



IMPACT REPORT

2021

**LAUNCH
ALASKA**

launchalaska.com

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Letter From Our CEO

I've been thinking a lot about VUCA recently, and – whether you realize it or not – you probably have been, too.

VUCA, which stands for Volatility, Uncertainty, Complexity, and Ambiguity, is a term originally introduced by the Army War College in the waning days of the Cold War that offers a way to think of the world around us. There can be low VUCA periods – like the relative political calm and economic growth of the 1990s – or high VUCA moments – remember how confused, angry and anxious you felt after 9/11?

For most of us, 2021 was an off-the-charts high VUCA year. The COVID-19 pandemic continued to cause uncertainty and fear, despite the promise of vaccines. Companies struggled to adapt as they dealt with supply chain issues, the “Great Resignation,” and all other obstacles from the virus and its unpredictable waves that kept us all from doing business as usual.

Which is why I find the pages that follow to be remarkable. In the midst of all that VUCA, 2021 turned out to be – by a significant margin – the most productive year we've had at Launch Alaska so far. Projects were signed, technologies were deployed, and companies grew – some so quickly

that we had to triple check our math. Even our own staff doubled in size, from five team members to 10.

My initial thinking was that all this growth happened despite the world around us. Upon further reflection, I've come to believe that this growth happened specifically because of the world around us. Any time there is a shock to the global energy, transportation or industrial systems, the world looks for technologies and solutions that are resilient, agile, responsive, distributed and local. Just the sort of technologies our portfolio companies offer.

Do not ask me to predict what will happen next week. Or next month. Or even later today. The only thing I can predict is that as the world looks to grapple with the great disruptions of our time, our companies and partners will have the solutions that are ready to scale.

We hope you'll join us on this journey.



Isaac Vanderburg
CEO

What We Do

As Launch Alaska’s team has grown, so has our reach. Our core program is still a climate tech accelerator but we’ve found new ways to maximize our impact and help companies deploy while continuing our mission to accelerate the resource revolution.

Launch Alaska’s team consists of four core divisions:



