Greentown Labs

2023 Impact Report

CLIMATE ACTION AT WORK

GREENTOWNLABS.COM

Dear Friends of Greentown Labs,

The year 2023 was pivotal for our organization and our community of startups. As we reflect on the past 12 months, we are filled with immense gratitude, optimism, and a powerful sense of urgency—one that we know each of you shares.

During the past year, we saw remarkable strides in climatetech innovation, the continued deployment and cost reductions of renewable energy and other climate solutions, and strong signals of action from world leaders at COP28. As we turn the page to the new year, we are inspired by the collective achievements of our community and are incredibly proud to present our annual impact report.

At Greentown Labs, we know that in the face of the climate crisis, the solutions needed to reduce greenhouse gas emissions and decarbonize our economy are not just concepts of tomorrow—they are being developed today, and many of them can be found within the walls of our incubators in Boston and Houston. In the following pages, you will find stories about these innovations and the impact they're having on our planet. You'll learn about our visionary, courageous entrepreneurs who are developing the solutions to redefine industries, mitigate the impacts of climate change, and build more resilient systems and communities.

Greentown eagerly welcomed 60 new startup member companies and 13 new corporate partners across our incubators in 2023. We hosted hundreds of events, facilitated more than 300 curated connections between our startups and partners, and grew our investor and advisor networks. We concluded four Greentown Go programs and kicked off four new ones aimed at accelerating startup-corporate collaborations. In partnership with Browning the Green Space, we successfully implemented the first year of our Advancing Climatetech and Clean Energy Leaders (ACCEL) program focused on bolstering BIPOC-led startups as they develop their climatetech solutions. We'll announce the second cohort in early 2024.

This past year also marked a significant turning point in Greentown's history. While our mission remains wholeheartedly committed to supporting climatetech entrepreneurs and fostering an inclusive climate innovation ecosystem, in early 2023 we transformed from a public benefit corporation into a 501(c)(3) nonprofit. This new status enables us to expand our programming and maximize our efforts to support entrepreneurs and the commercialization of the critical climate solutions they're developing. We are excited about the enormous possibilities this evolution brings to collaborate with individuals and organizations that share our passion for a more sustainable world.

We were fortunate to welcome a number of new team members throughout the year, and one report could never properly reflect all their hard work and that of our full staff. Our team's dedication to catalyzing climate solutions through entrepreneurship, partnership, and collaboration is worthy of recognition and we hope their efforts come to life as you flip through these pages.

Greentown brings together startups, corporates, investors, policymakers, and many others with a focus on scaling climate technologies. If you're reading this, you very likely represent one of those constituencies and have played a key role in our success over the past year; and for that we thank you.

The path of early-stage climatetech companies—from inception to scaling to full commercialization—is fraught with obstacles and challenges. Greentown's mission centers on helping these startups surmount those hurdles and accelerate their pace to getting their climatetech solutions into our economy. That's where your support and partnership remains critical. It has been a thrill and a privilege to lead Greentown since joining as Board Chair in March and as CEO and President in September, respectively. We can't wait to see all that we'll accomplish together in 2024!

Onward and upward,

Dawn James
Board Chair
Managing Director,
Sustainability Strategy,
Deloitte

Kevin T. Knobloch
CEO and President
Greentown Labs

Greentown Labs Board of Directors

DAWN JAMES
BOARD CHAIR;
MANAGING DIRECTOR,
SUSTAINABILITY
STRATEGY, DELOITTE LLP

NISHA DESAI
FOUNDER & CEO OF
INTENTION (GREENTOWN
LABS COMMUNITY
BOARD MEMBER)

KEVIN T. KNOBLOCH
CEO & PRESIDENT OF
GREENTOWN LABS

KATHERINE HAMILTON
BOARD VICE CHAIR;
CHAIR OF 38
NORTH SOLUTIONS

LEAH ELLIS
CO-FOUNDER & CEO OF
SUBLIME SYSTEMS
(GREENTOWN LABS
COMMUNITY
BOARD MEMBER)

NIDHI THAKAR
VICE PRESIDENT
OF POLICY AND
REGULATORY AT
FORM ENERGY

BARBARA BURGER
CORPORATE GRADUATE,
ENERGY DIRECTOR,
ADVISOR, INNOVATOR

HILARY FLYNN
MANAGING DIRECTOR
OF INVESTMENTS FOR
MASSACHUSETTS CLEAN
ENERGY CENTER

MITCH TYSON
PRINCIPAL AT TYSON
ASSOCIATES AND
CO-FOUNDER OF THE
NORTHEAST CLEAN
ENERGY COUNCIL

JENNIFER DALOISIO
SENIOR VICE PRESIDENT
OF CORPORATE
OPERATIONS AT
FIRSTLIGHT

JASON HANNA
HEAD OF PRODUCT,
AI SOLUTIONS GROUP
AT ANALOG DEVICES +
CO-FOUNDER OF
GREENTOWN LABS

Greentown and Our Startups ALL-TIME IMPACT

500+
COMPANIES INCUBATED

90%
STARTUP SURVIVAL RATE

$5.7B+
RAISED FOR CLIMATE SOLUTIONS

200+
CURRENT MEMBERS

2
INCUBATOR LOCATIONS

240+
ANNUAL ECOSYSTEM & COMMUNITY EVENTS

11,000+
JOBS CREATED

All data in this Impact Report reflects 2023 only, unless otherwise stated.


Somerville
Houston
Electricity

Climate Solutions for a Decarbonized, Resilient Future

At Greentown Labs, we define climatetech as technological solutions that mitigate the impacts of climate change and build resilient communities.

