



Impact and ESG Report 2022

SCALING IMPACTFUL SOLUTIONS

ABOUT THIS REPORT

The objective of this report is to present our annual progress towards our social and environmental targets and priorities. The portfolio companies' data presented in this report covers the 2022 fiscal year. GHG emissions calculations have been done by a third party, Oxia Initiative, and other providers in specific cases.

We acknowledge that Indigenous Peoples are the traditional guardians of our land. We are grateful to live and work in Canada and we are committed to learning about our shared past while pursuing an inclusive and respectful path toward a better future.

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Andrée-Lise Méthot, Founder & Managing Partner - Claude Vachet, Managing Partner

“Our mission is to empower entrepreneurs, investors and companies to scale innovative solutions to the major ecological challenges facing humanity”

As an impact investor and leading climatetech venture capital investment platform, we’re excited to share our 2022 Impact and ESG report. This report measures Cycle Capital Fund IV portfolio companies’ ESG profile and impact. It represents a pivotal data asset in our mission to empower entrepreneurs, investors, and companies to find innovative solutions to the major environmental challenges facing humanity.

With this report, we wish to transparently communicate our results, our progress, and questions about the methodology used to assess and monitor the progress and impact of our portfolio companies and fund. We are committed to sharing our journey with our ecosystem and hope that through that initiative we can inspire our industry.

2022 was an exceptional year for Cycle Capital with the launch of the Circular Innovation Fund in partnership with Demeter under the sponsorship of L’Oreal, the exits of ESS and Rhombus Energy Solutions, and the growth of our team.

2022 was also a decisive year for progress in measuring impact and ESG data in our portfolio companies. We are committed to increasing the integration of the work of the investment and impact teams. We have developed new tools while focusing on the materiality and value-added of our work for our portfolio companies.

We are pleased to note the growing mobilization of the entire ecosystem on ESG and impact issues. While this growing awareness is necessary, it reinforces our convictions: ESG and impact practices must be shared among peers, with as much transparency as possible, to progress together. Rigour is required to ensure that our work creates value-added and to put in place safeguards against greenwashing. It is our common duty to work together as efficiently as possible given the urgency of the situation.

In a context of increasing crises, the temptation is strong to become self-centered and only address extreme emergencies without focusing on the horizon.

We are facing a difficult economic situation, and it is, therefore, more important than ever to mobilize and maintain a high level of investment in climatetech technologies and continue to work towards addressing the climate emergency.

We are more committed than ever to continue helping dedicated entrepreneurs to scale up their projects, and we maintain our commitment to finding innovative solutions to the greatest challenge of our century.

Andrée-Lise and Claude

A LEADING CLIMATE TECH PLATFORM

Cycle Capital is an inclusive ally and partner providing the resources and expertise to make a positive impact on the world



Cycle Capital Fund I
Seed Fund Cycle C3E
Cycle Capital Fund III
Cycle Capital Fund IV
Circular Innovation Fund



Startup Accelerator +
Open Innovation engine



Ecosystem Hub



OUR VALUES

Integrity

We are honest and transparent in all our actions. We keep our promises and take full responsibility at all times. We're passionate about doing what's right, and we never compromise our values.

Diligence

We fulfill our obligations and execute our work with an exacting attention to detail and with utmost care.

Total commitment

We pursue our mission with dogged determination for the benefit of all our stakeholders. We are resourceful and resilient; marathon runners not sprinters.

CYCLE CAPITAL, ROOTED IN INNOVATION AND SUSTAINABILITY

Founded in 2009, Cycle Capital is an impact investor and a leading private climatetech venture capital investment platform with over \$0.6 billion under management. We partner with ambitious entrepreneurs to build global innovative companies.

What do we do?

We invest in high-yielding growth-stage companies commercializing clean technologies, that reduce GHG emissions directly or indirectly, optimize resource use, or improve process efficiency.

Cycle Capital investment practice is inspired by the lifecycle analysis. The essence of our strategy is to support the development of technologies that have a transformational impact on our society, while considering their global impact through their lifecycle.

We invest in leading climatetech companies that are developing technologies with a great potential of positive environmental impact.



Cycle Capital's impact investment approach stems from its vision and rests on four pillars to support impactful technologies:

● People

We invest in and support the best teams, supported by experienced board of directors, and strong investors. They all assemble purpose-driven individuals who are united by a bold vision and an entrepreneurial culture focused on execution and looking to generate significant returns.

● Product

We invest in breakthrough tech companies with strong IP, market validated technology, a clearly articulated product development roadmap and market entry strategy.

● Performance

We invest in companies that have a sustained competitive advantage that relies on proprietary technology with demonstrable ROI, versus incumbent products or solutions.

● Planet

Our vision is that our investments will bring environmental and economic benefits by partnering with the next decade's leading climatetech companies.