TECH DEPLOYMENT
TRACK



PORTFOLIO



DEPLOYMENT



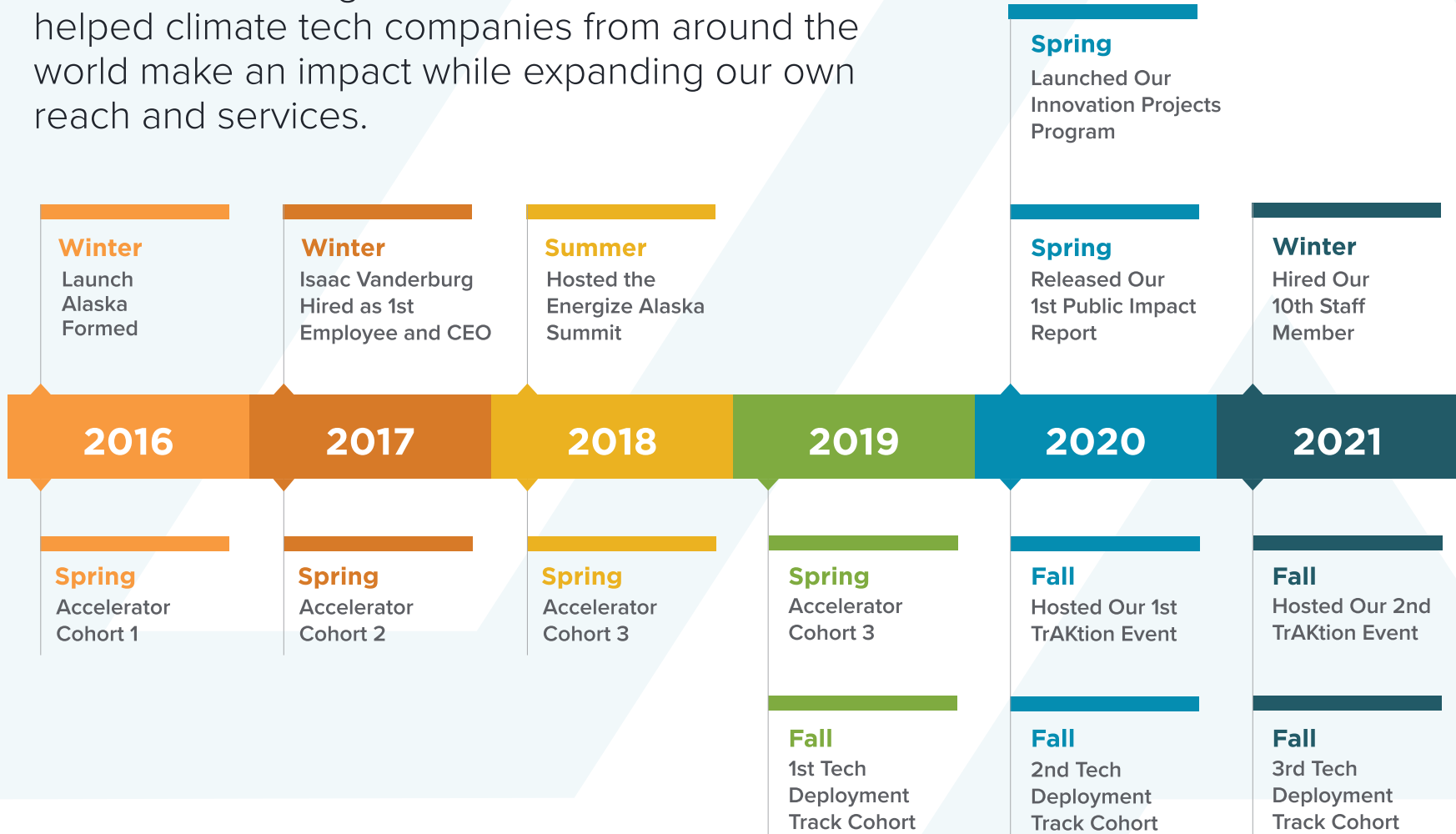
PARTNERSHIPS

Each division works strategically with the others to urgently decarbonize our world by getting solutions to energy, transportation, and industry challenges into use in Alaska.

We closely track and report out information about the companies we work with and our own internal work. This allows us to show progress and provide transparency to the community and partners. You’ll see the data broken out by program to see our overall reach.

Our Timeline

Since our founding in 2016, Launch Alaska has helped climate tech companies from around the world make an impact while expanding our own reach and services.



Tech Deployment Track



What is the Tech Deployment Track?

The Tech Deployment Track compresses time, proximity, and attention needed to forge partnerships, identify projects, and move promising climate tech companies toward deployment of their products or services in Alaska around energy, transportation, and industry.

Startup CEOs work annually from September through April with a panel of industry experts, mentors, decision-makers and connectors to set ambitious goals and aggressively move toward securing and deploying projects. The program helps startups prioritize and progress on customer discovery, market fit and project plans in partnership with Alaska customers, subject matter experts and key stakeholders. Companies remain in the Tech Deployment Track program as long as they demonstrate continued traction toward project deployment in Alaska.

Success for Launch Alaska is when startups find project partners in Alaska to deploy their tech, and investors and project partners access young companies with promising technology and plans for growth.

In 2021, the Tech Deployment Track was held virtually in response to the COVID-19 pandemic. Nineteen companies were selected to participate in the program which generated over 300 customer leads. Participating companies were from all over the world, including Finland, Spain and Nigeria.

New Portfolio Companies

Of the original 19 companies that started the 2021-22 Tech Deployment Track, four companies were accepted into Launch Alaska's Portfolio. Those companies showed significant traction toward deploying a project in Alaska based on leads and support provided by the Tech Deployment Track.



EcoSPEARS (Altamonte Springs, Florida) eliminates toxins like PCBs (Polychlorinated Biphenyls) and other persistent organic pollutants from the environment utilizing non-thermal and non-combusting remediation technology developed by NASA.