Mitigation technologies capture or reduce greenhouse gas (GHG) emissions, and our startup members are innovating to decarbonize the five key GHG-emitting sectors: agriculture, buildings, electricity, manufacturing, and transportation.

Resilience technologies prepare people, communities, and infrastructure for the impacts of climate change, with a focus on equity.

Check out just a sampling of our members in each sector!

AGRICULTURE
17 STARTUPS

Fresh Inset
Fresh Inset's solution protects crops from the damaging effect of ethylene during storage, shipment, and retail, improving fresh produce's shelf-life, appearance, and quality.

Lignium Energy
Lignium Energy transforms cow manure—a major climate and logistical problem on farms—into odorless combustion pellets that can be used as inexpensive, climate-friendly fuel and provide a new source of revenue to farmers.

BUILDINGS
15 STARTUPS

MicroEra Power
MicroEra Power envisions an on-site thermal energy storage system to decarbonize buildings, enhance the performance of heating and cooling systems, support grid resiliency, and increase use of renewable energy.

Transaera
Transaera is developing affordable, energy-efficient, sustainable cooling systems. Its air conditioner cools the air efficiently with a novel, sponge-like material that grabs moisture from the atmosphere.

50+
STARTUPS MADE NEW TECH DEPLOYMENTS

142
STARTUPS RAISED FUNDING

$1.7B
RAISED BY MEMBERS AND ALUMNI

ELECTRICITY
74 STARTUPS

Form Energy
Form Energy is transforming how we power our world with a new class of cost-effective, multi-day energy storage systems that will enable a reliable, fully renewable electric grid year-round.

Fervo Energy
Fervo Energy applies proven technologies—such as horizontal drilling and distributed fiber-optic sensing—to geothermal-reservoir development, unlocking geothermal power in previously uneconomic locations and dramatically increasing the resource potential for geothermal globally.

TRANSPORTATION
17 STARTUPS

AmpUp
AmpUp is developing solutions to make electric-vehicle adoption smoother for every user involved, from drivers to station owners to utilities. Its software-as-a-service charging network and dashboard help EV-charger owners manage any number of stations, including price setting, energy optimization, and analytics and sustainability reporting.

Fleet Robotics
Fleet Robotics is tackling biofouling in the shipping industry—which can increase ships' fuel consumption by up to 30 percent—with a new category of autonomous mobile robots that can easily scale and clean vertical surfaces underwater.

MANUFACTURING
48 STARTUPS

Cemvita
Cemvita applies synthetic biology to decarbonize and reduce the environmental footprint of heavy industries in three ways: capturing CO_2 or methane for use as a feedstock, reducing emissions from energy-intensive chemical reactions, and replacing processes that use harmful chemicals.

Hertha Metals
Hertha Metals is developing technology to cost-effectively produce steel from low-grade iron ores with 98 percent less CO_2 emissions than the conventional process.

RESILIENCY + ADAPTION
44 STARTUPS

QuantAQ
Today, we don't have the extensive air-quality information we need to reduce pollution—and that's in part because of challenges with existing air-quality sensors. QuantAQ's air-quality sensors are smaller than a microwave, cost a fraction of traditional pollution measurements, offer continuous rather than hourly data, and are simple to install and operate.

WIP International Services
WIP's atmospheric water generator creates pure drinking water from humidity in the air, addressing water scarcity and lack of access to fresh, potable water.

In 2023, Greentown implemented Clean Energy Ventures' Simple Emissions Reduction Calculator tool into our new member application, collecting important data on incoming startups' emission-reduction potential.

Convening Ecosystems Around Climatetech Entrepreneurship

Events

Greentown Labs prides itself on being a convener of the climatetech ecosystem, both within and across the cities we call home. One of the primary ways we bring key ecosystem players—from our entrepreneurs, to corporate executives, to investors, to policymakers, and beyond—together is through events that foster connections, showcase our startups' innovations, and champion collaborative climate action.

52
PUBLIC EVENTS

8K
UNIQUE ATTENDEES

Here are just a few examples of events we hosted in 2023:

- **EnergyBar: New Member Spotlight**
  At this edition of Greentown Boston's signature networking event, we were proud to feature the dozens of startups that joined our community in 2023.

- **Climatetech Career Fairs**
  Building strong teams is critical for early-stage startups—and building a diverse, inclusive workforce is critical for the climatetech industry. We hosted career fairs at both of our incubators in 2023, connecting folks who were eager to work on climate with our startup community.

- **ACCEL Showcase**
  In 2023, we hosted the inaugural year of ACCEL—an accelerator from Greentown and Browning the Green Space to support BIPOC-led climatetech startups. At this showcase, the six startup participants presented their technologies and shared how ACCEL supported their growth. Learn more about ACCEL on page 20!

- **Investor Speaker Series: Celebrating Identity in Angel Investing**
  In this iteration of our Investor Speaker Series, we highlighted efforts to create an equitable fundraising landscape, featuring insights from several investing groups that prioritize and celebrate founders' unique identities.

- **The Future of Offshore Wind: Innovation + Startup Showcase**
  This event featured five startups developing solutions for responsible offshore wind development, all of which participated in Greentown Go Energize 2023 and worked closely with Vineyard Wind and the Massachusetts Clean Energy Center to advance their technologies. Learn more about Greentown Go on page 15!

CLIMATETECH SUMMIT

Our annual Climatetech Summit brings the climatetech ecosystem together for hands-on exploration with our 200+ startups and their climatetech solutions; keynotes and sessions featuring leaders across climatetech, finance, policy, and justice; and networking with key climate-action trailblazers.

The 2023 summit called for swift, collaborative deployment of climatetech solutions, diving into topics ranging from the impact of the Inflation Reduction Act, to how startups can navigate the second valley of death, to the importance of startup-corporate partnerships.