2022 HIGHLIGHTS

New Fund



MANAGED BY



ANCHOR INVESTOR
L'ORÉAL

OTHER INVESTORS

Axens, Claridge, Colam Impact, Fonds de solidarité FTQ, Haltra, Masonite and other institutional, private & high net worth investors

DIRECT INVESTMENTS
Announcements in 2023

INDIRECT INVESTMENTS

Closed Loop Partners
ECBF Management

New Investments



CA \$30M Series C



US \$18.4M Series B

Exits



(NYSE: GWH) Exit via SPAC
US \$1.1B Valuation



Acquired by BorgWarner
for US \$185M in July 2022 –
82% IRR



Definitive agreement under
which Infineon will acquire
GaN Systems for US \$830M
in March 2023

Total Portfolio Funding Raised in 2022

\$400M*

*As of Dec 31, 2022



FOCUS ON THE CIRCULAR INNOVATION FUND

A global growth-stage venture capital fund focused exclusively on innovation, striving to positively contribute to climate change mitigation and the circular use of resources.

Managed by Cycle Capital & Demeter

MISSION

Accelerate the growth of circular innovation, close the loop on single-use waste and re-design our economy for a more sustainable future.

INVESTMENT THESIS

Partner and support entrepreneurs driving change via breakthrough technologies and business models within the circular economy, including new materials, circular packaging, recycling and waste innovations, logistics and distribution, clean technologies and eco-efficient processes, and circular business models.

The Fund operates within and is compliant with SFDR Article 9. It reports on 16 KPIs

To demonstrate ESG performance to limit negative impacts (e.g. gender pay gap, emissions to water, hazardous waste, ...).

To demonstrate social and circular positive impacts (e.g. natural resources extraction avoided, petrochemicals replaced by biobased materials, % of reused or recycled packaging, ...).

The Fund’s Impact framework is guided by its Impact and Circular Economy Advisory Committee (ICEAC) whose members stem from a broad spectrum of industries with a complementary set of domain expertise.

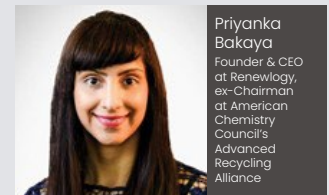


Olivier Maillard
CEO of CPI Germany & Czech Republic / Non-Executive Director of CPI UK at CPI Group



Rachel Barré
Environmental Leadership Director at L’Oreal

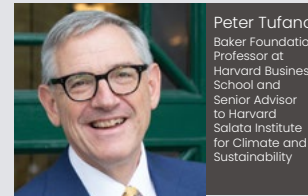
Chair, CIF ICEAC



Priyanka Bakaya
Founder & CEO at Renewlogy, ex-Chairman at American Chemistry Council’s Advanced Recycling Alliance



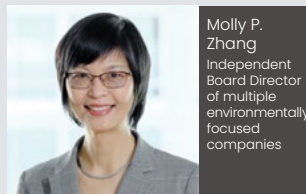
Catherine Rivière
Deputy Executive Director in charge of R&D at IFP Energies Nouvelles



Peter Tufano
Baker Foundation Professor at Harvard Business School and Senior Advisor to Harvard Salata Institute for Climate and Sustainability



Rosa M. García Piñeiro
Vice-president at Alcoa Sustainability President at Alcoa Foundation



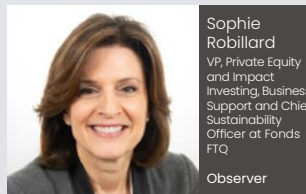
Molly P. Zhang
Independent Board Director of multiple environmentally focused companies



Sophie Paturle-Guesnerot
Founder & Managing Partner at Demeter Investment Managers



Claude Vachet
Managing Partner at Cycle Capital Management



Sophie Robillard
VP, Private Equity and Impact Investing, Business Support and Chief Sustainability Officer at Fonds FTQ

Observer

KPIs used in the Carried Interest calculation

- Board gender diversity
- Avoided GHG effect
- % of recycled or reused waste

COMMITMENT IN OUR ECOSYSTEM

Actively involved within its ecosystem, Cycle Capital is a founding member and signatory of a wide range of initiatives. We also sponsor or partner with numerous studies, thinktanks, consortia, and conferences on topics related to the ecological transition, impact investing and ESG and diversity.

Our commitment in the ecosystem

Over the years, Cycle Capital has developed deep relationships in the climatetech and VC ecosystem and worked with numerous organizations across Canada and in the United States.

Cycle Capital has a close relationship with the Cleantech Group (Cycle Capital is a Member of the North American Advisory Board) and Bloomberg.

CYCLE CAPITAL'S FAMILY



OUR TEAM

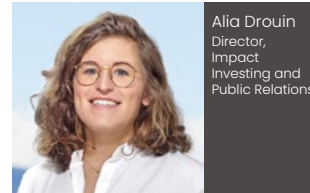
Cycle Capital is a gender-balanced firm composed of 28 professionals. The team has a combination of venture investing and portfolio management, engineering, finance, entrepreneurial, operational, and IP experience; as well as a very broad and deep knowledge of the climatetech industry and subsectors stemming from professional experience in corporate companies.

The team developed a wide and deep network of financial and corporate investors, as well as a climatetech entrepreneurial ecosystem.

Having a skilled and experienced impact and ESG team enables us to be at the forefront of the integration of impact and ESG measurement in Venture Capital investments in Canada.



