universal data layer is fast becoming the industry standard for ESG reporting. We believe this revolutionary technology offering is a critical step in commercializing certified responsibly sourced natural gas. This level of transparency is critically important to our limited partners because it allows them to receive social and financial recognition for their gargantuan efforts to lower the carbon intensity of the natural gas that flows through their assets.

IMPLICATIONS FOR THE NATURAL GAS VALUE CHAIN

Validere’s value proposition permeates the entire value chain and allows all natural gas industry participants to access third party certification and a system of record for methane intensity. This system of record allows stake holders to market the full value of their responsibly sourced Canadian gas and identify sources of emissions within the value chain.



INVESTMENT DATE

February 2022

ROUND

Series B

CO-INVESTORS

Blackrock, Mercuria, Wing VC, Greylock Partners

BOARD SEAT

Observer

CV Fund I Portfolio WESTGEN TECHNOLOGIES

WESTGEN TECHNOLOGIES

Westgen Technologies (Westgen) is a remote power generation supplier aiming to reduce development costs while improving environmental sustainability in the upstream oil and gas industry. Westgen is leading the way to enable certifiable zero emissions hydrocarbon production through its Engineered Power on Demand (EPOD) product. The EPOD product line utilizes a combination of natural gas generators, solar panels, and batteries to provide reliable and low emissions solutions for off-grid power, heating, and instrument air.

“EPOD is a proven solution which can eliminate up to 99.5% of methane emissions from pneumatic devices while reducing capital and operations costs, improving reliability for oil and gas producers.”

INVESTMENT THESIS

The issue of methane venting is widespread in the upstream oil and gas industry, and as such nearly every producer in the industry is looking for a solution. EPOD allows remote sites to utilize instrument air instead of instrument gas to actuate pneumatic devices, which essentially eliminates methane venting- and thus reducing the greenhouse gas emissions associated with this practice, in some cases by up to 99.5%.

IMPLICATIONS FOR THE NATURAL GAS VALUE CHAIN

Westgen provides upstream producers with a turnkey solution for methane venting from pneumatic devices. The EPOD product provides material cost savings, provides a measurable reduction in GHG emissions from pneumatic devices, and allows for immediate compliance with state, provincial, and federal regulations on methane venting.



INVESTMENT DATE

August 2022

ROUND

Series A

CO-INVESTORS

ARC Financial, Idea Well
Capital Partners

BOARD SEAT

No

CV Fund I Portfolio



ARIX TECHNOLOGIES

ARIX Technologies (ARIX) is a developer of semi-autonomous inspection robots and software analytics. The ARIX robot is the only one on the market that can drive semi-autonomously on insulated or vertical piping while traversing common field obstacles. The company's proprietary robot, sensor, and software package provides highly granular and continuous monitoring of pipeline corrosion. This powerful analytics package allows customers to not only detect but predict pipeline corrosion before a leak occurs.

"ARIX is set to transform the multibillion-dollar pipeline inspection business with a safer, faster, and more cost-effective method that provides superior data accuracy and interpretation."

INVESTMENT THESIS

ARIX's pipeline inspection robot and AI/ML based analytics platform are at the forefront of the Cleantech 2.0 revolution. This cutting-edge technology can be deployed across the natural gas value chain and is well positioned to capture significant market share in the USD\$8.7Bn pipeline inspection market.

IMPLICATIONS FOR THE NATURAL GAS VALUE CHAIN

The ARIX solution benefits participants across the natural gas value chain by detecting and predicting pipeline leaks before they occur. The level of highly granular, and accurate data reduces downtime as a result of unplanned outages, improves site reliability, and protects asset operators through enhanced workforce safety.



INVESTMENT DATE

November 2022

ROUND

Series A

CO-INVESTORS

Alley Robotics Ventures,
Benson Capital Partners,
EVOK, others

BOARD SEAT

Observer

Founder Summit 2022

BRINGING TOGETHER FOUNDERS AND OUR INVESTORS



NGIF CLEANTECH VENTURES

INAUGURAL FOUNDERS SUMMIT

JUNE 13 2022

Location: 906 8 Ave SW (Room 234)
U of C Ossevoien Campus
Time: 10:00am-9:00pm
Email: dmolero@ngif.ca to RSVP

CLEANTECH VENTURES



A large, stylized molecular structure composed of blue spheres and connecting rods, set against a light blue, textured background. The spheres have a metallic, reflective appearance.