Dozens of Greentown startups pitched during the summit, and many more presented during the startup showcases and made valuable connections during general and investor networking sessions.

180+
CURATED CONNECTIONS MADE

141
STARTUPS FEATURED

1,900+
ATTENDEES

SECTOR PITCH DAYS

Decarbonizing the key greenhouse-gas-emitting sectors will require collaboration across the climatetech ecosystem, with climate finance, policy, and justice leaders working in concert with technology entrepreneurs to scale solutions.

That's why we convene our startups, partners, and investor network four times a year for our Sector Pitch Day series, each time exploring innovation areas and opportunities present in a particular sector. In 2023, we held Sector Pitch Days focused on electricity, buildings, and manufacturing.

44
STARTUPS HIGHLIGHTED

600+
ATTENDEES

Accelerating the Energy Transition in the Energy Capital of the World

Greentown believes the City of Houston has a critical role to play in helping solve the climate crisis. If we are successful in our efforts to help make Houston the energy transition capital of the world, if the global corporations headquartered in Houston can incorporate climatetech solutions into their operations at scale, we have the potential to decarbonize not just one city, but create a model for similar cities across the globe—and build a diverse and inclusive energy workforce in the process.

Greentown Houston opened on Earth Day 2021, and in 2023, we worked to scale our impact in the region, support our community of 75+ Houston startups, and bolster the city's energy transition efforts—as well as build a bridge between Houston and Boston's climatetech ecosystems.

MEET SOME OF OUR HOUSTON-BASED MEMBERS WORKING ON ENERGY TRANSITION TECHNOLOGIES:

Ambient Fuels

Ambient Fuels is a green-hydrogen developer decarbonizing heavy industry with custom-engineered hydrogen solutions.

CeraPhi Energy

CeraPhi develops proprietary technology to significantly de-risk the delivery of geothermal projects, enabling geothermal production through the reuse of existing oil and gas wells or the development of new wells to provide baseload heat and energy services.

Kanin Energy

Kanin Energy's innovative third-party financing model and turnkey development approach enables industrial partners to quickly monetize waste heat while significantly mitigating risks of deployment.

TEXAS ENTREPRENEURSHIP EXCHANGE FOR ENERGY

The Texas Entrepreneurship Exchange for Energy (TEX-E) is a first-of-a-kind collaboration among The University of Texas at Austin, Texas A&M University, University of Houston, Rice University, and Prairie View A&M University—powered by Greentown and MIT's Martin Trust Center for Entrepreneurship—that's creating a powerful, student-driven entrepreneurship ecosystem in Texas focused on energy innovation and education.

TEX-E's mission is to train and empower the next generation of entrepreneurs to lead the energy transition and to share in the massive economic opportunity it entails, while also addressing the existential threat of climate change. As part of the program, participating students have access to mentorship with Greentown's climatetech entrepreneurs, networking events, career opportunities, and cross-learning with MIT.

CHECK OUT SOME OF THE TEX-E HIGHLIGHTS FROM 2023:

- **The inaugural TEX-E Prize:** After a competitive application process that drew 18 startup contenders, five startups run by Texas students competed for $50k in cash prizes during CERAWeek. The first- and second-place winners later became Greentown Houston members!
- **TEX-E Fellows:** 30 students from the participating universities served as TEX-E Fellows in 2022-2023, and 64 did so for 2023-2024. These students engaged deeply with every facet of the TEX-E program and fostered a climate of energy innovation at their schools.
- **TEX-E Bootcamp for Climatetech Entrepreneurship:** Over 100 attendees came together at TEX-E's second-annual bootcamp, where students from Texas universities connected with educators from the Lone Star State and MIT to learn from leading energy innovation academics and prepare to tackle the climate crisis through entrepreneurship.

64
TEX-E FELLOWS

$50k
AWARDED TO STARTUPS

525+
PEOPLE IN TEX-E NETWORK

Connecting Key Climate Champions

Startup-Corporate Partnerships

87
CORPORATE PARTNERS

300+
CURATED CONNECTIONS MADE

Large, established private-sector players—corporates—have a critical role in climatetech innovation. Through their domain expertise and financial scale, corporates can contribute specialized resources and capital to accelerate technology development. Their position as incumbents in a largely B2B space also means corporates can unlock key commercialization pathways for innovation. And when it comes to achieving worldwide deployment, corporations' global footprints can serve as springboards for climatetech innovation to jump borders for sweeping transformation.

Greentown's Incubator Partnerships Program helps our 200+ startups engage with our full roster of corporate partners. Our **Greentown Go Accelerator Programs** zero in on a particular technology area within one of the key greenhouse-gas-emitting sectors, connecting one or two corporates with a small cohort of startups through a structured accelerator that speeds up successful collaborations.

INCUBATOR PARTNERSHIPS PROGRAM

Our Incubator Partnerships Program engages corporates in industries from energy to consumer packaged goods and invites them into dialogue with our community of climatetech startups through private pitch events, topic roundtables, industry deep dives, and more. These partners become advisors, mentors, investors, and pilot customers for our startups, and our startups, in turn, help them to advance their own innovation and sustainability priorities.