Catherine Bérubé
Partner

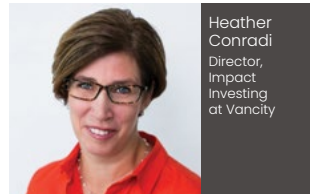


Alia Drouin
Director,
Impact
Investing and
Public Relations

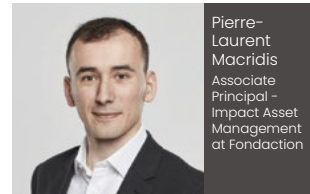


Marie-Agnès Thiébaud
Analyst, Impact
Investing
(replacement
of Alia during
her parental
leave)

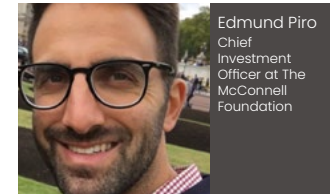
The team is supported and advised by the Impact Committee with the implementation of our ESG and impact practice, including methodology and tools.



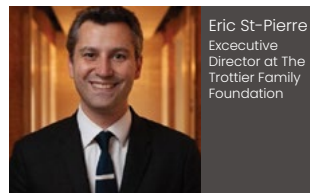
Heather Conradi
Director,
Impact
Investing
at Vancity



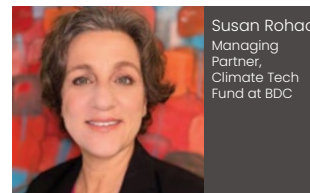
Pierre-
Laurent
Macridis
Associate
Principal -
Impact Asset
Management
at Fondation



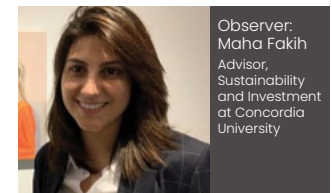
Edmund Piro
Chief
Investment
Officer at The
McConnell
Foundation



Eric St-Pierre
Executive
Director at The
Trotter Family
Foundation



Susan Rohac
Managing
Partner,
Climate Tech
Fund at BDC



Observer:
Maha Fakh
Advisor,
Sustainability
and Investment
at Concordia
University

MANIFESTO

We Have the Courage of Our Ambitions

We are financial entrepreneurs. We dream big and set our sights high, doing everything in our power to turn those dreams into reality. Along the way, we inspire our partners and collaborators to dream more, to dare more and to outdo themselves.

We Don't Believe in Half Measures

We're fully invested in a mission of capital importance. For us, excellence is intrinsic to who we are.

Our Word is Our Bond

We are genuine and fair partners. We respect our commitments and assume our responsibilities with honesty and transparency. Our relationships with partners and collaborators are founded on loyalty and solidarity, during times of hardship and in success.

ESG AND IMPACT APPROACH

We believe finding solutions to the world's most fundamental ecological challenges requires efficiently deploying capital so talented entrepreneurs and committed investors can work together to scale breakthrough solutions.

We assess and carefully select the technologies that take part in the path towards a decarbonized economy. We measure and report on their impact.

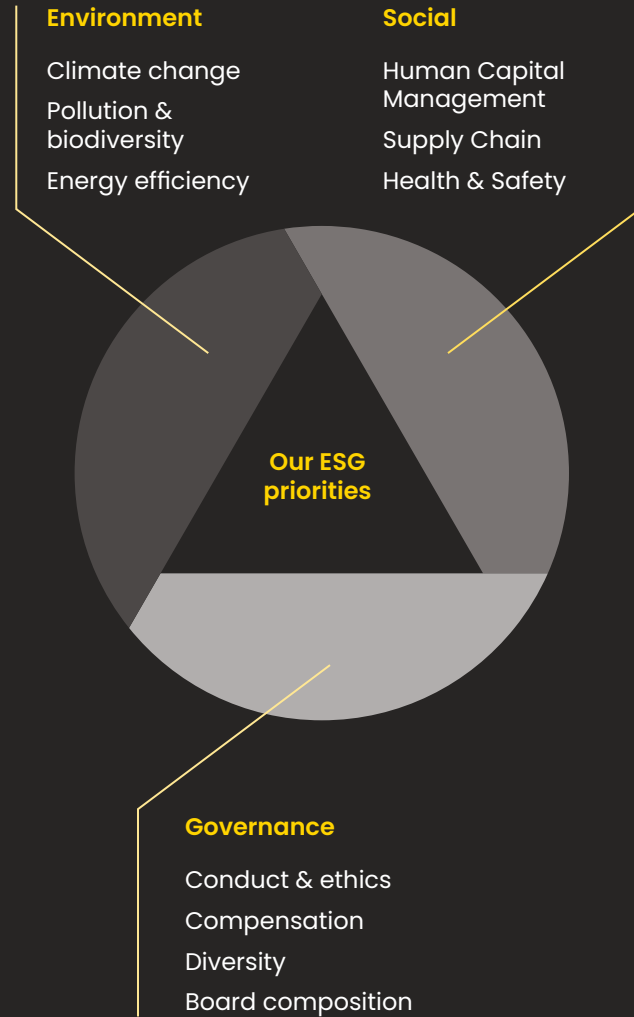
We have built specific tools to be used during the pre-investment phase and holding period.

We focus on materiality and additionality to bring value to the entrepreneurs we support.

