

NEW ENERGY NEXUS

USA

IMPACT REPORT
2022



ABOUT NEW ENERGY NEXUS

New Energy Nexus is the world's leading clean energy ecosystem builder. We provide funding, accelerators, and training to help diverse entrepreneurs build a 100% clean energy future, from emerging tech through to clean energy adoption and distribution.

Our Vision

An abundant world with 100% clean energy for 100% of the population, in the shortest time possible.

Our Mission

To support diverse entrepreneurs to drive innovation and build equity into the global clean energy economy.

Our Goal

To reach 100,000 entrepreneurs by 2030.

Our Impact



Tackling climate change



Building an equitable clean energy economy



Increasing energy access



Creating green jobs



Connecting innovation ecosystems

2022 IMPACT IN NUMBERS

USA

Entrepreneur Data



87

Entrepreneurs supported

Supporting startups across each stage of their journey



Startup Data



55

Portfolio startups



27.27%

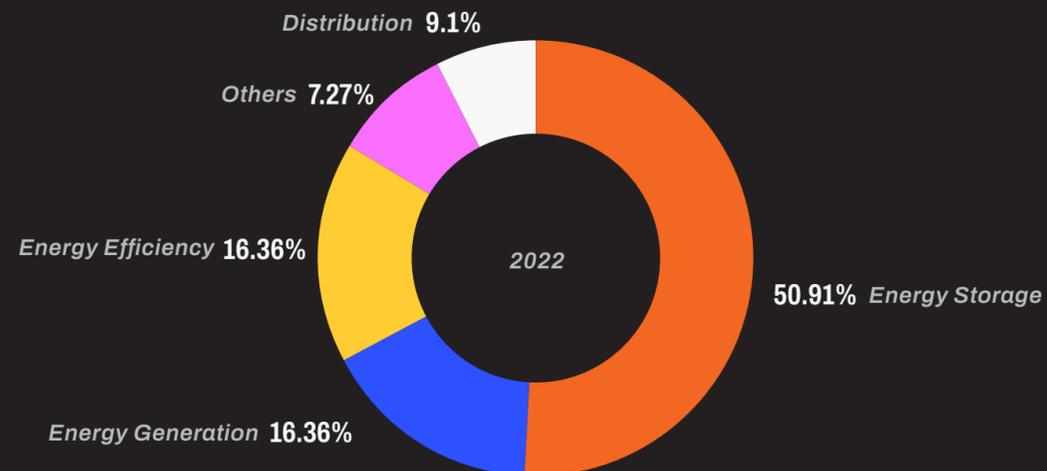
Women in leadership
(Founder/co-founder/c-suite)



US\$10.5 Million

Awarded to startups
**including \$3.1M in CalTestBed lab vouchers*

Startups by sector



Q&A WITH DENISE RUSHING

Managing Director at
New Energy Nexus California



What are your major achievements of 2022?

We continue to forge a key role in California's support of early-stage innovators. As stewards of US\$66 million in funding by the California Energy Commission, the CalSEED program propels the advancement of a diverse portfolio of clean energy startups with US\$6.6M awarded to 30 CalSEED companies in 2022. Last year the CalTestBed Initiative celebrated its program renewal of US\$11M supporting lab testing vouchers and welcomed its second cohort of 15 companies slated for technology validation. Funded by private philanthropy, the Salton Sea Innovation and Entrepreneurship Accelerator aligns stakeholders to remove barriers and accelerate community-level innovation to bring clean energy to market.

What unique role does New Energy Nexus play in California?

We are working to cultivate a mission-oriented innovation ecosystem to secure an equitable clean energy transition. As part of this effort, NEX implements the California Energy Commission's CalSEED and CalTestBed programs, and is an established leader in the state's funding and technology acceleration supporting diverse

early-stage clean energy innovators. As a result of CalSEED's inclusive outreach, 60% of funds have been awarded to companies led by underrepresented groups including women, with 59 companies operating directly in disadvantaged or low-income communities. Our commitment to creating a more inclusive clean energy ecosystem is further reflected in the forthcoming Salton Sea Innovation and Entrepreneurship Accelerator, a collaboration with local partners and community colleges on an interactive demonstration project for community-led innovation.