Radiant (El Segundo, CA) develops portable nuclear power reactors that can replace diesel generators that improve local air quality, reduce global warming, and can be shipped out to be refueled, leaving a superior natural environment.



Kartorium (Anchorage, Alaska) provides a customizable, 3D training tool for non-technical workers in heavy industries, allowing employers to provide training digitally, efficiently, and safely.



CalWave (Oakland, Calif.) works on technologies that utilize the vast energy of ocean waves with superior, scalable power generation.

Portfolio

We work side-by-side with game-changing startups to help them scale solutions to the planet's hardest problems.

Portfolio companies have completed the Tech Deployment Track program and continue to receive support from Launch Alaska as they deploy climate tech in Alaska. Portfolio companies are invited to our exclusive annual Investor Day, where they are connected to our investment partners who are leading the way in financially supporting climate tech companies.

Here you'll see the impact our portfolio companies have in Alaska and beyond, both environmental and financial, as well as how the companies are leading innovators in their fields.





Portfolio Impact

Our portfolio companies are aggressively pursuing innovative ideas in climate tech, both in Alaska and globally. We work with companies from all over the world that have interest in doing business in Alaska.

28 Active Portfolio Companies

13 Average Employees

Our portfolio companies are getting larger. They have an average of 13 employees per company compared to 8 employees per company in 2020.



Vertical Breakdown

- 14 Energy
- 8 Industry
- 6 Transportation

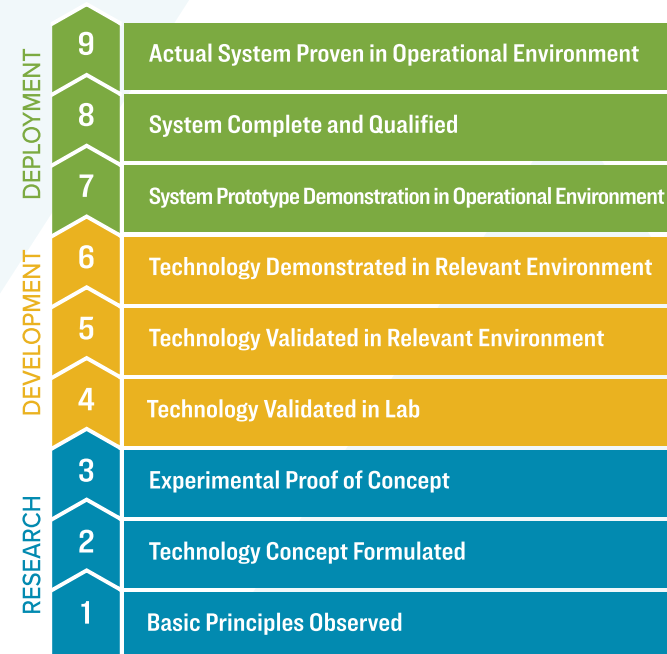
\$47M Average Valuation*

2018	2019	2020
\$4.0M	\$11.6M	\$12.6M

* Average valuation only includes companies with a set valuation.

6.8 Average TRL

Technology Readiness Levels (TRL) is a measurement system initially developed at NASA and used to assess the maturity of a particular technology. Our companies range from TRL 1.5 to 9 with an average of 6.8 across our portfolio.



TECHNOLOGY READINESS LEVEL (TRL)

Adapted from NASA, Cyclotron Road, and the European Union TRL Frameworks

Economic Impact

Our portfolio companies are adding more jobs, finding new revenue and raising more funding than ever before.