We use recognized frameworks and standards to best assess the impact enabled by the technologies of the portfolio companies (e.g. UN SDGs, GII IRIS+ impact categories, GHG protocol...).

We advocate for responsible investment practices in our ecosystem and thus maximize our impact.

- PRI signatory since 2017
- Part of CVCA's ESG and Diversity working groups
- Part of the ILPA ESG Data Convergence Initiative
- Support Finance Montreal's declaration for sustainable finance



METHODOLOGY

Our ESG/impact process is integrated into the investment workflow. Below are detailed the specific action items of our ESG/impact methodology.



We carry out an annual reporting on ESG & Impact metrics. Here are some of the main KPIs we measure:



Environmental

Carbon Footprint and when relevant **GHG reduction Impact:** We are committed to tracking our investments' carbon footprint and GHG reduction impact. Through our partnership with a third-party expert, we employ industry-leading assessment practices such as ISO 14064.

Energy: We track both the energy savings of the company and its renewable energy consumption.

Biodiversity: We assess the potential risks of the portfolio company's activity on biodiversity, as well as its water management practices.



Social

Gender balance: We invest in industries where traditionally male professionals have an outsized presence when diversified teams have better performance.

Racial/ethnic diversity: We ensure people from visible minority or aboriginal backgrounds are well represented within our portfolio.

Job creation: Through our investments, we support the scaling up of our portfolio companies, the subsequent job creation, and the retention of the existing ones.



Governance

Intellectual property: We have a thorough process to assess, develop and maintain strategic IP in every company we invest in.

Corporate policies: We make sure our investees have strong and appropriate corporate policies that they implement and regularly update.

Composition of the board & sub-committees: We make sure the board is diverse and that independent board members have been appointed. We set up committees if needed (audit, compensation,...).

CYCLE CAPITAL FUND IV

Here are more details on the results of Fund IV companies, as of the end of 2022.

8 portfolio companies*



*Cycle Capital invested in Prevu3D in February 2023 and the company is now part of the Fund IV portfolio. The company will be showcased in the next impact report, when more data is available. Rhombus was exited in July 2022 (acquired by BorgWarner).

Environmental impact is at the core of Fund IV's impact investment strategy

100%

- of our investees have a strong environmental impact thesis
- of our investees contribute to one or more SDGs, including 7, 9 and 11

70%

- of our investees contribute to SDG 9: Build resilient infrastructure, promote sustainable industrialization, and foster innovation

- IRIS+ categories to which our Fund IV contributes: energy efficiency, clean energy, and climate mitigation

GHG assessments results for Fund IV*

6 000 tCO2e

Total GHG emissions from Fund IV companies in 2022

21 970 tCO2e

Total estimated avoided GHG emissions due to Fund IV companies' technologies in 2022

83 906 tCO2e

Total projected GHG avoided emissions due to Fund IV companies' technologies in 2024

Fund IV companies' emissions by scope (% of total emissions)

6%

Scope 1

1%

Scope 2

93%

Scope 3

*based on the latest available data



ENCYCLE

What do they do?

Encycle, founded in 2005, provides a low-cost energy savings solution targeted at the commercial and industrial markets. The company leverages its easy-to-deploy software solution to optimize energy consumption across a fleet of rooftop air handling units (RTUs) by utilizing proprietary AI algorithms to autonomously defer compressor stages. These algorithms can be integrated into building management systems or smart thermostats. Encycle has developed one of the only autonomous solutions available on the market that can optimize energy consumption across a fleet of RTUs.

Impact thesis

Encycle sells its customers a Software-As-A-Service based product, and the use of this software reduces their energy consumption by 10 to 20%. This significant decrease in the energy consumption of Encycle's clients translates into a reduction of GHG emissions.



GHG avoided in 2022

11 686 tCO2e

Potential GHG emissions avoided in 2025

54 535 tCO2e

Contribution to SDGs



Diversity metrics*

No women in top management

52%

of employees are from a visible minority or aboriginal

36%

employees are women

*Data as of December 31st, 2022

📍 Headquarters:

Vancouver,
British Columbia,
Canada

👤 Employees:

25

? Market problem:

Encycle has developed one of the only autonomous solutions available on the market that can optimize energy consumption across a fleet of RTUs.

💡 Innovation:

Encycle's solution, branded Swarm Logic, presents a compelling value proposition for both end-customers and Building Management System (BMS) suppliers. The solution drives heating, ventilation and air conditioning (HVAC) savings of 10 – 20% and does not require any effort from building operations to realize these savings.



BUS.COM

What do they do?

Founded in 2014, Bus.com is the largest vetted community of bus operators in North America, enabled by marketplace technology to deliver award-winning private bus services. Bus.com’s solution significantly improves utilization for bus operators and ease of use for travelers.

Impact thesis

Compared to other travel methods, travel by bus has the lowest emissions per passenger mile. Bus.com will enable more and more passengers to use charter buses instead of more carbon intensive alternatives such as cars. And as Bus.com increases their utilization rate, their per passenger emissions will drop even further.

Headquarters:

Montreal,
Quebec,
Canada

Employees:

65

Market problem:

Lack of accessible and frequent last-mile connectivity for commuting and group travel.