What are you excited about for 2023?

In the coming year, our portfolio of public and privately funded programs will drive breakthrough strategies for inclusive clean energy innovation. The CalSEED program will continue with its 5th cohort in collaboration with program partners, with freshly redesigned programming aimed at incorporating justice, equity, diversity, and inclusion principles into their growth plans. We are also excited to be working closely with diverse stakeholders in the Salton Sea region on accelerating community led innovation by identifying and removing on-the-ground barriers to creating an inclusive clean energy economy.

Q&A WITH KATE FRUCHER

Managing Director at The Clean Fight /
New Energy Nexus New York



What are your major achievements of 2022?

In addition to the successful completion of our second cohort focused on climate tech solutions in mass market buildings, The Clean Fight has secured new grant funding that will enable a significant expansion of our programming. We received a US\$2M U.S. Department of Commerce award to expand into new practice areas within our core accelerator, and a US\$3M Build Back Better award by the U.S. Economic Development Administration to accelerate battery innovation and manufacturing in New York. Additionally, we were selected to manage NYSERDA's US\$10M Empire Technology Prize, to help solve the critical issue of decarbonizing tall buildings.

What unique role does New Energy Nexus play in New York?

The Clean Fight's main differentiator is our focus on growth-stage startups from around the globe - we already have 50% of the innovations we need to decarbonize, and our goal is to enable the rapid scaling of those solutions. We are one of the few groups in the country that is concentrated specifically on the rapid scaling of proven solutions.

With NEX being an international organization, we are uniquely able to source the best growth-stage startups globally, providing them with an entrypoint into the New York market. We are committed to ensuring a just energy transition, which means we focus on areas that have the most potential to impact under-served communities, and we ensure that our startup's management teams are reflective of our own diversity, equity, and inclusion goals.

What are you excited about for 2023?

In 2023, we will be running multiple programs simultaneously for the first time, and are excited about the increased impact this will enable us to achieve. Additionally, we will be experimenting with new types of programming outside of our core accelerator to explore and better understand the most impactful models of adoption.

Not only will we complete our first energy storage cohort in Spring 2023, we will also be administering and managing NYSERDA's US\$10 million Empire Technology Prize as well as participating in the New Energy New York coalition. This coalition is dedicated to accelerating innovation in battery technology and transforming New York State into a global hub of energy storage manufacturing.

WHAT WE DO



The Clean Fight

The Clean Fight is New York State's first accelerator to work with high-impact growth-stage companies. It works with visionary customer and capital partners to accelerate the adoption of market ready climate solutions that have the greatest potential to equitably impact the broader New York market.



90%

Cohort companies established

a base or grew their workforce in New York since the start of their respective programs (2020-2022)

In 2022, we supported nine companies in our second cohort, which was focused on solutions to decarbonize and electrify New York's non-luxury residential and commercial buildings, with a particular focus on affordable housing. We also launched our third cohort, focused on battery and energy storage solutions that can help speed the clean energy transition and position New York State as a hub for energy storage innovation, development, and manufacturing.

CalSEED

CalSEED implements Concept and Prototype awards for early-stage innovators, granting them up to US\$600,000 in non-dilutive funding, tailored professional development, and access to the best accelerator and incubator programs in California. These funding and support services provide critical early stage development that they may not otherwise find in the market. CalSEED is committed to bringing the benefits of a clean energy economy to the most underrepresented communities by encouraging a diverse entrepreneurial pipeline and ensuring access and inclusion are at the center of their ideations.

In 2022, the CalSEED team executed a program extension that secured US\$24M in funding through 2026, inaugurated its 5th cohort of 23 Concept awardees (US\$150K), and initiated contracting for seven prototype awardees (US\$450K).