65 Net Jobs Created

We saw enormous job growth across our portfolio with 65 total new hires, equating to about 2 new hires per company. 2020 = 14 Jobs Created

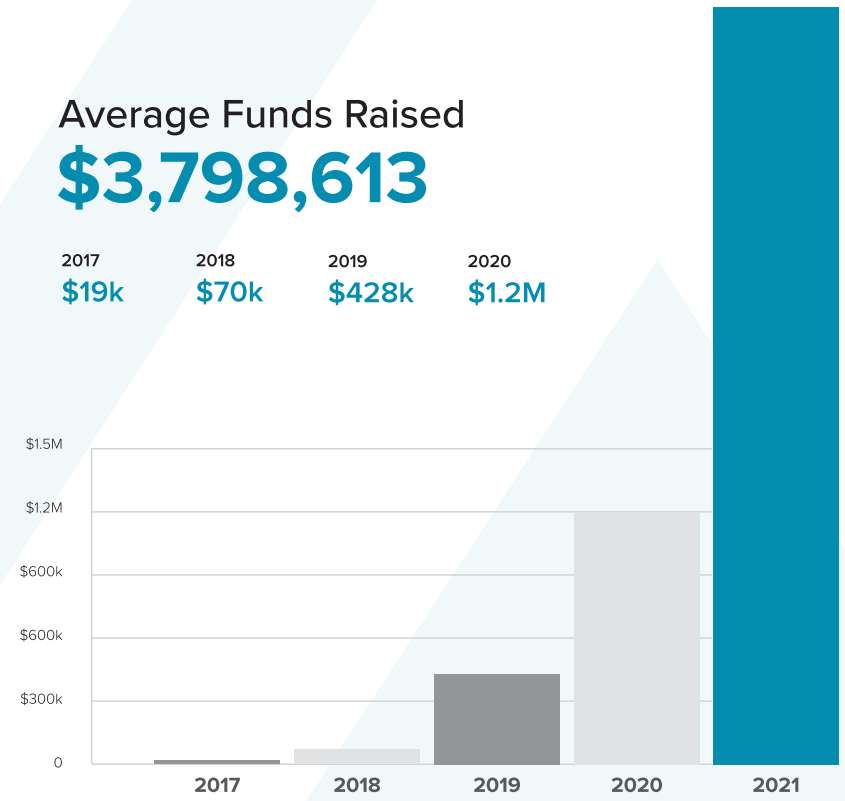
1 Company Exit

We saw our first exit in 2021 through a reverse merger.

Average Funds Raised

\$3,798,613

2017	2018	2019	2020
\$19k	\$70k	\$428k	\$1.2M



Our companies again tripled the average funds raised year over year.

Alaska Impact

Our portfolio companies are making a real impact at home by bringing projects and funding to Alaska.

PROJECT COMMITMENTS IN ALASKA

17 Total Projects

\$3.2M Total Value

PROJECTS DEPLOYED IN ALASKA

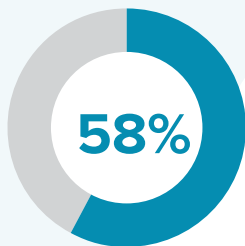
12 Total Projects

\$575k Total Value

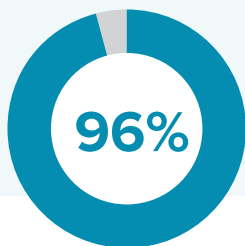
Environmental, Social, and Governance (ESG) Impact

ENVIRONMENTAL

Over the years we have narrowed our efforts to focus on companies that directly reduce emissions or provide a positive environmental benefit. We support these companies to make sure they have the bandwidth and tools to report out through standardized environmental, social and governance metrics.



58% of our portfolio companies are currently tracking their environmental impact



96% of our portfolio companies mitigate climate change or otherwise improve the environment

Environmental, Social, and Governance (ESG) Impact

ENVIRONMENTAL

Our portfolio companies are saving energy through efficiency, generating renewable energy, and avoiding CO2 through the products and services they sold in 2021.

4,993

Lifetime Energy Savings (kWh)

29,882

Lifetime Renewable Energy Generated (kWh)

691,293

Lifetime GHG Reduction (metric tons CO2e)



This CO2e reduction is equivalent to taking 150,000 cars off the road for a year.

(U.S. Environmental Protection Agency)

Environmental, Social, and Governance (ESG) Impact

SOCIAL & GOVERNANCE

We've taken a closer look at the social and governance parts of ESG over the last year. As part of this effort we've asked our portfolio companies about the composition of their executive team and their board members to make sure they equitably serve diverse populations.