Innovation:

Transportation-as-a-Service (TaaS) solution providing charter bus rentals, customized shuttle services, and transportation technology integration.



GHG avoided in 2022

173 tCO2e

Potential GHG emissions avoided in 2024

742 tCO2e

Contribution to SDGs



Diversity metrics*

Female CEO

40%

of top management members are woman

51%

of employees are from a visible minority or aboriginal

48%

employees are women

*Data as of December 31st, 2022

SPOTLIGHT ON BUS.COM: ON-DEMAND MOBILITY SOLUTION FOR A MORE EFFICIENT AND ACCESSIBLE TRANSIT

Bus.com provides private bus services to companies and communities in Canada and the US through a vetted network of bus operators. Their Transportation-as-a-Service (TaaS) solution offers demand-driven and fixed route operations to improve accessibility, frequency, and last-mile connectivity for commuting and travel.

In 2020, Bus.com appointed Maxie Lafleur as CEO. Lafleur successfully led the company through the Covid-19 pandemic, improved their enterprise service, and secured important transit projects. These include managing the LAX FlyAway® bus service at Los Angeles World Airport (LAWA), the world's third largest airport, and operating the microtransit program for Wave Transit, the transport authority for Cape Fear region in Wilmington, NC.

As post-pandemic activities begin to ramp up, Maxie Lafleur said, "Companies want to make commuting more desirable. However, at the same time, there is a growing trend to reduce GHG emissions, adhere to safety protocols and cost-effectively reach destinations." As public transit and traditional transportation systems are still adapting to these new changes, Lafleur adds, "Bus.com has developed a flexible group transportation experience through our real-time marketplace that can complement public-transit routes and optimize the size of buses to reduce vehicles on the road and GHG emissions."

Business Growth and Emerging Opportunities

Bus.com's partnerships with top transit and airport authorities, such as LAX FlyAway® and Wave Transit, have been successful in enhancing shuttle service efficiency. For instance, the RideMicro initiative by Wave Transit has led to an 800% increase in monthly ride bookings, enabling the elimination of two fixed routes while enhancing service coverage and accessibility.

In 2022, Bus.com was also awarded the end-to-end management of the LAX FlyAway® service for LAWA, including fleet procurement, customer-centric technology integration, and operations. The project envisions increased ridership, wider reach, and a reduction in operating costs, transporting around 90,000 passengers per month between LAX and the Van Nuys and Union stations.

The recent increase in remote and hybrid work has also seen the travel needs of remote and suburban regions evolve, with suburb-to-suburb connectivity increasing in demand. As remote and suburban areas experience strong population growth, Lafleur points out, "Flexible transit services powered by on-demand technology are a better alternative to service suburban and remote regions, not only to reduce car usage but also to provide greater freedom of movement, more cost-effectively."



Alongside Bus.com's work to improve transit mobility, the transition back to work after the pandemic has resulted in a growing demand for enterprise and spot-demand services. Realizing the importance of work-life balance and the costs of commuting, Lafleur notes, "employers can no longer take commuting for granted; This is where Bus.com shuttle solution can help enterprises, particularly manufacturing businesses avoid shift delays and improve productivity."

Moreover, as large conferences and events make a comeback after the pandemic, safety, convenience, and reliability of transportation for attendees are the top priorities. To cater to this growing demand, Bus.com has been collaborating with event organizers to improve reliability and safety, and improve transit experience by leveraging technical expertise and technology partnerships of Bus.com.



VUTILITY

What do they do?

Vutility, founded in 2015, is a low-cost provider of high-quality real-time utility data. They have developed a unique hardware and cloud offering, which includes dramatically superior ease-of-install, built-in communication protocols, energy harvesting capabilities, data security, API capabilities, and a low price point, that does not exist in the market today. The data is heavily encrypted and the unit has been proven to collect and instantly transmit data several miles through concrete, steel, data centers, and many other environments to Vutility's servers via a secured proprietary network. The unit can be used to monitor energy usage, verify efficiency improvements and monitor critical infrastructure in real time without touching the customer's networks.

Impact thesis

Vutility's low-cost sensor enables its clients to collect and provide real-time utility data to track buildings' energy consumption at a granular level. This data can then be converted into valuable insights driving key business decisions around energy savings and sustainability targets. It also enables remote monitoring for customers as the units are connected to gateways which send the data to the Vutility cloud, which allows customers to reduce truck rolls. Therefore, Vutility's products enable a reduction of GHG emissions.

GHG avoided in 2022

608 tCO2e

Potential GHG emissions avoided in 2025

30 765 tCO2e

Contribution to SDGs



Diversity metrics*

No women in top management

15%

of employees are from a visible minority or aboriginal

8%

of employees are women

*Data as of December 31st, 2022

Headquarters:

Sandy, Utah, United States

Employees:

25

Market problem:

Vutility has developed a unique offering, which includes dramatically superior ease-of-install, built-in communication protocols (LoRaWAN), energy harvesting capabilities, data security, API capabilities, and a low price point, that does not exist in the market today.

Innovation:

Vutility's solutions can reduce total cost of ownership by up to 90% versus traditional submetering solutions.