116 startups awarded since 2016:

- › **46% Underrepresented groups in leadership**
- › **29% Headquarters or pilot/demonstration projects California disadvantaged communities**
- › **40% Headquarters or pilot/demonstration projects low-income communities**

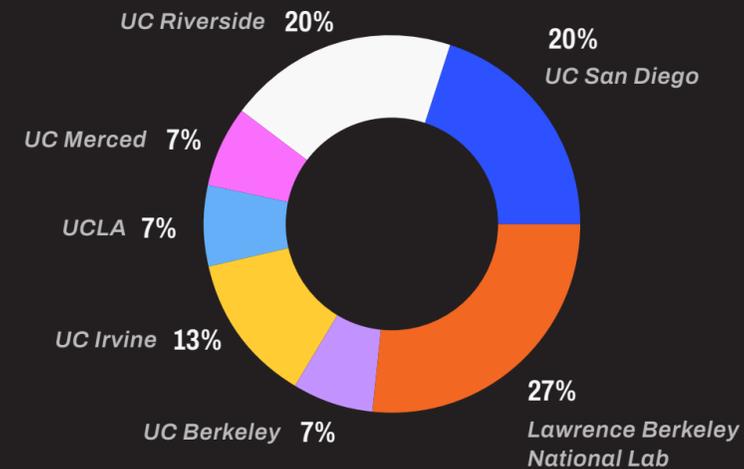
WHAT WE DO



CalTestBed

CalTestBed is a unique initiative funded by the California Energy Commission. It supports California-based entrepreneurs with access to more than 60 world-class testing facilities at nine University of California campuses and Lawrence Berkeley National Lab with the aim to de-risk and accelerate the commercialization of their innovations. In 2022, the second cohort comprising 15 CalTestBed voucher recipients commenced their testing after being awarded a cumulative value of over US\$3.1 million in 2021.

Distribution of awardees throughout the CalTestBed Facilities



Lithium Valley

In collaboration with local partners, we are helping to seed a fully integrated advanced battery and electric vehicle (EV) manufacturing supply chain in Inland Southern California. Our goal is to help build a strong public-private-community-partnership to support local entrepreneurs and innovation in the Salton Sea region.

The Clean Energy Business Roundtable (CEBR)

The primary objective of the Clean Energy Business Roundtable (CEBR) is to facilitate collaboration between regulators, policy makers and business leaders in order to advance California's clean energy policies and initiatives. Currently in its ninth year of existence, CEBR has established itself as a recognized forum for focused, high-level discussions that directly shape the clean energy industry and policy landscape of our state.

Li-Bridge

In collaboration with NAATBatt and NY BEST, we are engaging industry, national labs, and government agencies to make recommendations on implementing the National Blueprint for Lithium Batteries which was released by the Federal Consortium on Advanced Batteries (FCAB) in June 2021. Our goal is to help build a mission oriented innovation ecosystem that supports the build out of a domestic advanced battery manufacturing supply chain from raw materials to recycling.

SOLUTION SPOTLIGHT



“CalSeed and New Energy Nexus provided a wonderful experience during our program, they not only assisted us with the capital needed to advance our technology, but also provided insightful workshops about contracting with the government, diversity and inclusion, and on how to determine the benefits to California ratepayers. Furthermore, as a CalSeed awardee we can participate in 2023’s Cleantech Open, the world largest Cleantech accelerator.”
— Carlos Gaitan, CEO and Co-Founder of Benchmark Labs

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Benchmark Labs

Providing cutting edge in-situ weather forecasting

Benchmark Labs offers farm managers and land owners with accurate forecast information to optimize operations in weather-affected sectors. Current publicly available environmental forecasts provide gridded outputs that are representative of a larger area and do not account for local micro-climates, but Benchmark Labs provides end-users with asset-specific information in order to operate, manage or plan activities for their specific location (e.g., farm, wind turbine, solar installation, green energy building).