Female & New Majority Executives

23% FEMALE EXECUTIVES

24% NEW MAJORITY EXECUTIVES

Female & New Majority Board Members

16% FEMALE BOARD MEMBERS

29% NEW MAJORITY BOARD MEMBERS

Climate Success Stories

Several years ago hardly any Launch Alaska companies were tracking their environmental impact.

Now this has become the norm and we're able to dive deeper into the true carbon reductions our portfolio companies are able to provide.

These are just a few examples of how our companies are working to mitigate climate change.





Blue Ocean Gear

Blue Ocean Gear makes intelligent, connected buoys for commercial fishing fleets to track gear on the ocean. This reduces the time needed to search for gear by about two hours every day.

This decreased engine run time equates to about 75 liters of fuel reduction for large vessels and 19 liters of fuel reduction for small vessels, or when extrapolated across all Blue Ocean Gear deployments in 2021, 157 metric tons CO₂.

Blue Ocean Gear also improves the environment through marine debris reduction. They are able to eliminate the typical 10% loss rate of fishing gear – which is often plastic waste – through intelligent tracking. In 2021, Blue Ocean Gear prevented an estimated total of one metric ton of fishing gear from becoming ocean debris.



157
metric tons of CO₂
were avoided



signal

Signal is a software app and communications service that combines operational data analytics with behavioral science and targeted employee feedback to substantially reduce operational costs and harmful greenhouse gas emissions.

Signal initially demonstrated their technology in aviation but has since expanded into marine shipping. Last fall, a proof of concept project with Bernhard Schulte Shipmanagement Germany demonstrated a significant reduction in fuel consumption as seafarers were nudged to optimize the ship's performance.

This resulted in an estimated reduction of 13,500 metric tons CO2 emissions across the 28 ships over a three-month trial period.

13,500

metric tons of CO2
were avoided

“This ground-breaking work in shipping shows just how important seafarers are to our global environmental objectives and what happens when we empower them with the right feedback.”

DAN WHITE, CEO AND CO-FOUNDER AT SIGNAL

VECKTA[®]

VECKTA integrates the world's most advanced energy system engineering tools with an end-to-end marketplace.

Based on the transactions that have occurred in their marketplace through 2021, VECKTA will have enabled a positive impact of over 3,750 metric tons of CO2 reductions over the lifetime of the projects.

In 2022, they expect to see over 35 MW of new projects transacted through VECKTA's marketplace with the ability to reduce carbon emissions by over 50,000 metric tons CO2 per year.

This is in addition to operational benefits of increased resilience, security and cost certainty over the life of the systems.

OVER
3,750
metric tons of CO2
were avoided





Aquacycl provides the only technology to treat high-organic wastewater, eliminate sludge, and operate with low or net-zero energy requirements.

In 2021, Aquacycl performed industrial pretreatment for a large food and beverage production facility in California. This project saved the company between 20-60 percent on their sewer bill and reduced CO2 emissions by 85-95 percent.

20-60%
reduction of
sewer bill

85-95%
reduction in CO2
emissions



Portfolio Updates

Our portfolio companies continue to expand and deliver climate technology to customers, gaining business traction, awards and contracts in Alaska and around the world. The following four companies represent just a few of our companies that have made significant progress in 2021.



Global supply chain shortages and lead times have been an uphill battle throughout 2021, but as a result Blue Planet Energy, Inc. diversified its vendors and increased its upfront investment to procure the necessary resources and deliver premium products as efficiently as possible. The company has continued to grow its dealer network and now has certified dealers in 41 states and 14 countries. They also launched a new integrated monitoring and control solution in 2021 called Nāmaka that enables fleet-wide system management for all of their installed projects.



Customer demand has been soaring for Parallel Flight Technologies. The company saw increased customer traction in 2021 by signing 30 LOIs for 937 units valued at \$325 million in estimated revenue. The company also raised \$6.5 million in private investment and received a U.S. Department of Agriculture Phase II grant in the amount of \$650,000. They also made big technological advancements, with an ongoing test program flying drones fully autonomously with up to 100 pounds of payload.