Here are just a few ways Greentown startups worked with our partners in 2023:

- **Cemvita** will provide up to 1 billion gallons of sustainable air fuel to Greentown partner United Airlines.
- **Syzygy Plasmonics** signed an investment agreement with Greentown partner Mitsubishi Heavy Industries and is partnering with nonprofit research institute RTI International to demonstrate sustainable fuel production from CO_2 and methane—a project sponsored by Greentown partners Equinor Ventures and Sumitomo Corporation of Americas.
- **American Battery Technology Company** and Greentown partner BASF are partnering to provide the North American market with a regional, closed-loop solution for lithium-ion batteries.
- **Advanced Ionics** closed a $12.5M Series A—led by Greentown partner bp ventures and with investments from Greentown partners Clean Energy Ventures and Mitsubishi Heavy Industries—for its green-hydrogen-producing electrolyzer technology.
- **Advent Technologies** and Greentown partner BASF signed a joint development agreement to establish an end-to-end supply chain for hydrogen-fuel-cell systems.
- **Amogy** raised $150M in Series B funding for its emission-free, energy-dense, ammonia-power solutions. Greentown partners Mitsubishi Corporation and Mitsubishi Heavy Industries joined the Series B-2.

Greentown Go

AT A GLANCE: GREENTOWN GO IN 2023

4
PROGRAMS CONCLUDED

4
ADDITIONAL PROGRAMS KICKED OFF

23
STARTUP GRADUATES

55
MENTORSHIP RELATIONSHIPS FORMED

15
ECOSYSTEM ORGANIZATIONS ENGAGED IN WORKSHOP SESSIONS AND MORE

With a mission of decarbonizing the key greenhouse-gas-emitting sectors, Greentown Go programs inject momentum and traction into startup-corporate collaborations, unlocking the power of climate solutions at scale.

Each track—Go Build, Go Energize, Go Grow, Go Make, and Go Move—leverages the same proven, year-long Greentown Go framework that has delivered dozens of partnership outcomes to date.

Through Greentown Go in 2023, dozens of startups participated in market discovery and technical diligence activities with corporate partners.

Together, these activities resulted in ongoing momentum toward:

- 3 corporate investments
- 2 MOU and LOI agreements
- 4 proof-of-concept studies
- 3 pilots, demonstrations, and feasibility studies
- 1 value-chain cohort collaboration among three Go startups

Thank you to our 2023-2024 Go program partners!

BASF, Magna, the Massachusetts Clean Energy Center, Mitsubishi Corporation (Americas), the M-Lab Companies, Saint-Gobain, Shell, and Vineyard Wind

Investor Program

Our investor program's mission is simple: to connect our startups with the capital they need to scale and succeed. From curating investor-startup matches to facilitating pitch practice and feedback, we're committed to helping our startups navigate the fundraising process. Members can:

- Get direct introductions and access to investors through our curated investor network
- Connect with key investors in their industries at Sector Pitch Days and other invite-only investor networking sessions
- Be featured in Deal Flow Digests, our regular content distribution exclusively for accredited investors that highlights our startups that are actively raising

1,400+
INVESTORS IN NETWORK

550+
CURATED CONNECTIONS

123
STARTUPS FEATURED IN DEAL FLOW DIGESTS

- Meet one-on-one with investors and partners via office hours
- Receive fundraising coaching and support
- Source peer-driven pitch feedback at biweekly Fundraising Forums
- Learn from and network with industry-leading investors through Greentown's Investor Speaker Series

Pilot Digests

Pilot digests connect our startups that are ready to pilot their technologies with the industry partners that have the resources to run these critical deployments. Sent to our corporate and investor networks, these quarterly newsletters promote collaboration and help startups reach crucial milestones for testing and validating their solutions.

84
STARTUPS FEATURED IN PILOT DIGESTS

840
INVESTORS AND CORPORATE LEADERS RECEIVING PILOT DIGEST

228
ORGANIZATIONS RECEIVING PILOT DIGEST

Venture Development Services

Greentown leverages our network to connect startups with subject-matter experts and later-stage founders who can provide much-needed mentorship on topics ranging from product development, to go-to-market strategy, to financial modeling, and beyond.

Our experts and advisors bring vast experience from diverse corners of the climatetech industry and startup venture development. Some have operational experience; others bring expertise in finance or professional services. Many of them are former founders themselves or have made their careers out of helping early-stage companies. All of them are passionate about helping Greentown startups.

EXPERTS-IN-RESIDENCE

Our two experts-in-residence in 2023 worked intensively with our startups' leadership teams on organizational development and venture development, covering topics including business and revenue modeling, value propositions, culture building, conflict management, onboarding systems and processes, and more.

"Expert-in-residence Mark Pacelle has been providing much-needed help on our ongoing conversations with large corporates for potential partnership, offering highly valuable insight that comes from his experience being on the corporate side of these conversations. Mark is also providing tremendous help in finetuning our pitch deck for our ongoing fundraising efforts."
—Ho-Jun Suk, CEO of DxLab

18

STARTUPS COACHED BY EXPERTS-IN-RESIDENCE, WITH MANY MORE ON THE WAITLIST

"Expert-in-residence Nupur Amin went above and beyond in her quality and amount of advice. Everything relayed was tactical, actionable, and so appropriate to the situations in which we found ourselves. I wish every company in Greentown could benefit from her valuable knowledge!"
—Marisa Reddy, CEO of Conduit Tech

COMMUNITY ADVISORS

Greentown's network of community advisors meet regularly with our entrepreneurs to offer guidance in their areas of expertise. Spanning a wide range of subjects—including diversity, equity, and inclusion strategies; fundraising; managing a board of directors; technical expertise; and more—these advisors provide invaluable knowledge and advice to our startup community.