The technology can improve the working conditions of farmers and their workers as their in-situ forecasting system can provide relevant OSHA-related alerts like temperatures above 100 F, heat spells, frost events, or optimal humidity and wind speeds for spraying herbicides. Benchmark Labs will start offering their solution to farm management software providers and to farmers with existing IoT enabled sensors



Support from New Energy Nexus

Benchmark Labs is part of the CalSEED program, which has supported them to test and validate in-situ evapotranspiration forecasts that could help agricultural users manage their water and energy more efficiently.



The company has also been invited to participate in other programs supported by NREL, and they have received training on hiring practices, scaling, branding and stakeholder and policy engagement. Benchmark Labs were featured in ABC News (here) following their acceptance into CalSEED, and they also received a US\$50,000 award from Village Capital’s Sustainability Subscribed Program.

SOLUTION SPOTLIGHT

“The Battery Challenge was an amazing opportunity to directly meet our customers, see how they operate, and learn about their needs. The exposure and learnings from this experience helped us raise crucial investment funds and develop an impactful product. NEX did a great job facilitating these conversations and creating a low-friction collaborative environment.”

**— Andrew Hsieh,
CEO and Co-Founder of Liminal**

Liminal

Driving EV battery inspection technology

Inconsistencies in the reliability of EV battery cells has hindered the shift to e-mobility. As demand for EVs continues to grow, the battery industry needs to scale quickly — improving safety, reliability, and speed while reducing cost, and minimizing waste. Liminal addresses the critical but often overlooked need for advanced battery inspection technology with its EchoStat® platform. EchoStat combines ultrasound and machine learning to deliver non-destructive quality control insights in seconds to enable a better manufacturing process.

For manufacturers, this means faster innovation cycles, higher confidence in the quality of their products, as well as reduced scrap and production costs. Additionally, by detecting errors and poor-performing cells at the manufacturing stage, EchoStat reduces the risk of costly recalls. By addressing some of the biggest pain points of the EV battery industry, Liminal is catalyzing the transition to a cleaner future, where electric vehicles are the default choice for all.