SPOTLIGHT ON VUTILITY: VUTILITY'S REAL TIME DATA PLATFORM AIMS TO UNLOCK ENERGY EFFICIENCIES

In recent years, countries have been setting net-zero emission targets to transition their economies for a low-carbon future and harness the growth opportunities that lie from using new innovative climatetech solutions. However, McKinsey's research notes that ~\$9.2 trillion in annual average spending on physical assets will be required to transition to a net-zero economy.

For businesses to invest capital efficiently and deploy climateTech solutions in a more transparent and effective manner, the World Economic Forum has highlighted that data and artificial intelligence are integral to tackling some of the challenges associated with carbon management and through the insights generated, enhance the decision-making process to reduce GHG emissions for organizations.

To address the market demand for energy insights and unlock long-term growth opportunities, Utah-based Vutility, under new CEO Stephen Prince, is deploying a real-time energy data monitoring platform which leverages artificial intelligence to improve resource efficiency and improve profitability for customers globally. Their proprietary technology captures energy data from buildings to solve a myriad of energy challenges.

"Businesses at all levels are committing to sustainability, but to drive forward the most efficient energy transition, data is the key component in making decisions on what purchases should be made and how to best manage operations," says Prince.

In recent years, Vutility has partnered with the largest investor-owned healthcare organization in the U.S., with over 170 hospitals and 2,000 clinics across the United States to develop energy profiles for their hospitals, which is on track to save the organization over US \$94M/year in operating and maintenance costs. In addition, through collaboration with regional utilities, it enabled participation in demand response programs.

"Large organizations look for energy data when making investment decisions. Our solutions provide a competitive advantage for our customers. We've enabled this organization to create digital twins of their facilities that includes real-time energy data and provided them with the information they needed to move forward on their sustainability goals cost-effectively, while ensuring their hospital facilities meet ventilation, positive pressure, and temperature regulatory and safety requirements," says Prince.

Moreover, as ESG and GHG reporting requirements are introduced with mandatory disclosures, Vutility has developed several IoT solutions that gather real-time energy data to create energy profiles. "Accurate GHG and energy data will be paramount for organizations' disclosures, particularly to capture Scope 2 and 3 emissions. Given the scale and scope of the energy data being gathered and the industry-leading organizations we support, we have developed a highly secure data infrastructure that allows us to comply with applicable regional laws," says Prince.



With the high, historically unaddressable demand for energy data, Vutility sees incredible opportunities in three main areas. Firstly, the pre-built market where Vutility can be part of the development process so that building managers in commercial and residential settings can install the sensors and gather their energy data cost effectively. Secondly, in retrofitting the existing built market. Prince notes that 96% of current commercial buildings lack real-time digitized energy monitoring. This leaves owners and operators blind to the potential energy savings opportunities that leverage behavioral changes and equipment upgrades, as well as predictive maintenance and demand response participation. Thirdly, Vutility can embed its sensing solutions into assets susceptible to damage from harmonic imbalances, by detecting potential issues in advance of failure.



AIREX ENERGY

What do they do?

Airex, founded in 2011, has developed and patented an innovative technology at a very competitive cost that uses torrefaction to transform biomass into biochar. The CarbonFX Airex process allows the wet biomass to be torrefied in a cyclone reactor with a sustention ring which allows good control of the residence time of the biomass inside the reactor and therefore the type and quality of the product.

Impact Thesis

Airex sells 2 types of products, that have different environmental impacts:

1) BiocoalFX (torrefied pellets): a clean alternative to coal produced with biomass, that can be used in power plants to make them renewable energy plants.

2) BiocharFX: 100% natural and organic soil amendment, that improves soil fertility and yield and enhance resilience to climate change (enhanced nutrient retention, increased water holding capacity, improved soil aeration and drainage, increased microbial activity). The use of biochar also enables carbon sequestration in the soil.



Potential GHG avoided in 2024 (biochar)

9 164 tCO2e

Potential GHG emissions avoided in 2026 (biochar)

15 323 tCO2e

Contribution to SDGs



Diversity metrics*

No women in top management

No employees are from a visible minority or aboriginal

18%

of employees are women

*Data as of December 31st, 2022

Headquarters:

Laval, Quebec, Canada

Employees:

17

Market problem:

Transition the industrial sector away from fossil fuel by integrating renewable green carbon solutions to reduce GHG emissions.

Innovation:

Airex has developed and patented an innovative technology at a very competitive cost that uses torrefaction to transform biomass into biochar and biocoal.

SPOTLIGHT ON AIREX ENERGY: ITS INNOVATIVE CIRCULAR APPROACH IS SEQUESTERING CARBON AND REPLACING COAL TO GENERATE CLEAN ENERGY

According to the International Energy Agency (IEA), coal supplies just over a third of global electricity generation and is the largest single source of CO₂ emissions, creating a unique challenge in transitioning to low-carbon energy systems. The IEA's Coal in Net-Zero Transition Report highlights that broader adoption of clean power generation, accompanied by system-wide improvements in energy efficiency, is critical to reducing coal use in power generation and cutting emissions from existing assets. Additionally, the Intergovernmental Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5°C in 2018 noted that all the pathways to a net-zero economy relied to some extent on leveraging carbon removal solutions to achieve net negative emissions after 2050, with the IEA reporting enhanced natural processes such as biochar as a possible solution that can effectively remove CO₂ from the atmosphere.