In 2021 Dynamhex closed its \$1.5M pre-seed round, completed contracts with four utilities, the Electric Power Research Institute, and the U.S. Air Force. Dynamhex also grew their municipal practice with their first contract with a county and their first selection as statewide contractor with the Commonwealth of Massachusetts. Dynamhex will be fundraising in 2022 to support its existing business growth and new business with corporations, financial companies that report to Partnerships for Carbon Accounting Financials, and insurance companies.



Onboard Dynamics fully launched their latest product, the GoVAC Flex system used for pipeline evacuation of natural gas during pipeline operations. The company also secured a major equity sponsor in BP Energy Partners in November 2021 and are now gearing the company up for full-on growth and scale.



Deployment

In 2021, Launch Alaska took steps to add more impact in Alaska by scaling up our Deployment team.

Our Deployment team works with companies during the Tech Deployment Track and once they become Portfolio companies after they complete the program. The following four companies also work with partners across Alaska through our Innovation Projects to deploy energy, transportation and industry technology outside of our traditional accelerator program.

Deployment Team Buildup

In 2021, Launch Alaska added three new members to build out our official deployment team. These individuals bring decades of experience and have been vital in supporting portfolio companies and innovation projects over the last year.



Tim Leach

TRANSPORTATION LEAD

Tim brings over 16 years of experience working in the energy sector for non-profit, for-profit, and state-owned corporations and academia. Through his own business under contract with the Alaska Energy Authority, Tim led the Alaska Electric Vehicle Working Group to bring diverse stakeholders together with the goal of reducing barriers to vehicle electrification.



Brij Hall-Potnis

DEPLOYMENT LEAD

Brij is passionate about building real things, leveraging game changing technologies, and addressing equity and inclusivity. Brij has a Master of Science from the University of Alaska Fairbanks and over two decades of experience in oil & gas overseeing complex projects, optimizing processes, and innovating solutions.



Matt Nejati

ENERGY LEAD

Matt has nearly a decade in engineering and business development roles focused on off-grid and grid tied microgrids, including projects across Alaska. He has a passion for linking the technical benefits of clean energy technologies, including renewables and battery energy storage systems, with the economic and social benefits, particularly in remote communities.

INNOVATION PROJECT HIGHLIGHT

Port of Alaska

The Port of Alaska is a lifeline for the state. With limited manufacturing and almost all consumer goods imported, the port handles 90 percent of products consumed by Alaska residents. However, the port's power infrastructure has room to improve in order to meet today's reliability and resiliency requirements.

To facilitate those improvements, Launch Alaska is using its energy expertise to coordinate a power plan for the port.

The plan includes a series of power-related projects that combine into a complete, sustainable power system that will add resilience to the port during emergencies and reduce overall carbon emissions.

This includes a microgrid made up of solar PV, energy storage (including emergency backup generation), system metering and controls to enable efficient system management and operation.

By improving the power system, the port will improve operational efficiency, add renewable power generation and improve the port's environmental impact by working to decarbonize its operations.

2021 marked the first full year of Innovation Projects for Launch Alaska. We've made major headway on some projects and look forward to sharing more in the future.

Portfolio Deployment Projects

Our portfolio companies are leading the way when it comes to deploying groundbreaking tech in Alaska and beyond. These two portfolio companies made notable progress in 2021.



PORTFOLIO DEPLOYMENT PROJECTS

Ampaire

In 2021, Ampaire moved ahead with commercialization by converting a Cessna Grand Caravan that was purchased in Alaska as the company's first commercial product, the Eco Caravan. The Eco Caravan is a hybrid electric upgrade of the Textron Aviation Cessna Grand Caravan conventional propulsion aircraft. The electrified propulsion technology developed by Ampaire is estimated to reduce carbon emissions by as much as 50 percent on its first-generation aircraft, helping to eliminate 915 million tons of carbon per year.