Conclusion

EXAMINING THE ENVIRONMENTAL BENEFITS

Our Impact

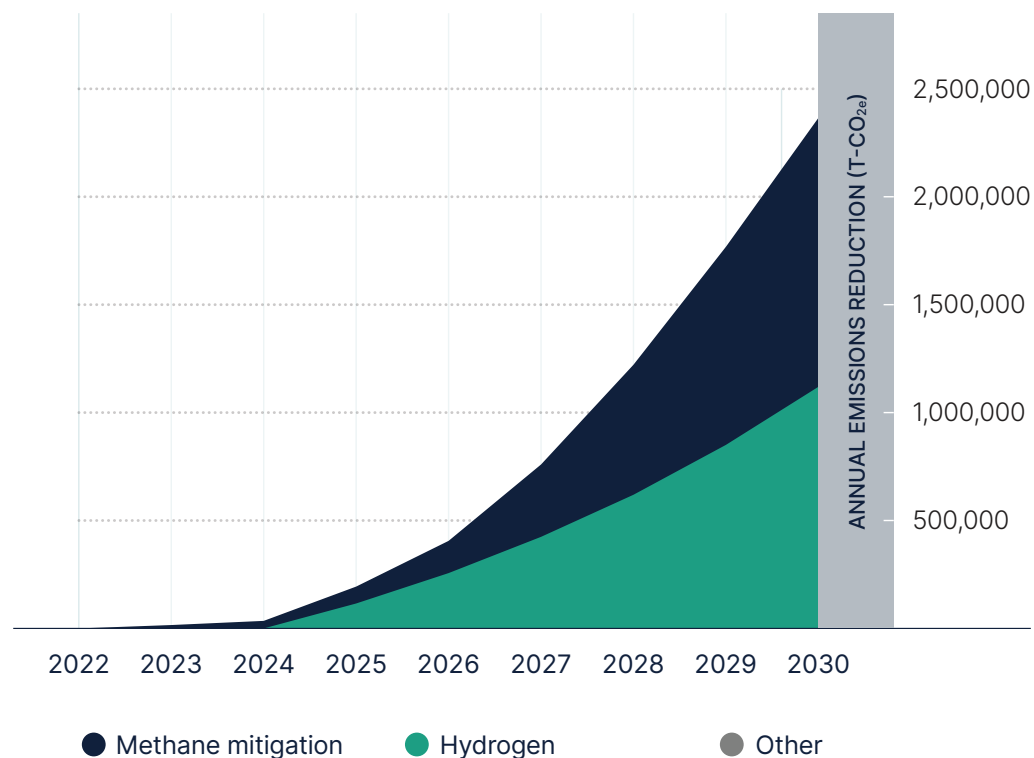
GHG EMISSIONS REDUCTIONS ACROSS THE FUND I PORTFOLIO

The goal of company-based GHG accounting is to quantify how much a startup will reduce emissions over a given time period. Emission reductions are calculated using a life-cycle model that accounts for emissions sources, sinks and reservoirs associated with production, transportation, and end-use processes.

The results below are for emissions projected from 2022 to 2030 for five of Cleantech Ventures Fund I's portfolio companies which have been third-party verified. These numbers are updated periodically as the market rollout information is refined.

The cumulative total GHG reduction by 2030 is forecasted at just over **6.8 mega-tonnes CO_{2e}**, which is equivalent to about 165,000 cars taken off-road.

The most significant reduction is expected to be from hydrogen followed by methane mitigation startups. Ekona, Kinitics, and Westgen make up the largest percentage of emissions reductions.



Conclusion

Cleantech Ventures Fund I has established itself as the premiere venture capital fund focused on emission reductions along the gaseous energy value chain. Our strategic model and investment thesis specifically for natural gas, hydrogen, and renewable natural gas is a first of kind investment fund for Canada and globally.

We have already begun to see the impact of our work in lowering emissions through our startup investments. We believe in our mandate to advance and accelerate cleantech solutions for our gas sector as it is a critical resource in the overall energy mix.

NGIF Capital would like to thank our limited partners, portfolio companies, staff, and ecosystem partners for their contribution to Cleantech Ventures Fund I.

If you have any questions about this report, please email info@ngif.ca

“With all the hype around new venture capital funds in climate tech, cleantech, ESG, and decarbonization, NGIF Capital’s Cleantech Ventures Fund I stands out as an investor that embraces natural gas as a primary fuel source of the past, present, and future.”

Questions?

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