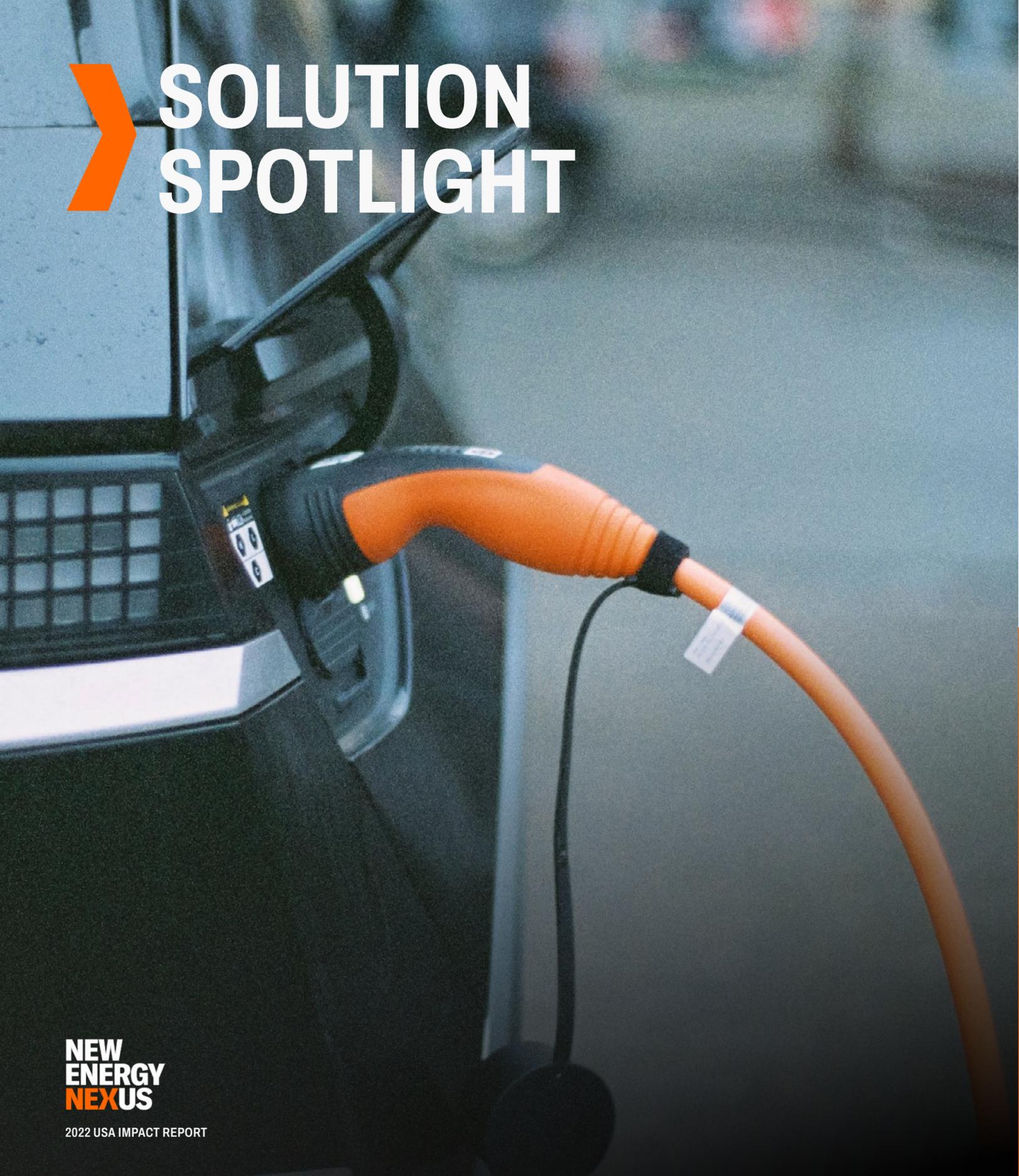
Support from New Energy Nexus

**CalTestBed 2020 (CalCEF Voucher
Amount to UC Davis = US\$94,808.00)**

Liminal partnered with UC Davis in the CalTestBed program and developed a model to predict battery cell performance. This model correlates ultrasound measurements on production-grade EV cells with their cycle life performance (CLP). CLP is a measure of the battery's lifespan before needing replacement. Traditionally, it is assessed through a long-term, destructive cycling process that sacrifices the cells. This study marks the first time that a seconds-long, non-destructive snapshot measurement could predict cell cycle life with high accuracy. The success of this study has led to further projects with customers, making it one of Liminal's unique value propositions for cell manufacturers and auto OEMs.

LG Chem Battery Challenge 2019

Liminal won first place in the LG Chem Battery Challenge, earning a US\$40,000 prize at the pitch competition in Seoul, South Korea. This success led to follow-on projects with LG Chem/LG ES to evaluate their battery cells. Liminal successfully completed these projects and achieved a high level of accuracy in classification of good vs bad; battery cells for two of their cell types. These projects demonstrated that EchoStat can be used for non-invasive quality control and sorting of cells.



SOLUTION SPOTLIGHT

SWTCH

Making EV charging more accessible

SWTCH offers electric vehicle charging-as-a-service and DER integration for multi-family buildings, with the goal of reducing financial barriers and enabling more equitable access to charging. By integrating EV charging into building energy management systems and providing financial tools and charging-as-a-service revenue models to pay for deployment, SWTCH is enabling building managers to provide equitable access to EVs, while creating new revenue streams.

Support from New Energy Nexus

SWTCH secured a pilot grant from The Clean Fight's second cohort to install their technology in four of L+M Development Partners' buildings, with the aim to demonstrate the viability of an EV charging-as-a-service program for disadvantaged communities. In doing so, the pilot grant allows SWTCH to validate their platform's ability to increase electric vehicle adoption and improve building energy efficiency for LMI multi-family buildings, helping to refine their value proposition in affordable housing communities.