42

COMMUNITY ADVISORS

30+

STARTUPS MENTORED BY COMMUNITY ADVISORS

Entrepreneur <> Entrepreneur Collaborations

The heart of Greentown is a thriving community of climatetech entrepreneurs who are always willing to lend expertise, support, and connections to their fellow members. Here are some of the ways we help them engage with each other:

- CEO and founder roundtables
- CTO and technical lead roundtables
- Investor Program featuring peer-driven pitch practice sessions
- Monthly meetings of members' safety representatives
- Social events, including Town Halls and member networking
- Greentown Resources + Information Directory (GRID)—our LinkedIn-style intranet
- Community-wide Slack workspace

220
INTERNAL EVENTS

44
EXECUTIVE ROUNDTABLES

Providers of resources + equipment

From hardware equipment to software tools to legal services, we connect startups with equipment and resource providers to supply the tools they need to thrive. All together, our members gain access to more than $1M in member resources annually.

$1M+
WORTH OF EQUIPMENT

55+
STARTUPS USE PROTOTYPING & WET LABS

$1M+
WORTH OF OTHER MEMBER RESOURCES

150
STARTUPS USE OTHER MEMBER RESOURCES

SOFTWARE

- **Prototyping Software**
  - Altium
  - Ansys
  - AspenTech
  - CodeValue
  - GitHub
  - Keysight Advanced Design System
  - MathWorks
  - Onshape
  - SOLIDWORKS
- **Business Software**
  - Amazon Web Services
  - Carta
  - Casserly Consulting
  - Doodle
  - HubSpot
  - Microsoft for Startups

LAB RESOURCES

Our labs are where the magic happens. Here, our members take their technologies from initial R&D to rapid prototyping while preparing for manufacturing and commercial development.

- **Prototyping labs**
- **Wet lab (BSL-2 in Boston)**
- **Machine shops**
- **Keysight electronics labs**
- **Stanley Black & Decker tool shops**

UNIVERSITY RESOURCES

- **University of Massachusetts Lowell**
- **Olin College of Engineering**
- **Center for Nanoscale Systems at Harvard University**

PROFESSIONAL SERVICES

- **Capital, fundraising, + grant support**
  - AngelSpan
  - Fidelity for Startups; Shoobx Cap Table
  - LTSE Equity
  - MassVentures
  - Pitchbook
  - StartEngine Crowdfunding
  - Visible
- **Hiring + marketing**
  - Design Match
  - Facet Search
  - FloCareer
  - Root & Leaf
  - S Brown Consulting LLC
  - Techsquads
  - Vacaré Group
  - Vensure Employer Services
- **Legal**
  - Chubb & Hilb Group
  - Foley Hoag
  - Gunderson Dettmer
  - Vinson & Elkins
- **Tax + accounting**
  - PwC
- **Manufacturing**
  - Boston Industrial Consulting
  - FORGE
  - SPEC Process Engineering + Construction
- **Professional development**
  - Habitus Incorporated
  - Lux Research
  - Next Rung Technology

Greentown works with many partners to make these lab spaces and equipment offerings available to our startups. Thank you to BASF, Shell, Keysight Technologies, the Massachusetts Clean Energy Center, and Stanley Black & Decker for making our Boston lab spaces possible, and to our Greentown Houston Founding and Grand Opening Partners: American Family Insurance Institute, Ara Partners, Bechtel, bp, Chevron, CenterPoint Energy, EIV Capital, ENGIE, FCC Environmental Services, Intel, Gexa Energy, Microsoft, Mitsubishi Corporation (Americas), Mitsubishi Heavy Industries, Naturgy, NRG, Rice Management Company, Saint-Gobain, SCF Partners, Shell, Sunnova, Tudor, Pickering, Holt & Co., Wells Fargo, White Deer Energy, Williams, Woodside Energy, and Vinson & Elkins.

"ACCEL has been amazing. I've really enjoyed the membership and programming. I think it's fantastic—if I met another Black or Brown founder focused on climatetech, I'd tell them to apply to this program, 100 percent." *—Chidalu Onyenso, founder of EarthBond*

ACCEL

Advancing Climatetech & Clean Energy Leaders

ACCEL is an accelerator from Greentown Labs and Browning the Green Space (BGS) that's dedicated to bolstering BIPOC-led startups as they develop critical climatetech solutions by offering access to funding, networking connections, resources, and opportunities that structural inequities put out of reach. This year-long program combines acceleration with a curated curriculum, incubation through Greentown membership, and extensive mentorship from Greentown and BGS's networks of industry experts.

2023 was the inaugural year of ACCEL, and it featured six incredible startups that built a tight-knit, supportive community. The cohort went through comprehensive training with our Curriculum and Resources Partner VentureWell, diving into everything from product-market fit, to value proposition development, to customer discovery and relations. They met regularly with expert mentors, reached key milestones, and charted their paths forward.

76
APPLICATIONS RECEIVED

$150K
IN NON-DILUTIVE STIPENDS FOR STARTUPS

11
EXPERT MENTORS

6
STARTUPS SELECTED

25
WORKSHOP SESSIONS

MEET THE STARTUPS

- **Active Surfaces** unlocks dual land-use applications through its ultra-thin-film, flexible solar technology.
- **DrinKicks** is developing sneakers made from food waste and recycled materials in an effort to engage the sneaker-enthusiast community in circularity.
- **EarthBond** leverages group financing and carbon accounting to lower costs and risk in the energy transition of Nigeria's $14B fuel-based, off-grid generator market.
- **florrent** is developing "marathon runner" energy storage solutions called ultracapacitors made from hemp farmed by BIPOC farmers.
- **frakktal** is a materials company developing bio-based polymers for the replacement of fossil-fuel-based feedstocks across industries.
- **SpadXTech** is reducing emissions in packaging, textiles, transportation, filtration, and more through its versatile material-platform technology.