In Quebec's Bécancour region, one company working to reduce greenhouse gas emissions and remove carbon from the atmosphere is Airex Energy. Through Airex Energy's proprietary CarbonFX™ torrefaction technology that converts biomass waste into value-added carbonized products such as biocoal and biochar, the company is using a circular approach to transition coal-fired power plants to use renewable energy for power generation and sequester carbon into the soil, while improving soil fertility in the agriculture sector.

Market-friendly conditions can make it easier to deploy biocoal for clean power generation

During the recent COP26 in Glasgow, more than 40 countries, including Canada agreed to phase out their use of coal-fired power, the dirtiest fuel source. Moreover, as the demand for clean electricity rises, governments around the world have also been adopting schemes such as feed-in tariff and renewable energy certificates to transition their economies towards a net-zero future and promote the adoption of innovative solutions in carbon-intensive industries. Michel Gagnon, CEO at Airex Energie, noted, "as governments take steps to reduce GHG emissions from coal-fired power plants, we see opportunities in countries that are looking to use biocoal pellets in their power generation."



Gagnon adds, "given the policies and support in these markets to compensate for the high coal costs, Airex can service customers more cost-competitively and provide high-intensity sectors such as metallurgical industries with greener sources to power their production." Alongside government scheme to scale and integrate biocoal into the economy, Gagnon notes, "economy of scale and location can also play important part in keeping costs competitive. For these reasons, Airex plans to use the proceeds from the latest round funding to scale-up the size of its Bécancour biocoal plant and co-locate near sawmill, which are present in the region, to lower the transportation cost of raw material and be near deep water port to minimize logistic costs."



VUEREAL

What do they do?

VueReal, founded in 2016, is a Waterloo based company developing and commercializing platforms that enable efficient, practical, and scalable production and integration of micro- and nano- devices. Their technology is a proprietary printing platform in combination with their patented cartridge structure that enables low cost, high yield “true printing” of microLED. The applications are on mobile devices, monitors & televisions, mobile wearables, medical displays, virtual reality and dashboards.

Impact Thesis

VueReal developed a printing process, including a specific cartridge, for microLED. They created an enabling technology in the value chain of electronic devices with displays functioning with microLED. The application of VueReal’s technology in displays has different types of impact:

Energy efficiency on the user side

The user of an electronic device that has a display functioning with microLED uses less energy for the same screen time than with a traditional display. As a provider of a microLED printing technology to the actors of the display manufacturing value chain, we can assume that VueReal has an indirect impact on energy efficiency at the end consumer level. VueReal’s printing process enables a more efficient manufacturing process when it comes to printing microLED on displays. The company claims that their process uses less energy, water and chemicals than traditional printing processes of LED.

Extended battery life

Display technologies using lower energy consumption could extend battery endurance, this mainly for smart phones.

Headquarters:

Waterloo,
Ontario,
Canada

Employees:

35

Market problem:

VueReal’s microLED technology offers lower cost than OLED, improved quality compared to traditional LCD, can rival the deep blacks or high contrast ratios of OLED while offering superior brightness and outdoor visibility.

Innovation:

MicroLED technology is self-emissive and can be controlled on a pixel-by-pixel basis, has a lower consumption than OLED/LCD, is slim, has no backlight requirement, is flexible, has high viewing angles, needs no encapsulation, and finally can be scaled to large size displays.

GHG avoided in 2022

1 tCO2e

Potential GHG emissions avoided in 2025

157 tCO2e

Contribution to SDGs



Diversity metrics*

25%

of top management members are woman

66%

of employees are from a visible minority or aboriginal

46%

of employees are women

*Data as of December 31st, 2022



SPARK MICROSYSTEMS

What do they do?

Spark Microsystems International, Inc. (SPARK) is a fabless semiconductor company that is leading the way towards ultra-low energy consumption, power and latency wireless communications for the Internet of Things (IoT) revolution. SPARK’s patented technologies enable the company to offer order of magnitude better communications data rate, latency and power consumption compared to legacy wireless protocols (Bluetooth, BLE, WiFi) and even its Ultra-Wideband competitors. The company plans to bring battery-less operations to the IoT market, one of the biggest roadblocks to deploying trillions of sensors.

Impact Thesis

SPARK’s patented technologies enable the company to offer 10X to 60X better bandwidth, latency and power consumption compared to legacy wireless protocols (Bluetooth, WiFi) and even its Ultra-Wideband competitors. As an example, wireless headphones enabled with a SPARK radio would require only 15% of the number of charges per year compared to wireless Bluetooth headphones.



Headquarters:

Montreal,
Quebec,
Canada

Employees:

74

Market problem:

One of the biggest challenges to deploying trillions of sensors in the IoT market is the need to throw millions of tons of batteries in landfills each year.

Innovation:

The company plans to solve this problem by bringing battery-less operations to the IoT market. SPARK expects to reduce electronic waste by 440 tons by 2023, but that number would grow substantially over the following years as the company starts to sell battery-less solutions.