SWTCH has successfully embraced the power of cross-cohort collaboration. SWTCH and Peak Power, a company from The Clean Fight's first cohort, partnered to install 117 EV chargers across Ontario. In addition, SWTCH, alongside fellow Cohort 2 companies, Urban Electric Power and Allume Energy, will implement a Smart Electrification project in a mixed-use affordable multifamily building owned and operated by Ithaca Neighborhood Housing Services.

SOLUTION SPOTLIGHT



Runwise

Reducing waste in building heating

Runwise's low-cost, fast-to-install monitoring and control software platform, uses inside temperatures, weather predictions, and machine learning to remotely and seamlessly adjust a building's boiler and heating management, improving comfort and cutting carbon output and costs. Reducing heating waste is the most impactful thing a centrally heated building can do to reduce excess CO₂ emissions. Additionally, inefficient heating controls waste a tremendous amount of money, even if they're new, and on average, Runwise's solution pays for itself within 6 months.

Support from New Energy Nexus

As a member of The Clean Fight's second cohort, Runwise leveraged introductions to customer and investor partners and access to The Clean Fight grant program. Runwise's US\$19M Series A equity financing round was led by Fifth Wall, an investor partner in The Clean Fight program.

Runwise secured a pilot grant from The Clean Fight to install smart boiler control systems in 14 affordable housing buildings of L+M Development Partners, a customer partner in The Clean Fight

program. By reducing fuel consumption, operating costs and GHG emissions, Runwise estimates an annual reduction of 146,030 therms. Furthermore, Runwise also signed a deal for a control upgrade project with RiseBoro, another customer partner, through the Clean Fight program.

SOLUTION SPOTLIGHT



“The [CalSEED] award not only provided the much needed funding to support our technology development but also provided resources to help us to establish business strategies and plans. Based on the progress we made through this CalSEED funding, we further obtain additional funding from the California Energy Commission and the US Department of Energy to continue our development of thermal energy storage control solutions to support building carbonization. The CalSEED program is critical to our success!”

**—Yanda Zhang,
CEO of ZYD Energy**

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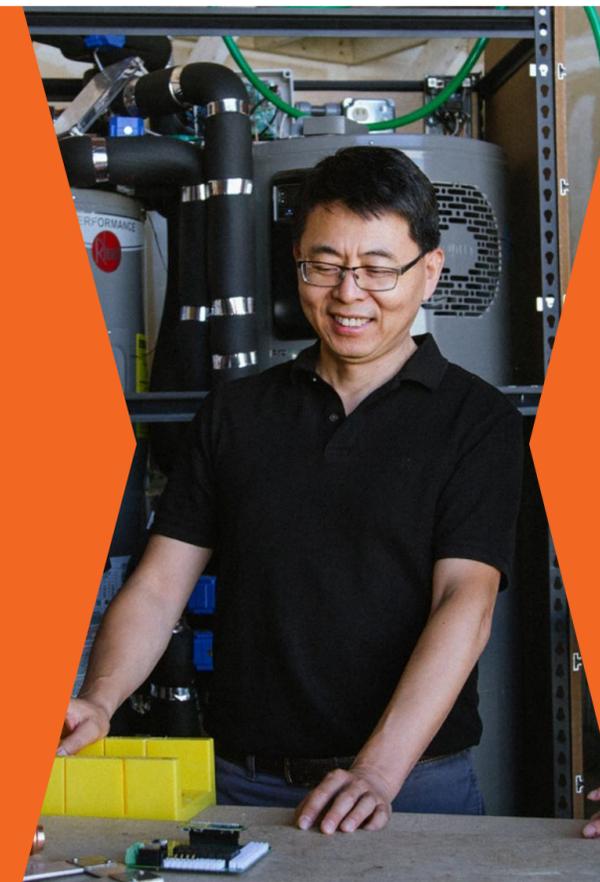
ZYD Energy