"ACCEL gives participating startups a stipend, but all the benefit we're getting from the program is so much more than the monetary benefit. We have access to the great Greentown community, which helps with meeting investors, meeting potential partners, things like that." *—Lina M. González, co-founder of SpadXTech*

FEATURED COHORT MILESTONES

- **Active Surfaces** won $25,000 from the New Climate Ventures Sustainability Investment Prize at the 2023 Rice Business Plan Competition; took home the grand prize and audience choice award at the MIT $100K LAUNCH Competition; and was selected for both the 2023 Cleantech Open Northeast and Venture For ClimateTech cohorts.
- **DrinKicks** hosted its first annual sneaker drive at Greentown Houston, where the startup refurbished more than 100 pairs of old shoes and distributed them to underserved youth while demonstrating the ancillary services and opportunities that contribute to an equitable circular economy. Greentown partner ENGIE North America was a sponsor of the sneaker drive.
- **florrent** raised a $2.1M pre-seed round and its CEO Jose LaSalle was selected for Activate's 2023 cohort.
- **SpadXTech** conducted over 250 customer interviews and received non-dilutive funding from the National Science Foundation, the Massachusetts Clean Energy Center, and FORGE.

Thank You to ACCEL's Funders—the Massachusetts Clean Energy Center, Barr Foundation, bp, the Ion District, and Microsoft—and its Curriculum + Resources Partner, VentureWell.

Inspiring Climate Action

Future Climate Leaders

At Greentown Labs, we firmly believe that building a thriving, diverse, and just climatetech workforce is key to deploying climate solutions. Green job opportunities are increasing faster globally than any other job category, according to LinkedIn, and in about five years, we likely won't have enough climate workers to meet the industry's demand.

That means we need more people, inclusive of all backgrounds and experiences, to put their skills to work on climate—and it's why Greentown works hard to foster career pathways with our community of climatetech startups.

364
JOBS AMPLIFIED

On Greentown's website, social media channels, and newsletters

11k
DIRECT JOBS CREATED BY GREENTOWN STARTUPS (ALL-TIME)

Across fields from engineering, to business administration, to policy, and beyond

550+
CAREER FAIR & INTERN FAIR ATTENDEES

FROM AN INTERN FAIR TO A CLIMATETECH CAREER

"I started out with, 'Hi, my name is Danielle Nasser, and I'm not an engineer.'"

That's how Danielle, now Operations Manager at Greentown member Applied Bioplastics, first introduced herself to the startup at a Greentown intern fair. To her surprise, she was exactly the kind of person Applied Bioplastics was looking for.

Nasser, a recent graduate of the University of Houston, jump-started her career in climatetech by interning at Applied Bioplastics, and now works there full-time.

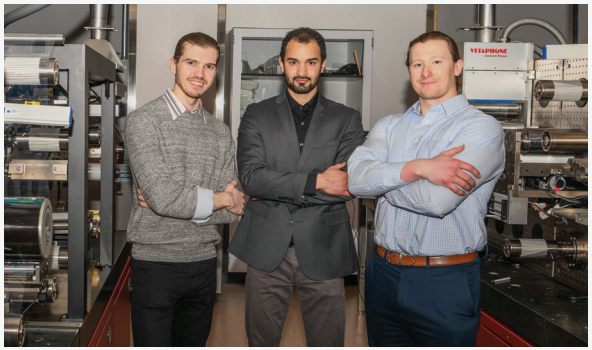
"To me, that shows that in this industry, everybody has a part, and there's value behind everybody's position," she says.

Inspirational Entrepreneurs

Our 200+ startups never fail to impress us with their hard work and commitment to scaling their climatetech solutions! Check out just a handful of their biggest accomplishments from 2023:

- **Form Energy** partnered with the State of West Virginia to build its first iron-air battery manufacturing facility in the city of Weirton; won a $12M grant from the New York State Energy Research and Development Authority to roll out a 10 megawatt/1000 megawatt-hour iron-air-battery system in New York State; partnered with Georgia Power to deploy a 15 megawatt/1500 megawatt-hour iron-air-battery system in Georgia; and deployed its technology at two of Xcel Energy's retiring coal plant sites.
- **Fervo Energy** and Google's next-generation, 3.5-MW geothermal plant, called Project Red, began supplying carbon-free electricity in Las Vegas.
- **Via Separations** collaborated with International Paper on deploying its first commercial-scale filtration system.
- **SWTCH** installed 929 Level 2 EV chargers at apartment buildings across Canada; collaborated with Plugin Stations Online to deploy 100 public EV chargers throughout New York State; and partnered with AutoGrid to integrate 250 EV chargers in multi-tenant properties into an active-demand-response program with a Canadian utility.
- **Enviro Power Technologies'** clean-energy-producing hot water system was installed in a 74-unit residential complex in New York City.
- **Phoenix Tailings** began production at the United States' first rare-earth refinery using its zero-waste, zero-emission technology.
- **Medley Thermal** planned to deploy its electric boiler system at Jay Peak Resort in "one of the largest standalone carbon-reduction projects in Vermont's history."
- **American Battery Technology Company** received two contracts from the U.S. Department of Energy: a $57M contract for its first-of-kind, commercial-scale, lithium-hydroxide-manufacturing facility, and a $20M contract to advance next-generation battery-recycling technologies.
- **Peak Power**, a provider of energy-optimization software and services, secured $200M to deploy and finance energy-storage projects for commercial and industrial facilities.

FLORRENT 'SEQUESTERS CARBON AND SEQUESTERS WEALTH' WITH HEMP-BASED ULTRACAPACITORS



As a child, Jose LaSalle dreamed of becoming an inventor. When his family hit hard financial times and lost access to gas, his entrepreneurial spirit found its mission: advancing "ecologically harmonious" energy while supporting a just energy transition.