With fully upgraded next generation systems under the hood, Ampaire's Electric EEL plane is a dedicated flying testbed for advanced technologies under a contract with the U.S. Department of Energy, ARPA-E.



PORTFOLIO DEPLOYMENT PROJECTS

Aquagga

In 2021, Aquagga Inc. went from one success to the next, working to find solutions to destroying PFAS. Aquagga was awarded three Phase I Small Business Innovation Research awards from the National Science Foundation, the Environmental Protection Agency, and the U.S. Air Force. With the addition of the non-dilutive funding and some early angel investors, Aquagga doubled the size of its team to eight people.

Aquagga was also awarded first place in the U.S. Environmental Protection Agency's "Destroy PFAS Challenge" and demonstrated some of the most effective processes for destroying both long-chain and short-chain PFAS molecules anywhere in the world. At the end of 2021, Aquagga was notified to be one of nine companies in the US to be awarded a Phase II Small Business Innovation Research grant from the U.S. Environmental Protection Agency. This, along with other funding, will allow for the first pilot demonstrations on sites across Alaska in 2022.



Partnerships

Partnerships make our work possible. Together, we build demonstration and commercial projects, scale solutions across national and international markets, and spur innovation through programs like Tech Deployment Track, TrAKtion, and Investor Day.



Our partners provide significant financial and developmental support for the work we do.

A special thank you to our Mission and Infrastructure Partners.



Mission Partners

U.S. OFFICE OF NAVAL RESEARCH

Major long term funding support for Launch Alaska is provided by the U.S. Office of Naval Research (ONR). It provided critical support in our earliest days and has continued to support our work to develop additional partnerships and programming.



U.S. DEPARTMENT OF ENERGY

Launch Alaska was one of 10 incubators and accelerators awarded U.S. Department of Energy (DOE) Energy Program for Innovation Clusters (EPIC) funding. This funding allows Launch Alaska to stimulate energy and related hardware technology development and rapidly expand the growing cluster of companies developing and deploying energy solutions in Alaska.



Infrastructure Partner

MCKINLEY ALASKA PRIVATE INVESTMENT, LLC

McKinley Alaska focuses investment in areas of technology, renewable energy, transportation, energy services and infrastructure. This focus aligns perfectly with Launch Alaska, which enhances McKinley Alaska's ability to identify, analyze, and invest in Alaska on behalf of its clients while supporting our ability to build real projects in Alaska.

Board of Directors



Michael Bourdukofsky
Program Director, Alaska Native
Science & Engineering Program
(ANSEP)



Dane A. Boysen
Founder and CEO, Modular
Chemical Inc.



Chad Estes
Office Tax Managing Partner,
BDO USA



Tom Hsieh
Northern Pacific Airways



Joe Jacobson
McKinley Alaska Private
Investment, LLC



Michelle McNulty
Planning Director, City of
Flagstaff, Arizona



Mary Miner
Vice President, Community
Development, Alaska Growth
Capital



Daniel Mitchell
CFO, Cook Inlet Region Inc. (CIRI)



Angela Rodell
Volunteer, Juneau, Alaska

Our Team

LEADERSHIP



Isaac Vanderburg
Chief Executive Officer



Rob Roys
Chief Innovation Officer,
Deployment



Frances Ball
Chief Operations
Officer



Tracy Bye
Chief Financial Officer,
Finance



Penny Gage
Managing Director,
Program



Pam Kauveyiakul
Chief Partnerships Officer,
Partnerships & Program

DEPLOYMENT



Tim Leach
Transportation Lead,
Deployment



Matt Nejati
Energy Lead,
Deployment



Brij Hall-Potnis
Deployment Lead,
Deployment

PROGRAMMING & OPERATIONS



Suzanna Caldwell
Tech Deployment Track
Lead, Program



Haleigh Reed
Climate Technology
Fellow, Operations



Janelle Ocampo
Business Manager,
Operations



Kirsten Swann
Communications Manager,
Operations



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