GHG avoided in 2022

97 tCO2e

Potential GHG emissions avoided in 2024

1 673 tCO2e

Contribution to SDGs



Diversity metrics*

17%

of top management members are woman

16%

of employees are from a visible minority or aboriginal

11%

employees are women

*Data as of December 31st, 2022



MYSA

What do they do?

Founded in 2014, Mysa is a smart thermostat company that targets residential customers who have non-centralized heating and cooling systems. The company utilizes its elegant design, added functionality and ability to integrate into the smart home to be a leader in the market.

Impact thesis

Mysa indirectly avoids greenhouse gas (GHG) emissions due to the reduction in energy consumption for households as result of using its smart thermostats.

GHG avoided in 2021

3 842 tCO₂e

Potential GHG emissions avoided in 2024

29 439 tCO₂e

Contribution to SDGs



Diversity metrics*

18%

of top management members are woman

8%

of employees are from a visible minority or aboriginal

33%

of employees are women

*Data as of December 31st, 2022



♥ Headquarters:

St John's, Newfoundland and Labrador, Canada

👤 Employees:

111

? Market problem:

Electric heating and cooling systems like baseboard heating, in-floor heating, and mini-split heat pumps did not have smart thermostats that allowed users to be more energy efficient while helping their electric grids with decarbonization.

💡 Innovation:

Smart home energy management system to efficiently use energy and integrate control systems.

SPOTLIGHT ON MYSA: HOW MYSA IS CREATING A SMART HOME ENERGY MANAGEMENT SYSTEM TO ADVANCE THE GLOBAL SHIFT TOWARD ELECTRIFICATION

As the majority of home heating in North America still uses fossil fuels, integrating new technologies to lower heating intensity is crucial to curb GHG emissions.

St. John's-based Mysa, co-founded by brothers Josh and Zach Green, are developing a smart thermostat system that leverages electric baseboard heaters, mini-split heat pumps and energy data analytics to electrify homes and save energy costs. Their integrated system provides heating and cooling through a single control system, unlike traditional combustion-based systems.

"This integrated controls approach with smart thermostats for all types of electric heating and cooling systems is how Mysa differentiates itself from other smart thermostat providers. In today's push to decarbonize the residential sector, conventional heating and cooling systems are not optimal in terms of energy efficiency and with separate operating mechanisms, leading to customer confusion. As a result, we saw a large opportunity for energy savings by integrating electric baseboard and in-floor heating market with mini-split heat pumps to improve the end-user's experience and energy usage in homes."

Smart thermostats like Mysa can aid in the transition to electric heat pumps and optimize clean energy use while reducing costs. Green highlights, "Mysa's products add broader efficiency into a home's heating and cooling systems. For example, we work to ensure separate heating-cooling systems are not conflicting with each other and heat pumps are used over resistance heating as much as possible and only use electric resistance heating as backup if the heat pumps can't keep up with the heating load."

Partnering with utilities to maximize the use of carbon-free power sources

A lot of countries now aim to phase out coal, decarbonize the electricity supply and expand renewable energy to advance towards net-zero emissions economy-wide. However, in order to integrate intermittent renewable energy sources, the system requires energy storage technologies in combination with a smart-data management systems to shift consumer electricity consumption to better match the electricity grid supply. In order to do that, Green said, "We have partnered with utilities such as Hydro Quebec, BC Hydro and Puget Sound Energy to implement demand response pilot programs."



"These partnerships with utilities are a key piece in Mysa's growth strategy because it allows us to showcase our product and services to a wider audience. For example, in areas where the utility provides time-of-use electricity pricing, Mysa customers can schedule their heating and cooling systems to lower costs and use cleaner electricity, while understanding more about their individual electricity usage. The data from Mysa's smart thermostats also allow utilities to better forecast energy demand and minimize emissions."

LESSONS LEARNED

SINCE WE STARTED OUR IMPACT JOURNEY

1. Adapting continuously to a moving target

Monitoring market best practices

There are a lot of existing frameworks and standards in the market when it comes to ESG and impact. Although a consolidation movement is just starting, keeping a close eye on the latest trends and processes is crucial.

Keeping an open-mind and being ready to change our process

The framework used yesterday might not be the best one today. We are on the lookout to regularly update our tools to meet the request of our investors and get the best insights.

2. Adapting our process to our industry

Adapting the frameworks and tools used to be relevant for start-ups

The disclosure required for a listed company is not going to be relevant for a start-up. We keep in mind that we are dealing with small companies evolving very quickly when building tools and processes.

Focusing on the useful data collection

For each data we request, we ask ourselves if and how we are going to use it. We focus on useful data that the company will be able to provide to ensure we get good quality data.

Integrating impact into the investment team workflow

Integrating the investment and impact teams is key to reaching our goals. Impact assessment is at the root of our investment decision and is, as such, of the investment team's work.

3. Staying humble

Working in a step-by-step approach and building solid foundations

It is sometimes difficult to know where to start when thinking about impact and ESG. Starting small and improving tools and processes along the way is key. Even if it seems like small steps, we are confident that we are building solid foundations for the future.

Being active in the ecosystem and sharing knowledge with peers

No one has a perfect answer when it comes to impact and ESG. Sharing methods, questions and doubts with our peers is a great way to improve. When it comes to having a positive impact on the world, there is no competition.

THANK YOU

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