LaSalle went on to study electrical engineering and materials science at the University of Massachusetts Amherst. His lived experiences and familial history continued to shape both his worldview and the work he hoped to do: coming from an Afro-Indigenous family, some of his relatives with ancestors who were enslaved maintain farms to this day—a trajectory that he says showed him how "regenerative agriculture can seed economic development."

LaSalle channeled his aspirations, values, and expertise into co-founding florrent, a startup making ultracapacitors with hemp grown by Black and Indigenous farmers.

Ultracapacitors complement batteries in the grid-scale use of renewable energy. Their specialty is in quickly releasing energy for spikes in power consumption, such as for electric-vehicle charging. florrent utilizes a running metaphor to explain the relative strengths of these two technologies: if batteries are marathon runners, then ultracapacitors are sprinters.

Ultracapacitors require activated carbon, which today is provided by either coconut husks or coal. Coal clearly has its environmental problems, but there are drawbacks to coconut husks as well: coconut palm trees are quite susceptible to climate change, and as they cannot be grown locally in many places, there are notable shipping-related emissions.

Hemp sequesters higher levels of carbon, and provides a higher-performance activated carbon for ultracapacitors—meaning a lower price per unit of energy. Crucially for florrent, hemp farming is common in the United States and is often grown by Indigenous and Black farmers. By supporting these local growers, LaSalle says florrent's tech is both sequestering carbon in hemp and "sequestering wealth" in the farmers' communities.

If its tech is deployed at scale, florrent says it can enable the abatement of 1.5 gigatons of carbon by 2050 (through supporting the use of renewables) and can sequester 2.2 megatons of carbon in the same period. The startup's customers include grid-asset developers, EV-charging-infrastructure providers, and ultracapacitor manufacturers.

florrent raised a $2.1M pre-seed round last year and LaSalle was selected for Activate's 2023 cohort. Its next major milestones are alpha production and commercial validation of its activated carbon, a key component of ultracapacitors.

florrent met its largest investor, MassVentures, via Greentown's Deal Flow Digest—an initiative of the incubator's Investor Program designed to connect fundraising startups with relevant investors.

"Investors are believing in what we're doing, believing in the team, and seeing the value," LaSalle says. "Greentown's been incredibly supportive. The Investor Program has led to so many investor conversations, some of which are already lined up for when we're ready to raise our seed. MassVentures is a great example: they're our biggest investor, and that connection was through Greentown Labs."

ALLOY ENTERPRISES DELIVERS ON-DEMAND, SCALABLE ALUMINUM PARTS TO LIGHTWEIGHT THE EV BOOM

Today's automotive industry is deeply reliant on steel, a material that accounts for roughly seven percent of global GHG emissions. On average, a vehicle contains about one ton of steel.

Steel is heavy and drags down efficiency. Lightweighting has already been a priority as the sector seeks to make internal combustion engine vehicles more efficient, but it'll become all the more critical with the shift to EVs; EVs are heavier, on average, due to their weighty batteries.

The automotive industry is turning to aluminum for lightweighting, and for good reason: aluminum has a high strength-to-weight ratio—double that of steel—and is highly recyclable. While aluminum manufacturing from raw materials involves high energy-related GHG emissions, using recycled aluminum cuts the energy needed by 95 percent.

But today's manufacturing techniques for fabricating aluminum parts—casting and 3D printing—can't keep up with the speed or scale necessary to address the automotive industry's voracious demand for aluminum. There's 550 percent more aluminum in vehicles today than 50 years ago, according to the Aluminum Association, and the EV boom is just getting started.

Alloy Enterprises, a Greentown Labs startup, has developed a novel method for producing aluminum parts: selective diffusion bonding. This novel process

creates parts layer-by-layer using laser-cutting, inhibiting, stacking, and diffusion-bonding (a type of welding).

Alloy Enterprises' technology can produce aluminum parts quickly, cost-effectively, and at scale, all while delivering performance improvements through more complex shapes and stronger material properties.

"We have customers that report two-year lead times to get cast parts, and that's just not the speed of innovation needed for electrification," says Alloy Enterprises' CEO and Co-founder Ali Forsyth. "Our value proposition is on-demand manufacturing at the unit cost of casting."

Crucially, Alloy Enterprises doesn't use aluminum powder, which is common in 3D printing today. By using aluminum sheets instead, the startup sidesteps 92 percent of the CO_2 emissions associated with aluminum powder, according to Forsyth.

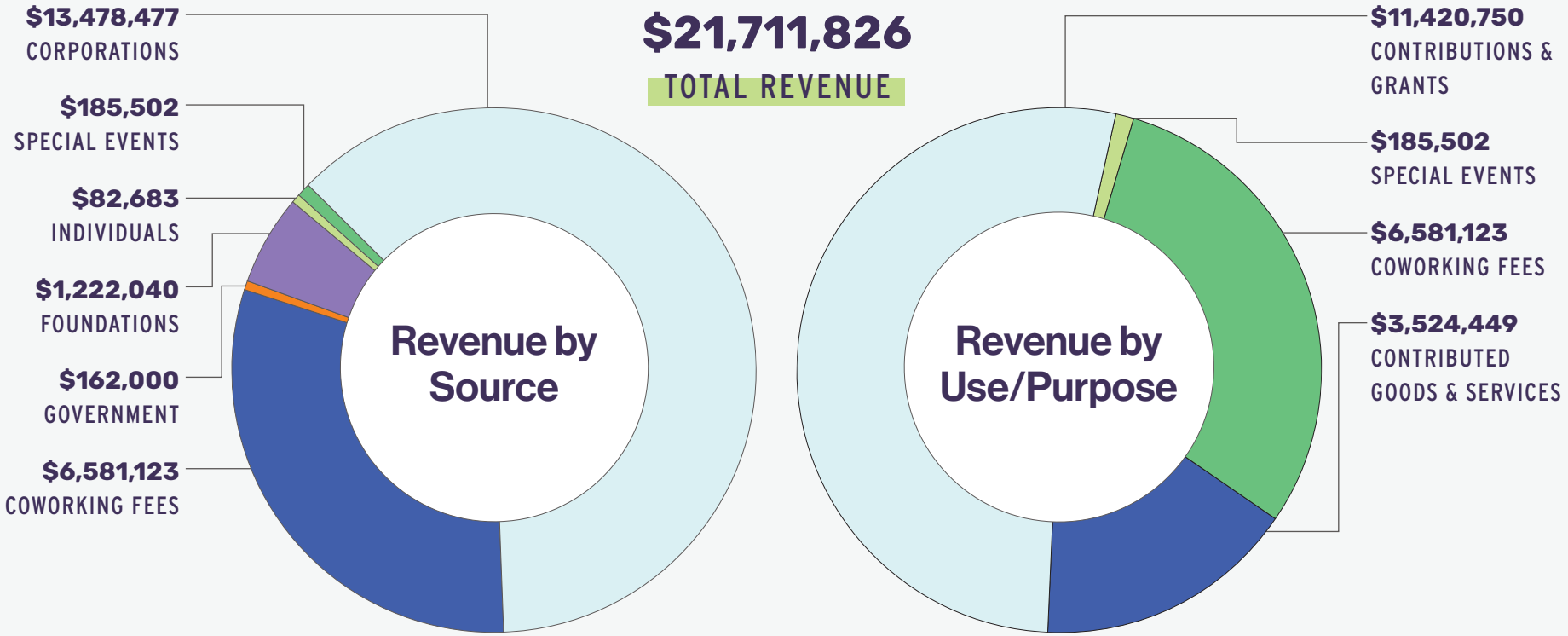
In addition to vehicles, Alloy Enterprises is also poised to manufacture parts for heavy and industrial equipment and the aerospace industry.

The startup announced an oversubscribed $26M Series A round in 2023. This funding allowed the startup to grow its team and put it on track to reach pilot scale by the close of 2024.

While Forsyth is a first-time founder, she's no stranger to the startup journey—and no stranger to Greentown. An engineer by training, she's worked at three Greentown member companies throughout her career.

"Greentown is really part of my story; I've woven in and through this community many times and been the lucky recipient of a lot of benefits," Forsyth says. "When I think about how Greentown helps you build a company, what I keep coming back to is the fact that Greentown is an ecosystem and a community. People are helpful and supportive of their fellow founders."

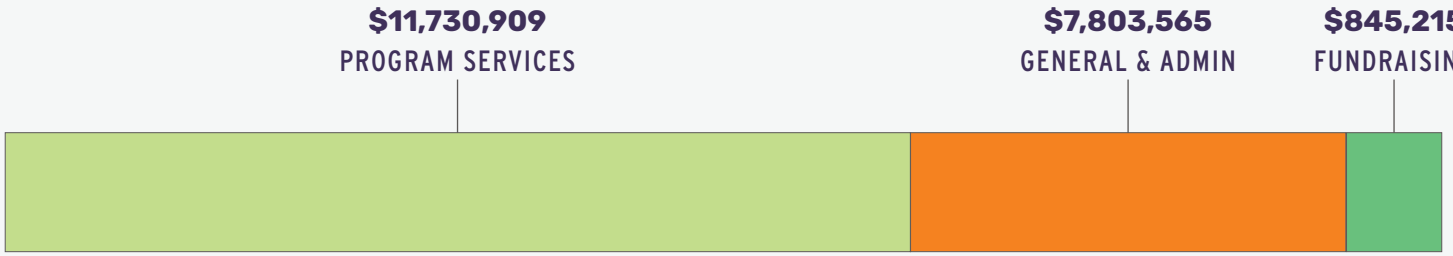
Financials



Expenses

$20,379,690

TOTAL EXPENSES



Financial data is not yet audited and is subject to change. These financials are representative of both Greentown Collaborative, Inc. and Greentown Labs, Inc.

Thank You to Our Partners + Donors

Foundations and individual donors help make our mission-driven work possible. We'd like to extend a heartfelt thank you to everyone who contributed financially in 2023, including some of our largest donors:

- The Kung Guerra Foundation
- Barbara Burger
- Katherine Hamilton
- Dawn James
- Steve and Alicia Bolze
- Mitch Tyson
- Sara Mattern
- David Silverman
- Martin Heffler
- Jennifer Daloisio
- James Wittliff
- Scott Bruns
- Jordan Pentaleri
- Helen Fairman
- Ming Guo
- Clement Cid
- Tibor Toth
- Francesco M. Benedetti
- Kameel Nasr
- Nina Birger
- Nisha Desai
- Paul Scott
- Monica Kabel
- Bahruz Mammadov

Grant Donors

- Woka Foundation
- The U.S. Department of Energy
- Massachusetts Clean Energy Center
- JPMorgan Chase
- Wells Fargo
- The U.S. Economic Development Administration
- The Ion
- Breakthrough Energy
- The Barr Foundation
- Spitzer Charitable Trust
- National Renewable Energy Lab

Act on climate with Greentown!

Greentown Labs

www.greentownlabs.com
@GreentownLabs

Greentown Boston

444 Somerville Ave.
Somerville, MA, 02143
hello@greentownlabs.com
888.954.6836

Greentown Houston

4200 San Jacinto St.
Houston, TX 77004
hellohtx@greentownlabs.com
346.571.5627