Reducing emissions from water heating in buildings

ZYD Energy’s innovative system integration and control solutions enable customers to maximize the benefit of using heat pump water heaters (HPWH) to reduce greenhouse gas emissions, energy bills, and grid impact. ZYD’ solution for single family homes, HeaterHive, facilitates HPWH adoption by offering appealing and functional design features with enhanced hot water services, in addition to carbon emissions and energy bill reduction benefits. Their solution for multi-family homes, LOCUS Integration, simplifies HPWH system designs and installation

process to reduce system first costs. They also provide performance monitoring and optimization services to help building owners achieve long-term savings and improve system maintenance to ensure tenant satisfaction.

ZYD Energy’s solutions aim to reduce greenhouse emissions from water heating in buildings by using grid-interactive controls that maximize renewable energy utilization and system operational efficiency. The building sector represents approximately 25% of California’s greenhouse gas emissions and water heating is the second largest source of greenhouse gas emissions in residential buildings.



Support from New Energy Nexus

ZYD Energy received a CalSEED Concept award and participated in Cleantech Open’s startup accelerator program (CleanTech Open), which was sponsored by the CalSEED award.

SOLUTION SPOTLIGHT



“New Energy Nexus, through its CalSEED program, has been critical to my path as an entrepreneur. While the financial support is vital and appreciated, the mentorship has been a game changer. The New Energy Nexus ecosystem has provided a rich environment for us to thrive in. In the four years since Enzinc received our first award, we’ve grown into a dynamic business with twenty engineers, industry advisors from some of the world’s largest clean energy companies, and a group of committed institutional investors. It’s the most effective program we’ve been in.”

— Michael Burz,

Co-Founder and President of Enzinc

Enzinc

Making safer and more effective batteries

Enzinc is bringing rechargeable zinc batteries to market. Batteries with its proven drop-in zinc material have the high energy of lithium, the robustness and wide operating temperature range of lead acid, with no fire potential or supply-chain constraints. Legacy battery companies can offer premium Enzinc batteries that replace lead acid and compete with lithium (LFP) batteries, for a fraction of the cost of building new battery factories.

Enzinc’s batteries accelerate global decarbonization by being cheaper, made with a widely-available material, having 1/20 th of the carbon footprint to manufacture, and being fully and easily recyclable at the end of its life.

For neighborhoods where those factories are located, it removes the risk of having toxic lead in the local manufacturing ecosystem. Transitioning away from lead acid removes a damaging neurotoxin from the environment.

Support from New Energy Nexus

Enzinc has received four of the California Energy Commission’s series of five EPIC grants, including CalSEED Concept award for US\$150,000, and the CalSEED Prototype for US\$450,000, CalTestBed which provided US\$292,000 to test the technology, all administered by New Energy Nexus.

They have also received US\$1.8 million from its BRIDGE program to bring the product to low-rate initial production.

These grants have been essential to Enzinc’s success, building on an earlier ARPA-E award, angel investments and founders’ contributions, and enabling them to successfully close a US\$4.5 million seed round with institutional investors in 2022. The connections Enzinc made through New Energy Nexus have been critical to its growth.

WHO WE ARE

New Energy Nexus California

CalSEED, CalTestBed, Lithium Valley, The Clean Energy Business Roundtable (CEBR), Li-Bridge



DENISE RUSHING
Managing Director,
California Programs



SARAH CHESTER
Senior Director,
California Operations



JOY LARSON
Program Director, CalSEED



DAWN MEZA
Grants Manager, CalSEED



FLORA KAPLAN
Impact and Reporting
Manager, CalSEED



LINDSEY ROARK
Communications Manager,
CalSEED



DEM RUTHRAUFF
Grants Management
Associate, CalSEED



TENLEY DALSTROM
Program Director,
CalTestBed



CARMEN BHATTACHARYA
Grants & Agreements
Manager, CalTestBed



KAYLEEN ARAULLO
Program Associate,
CalTestBed



OLIVIA HEITZ
Administration Associate,
CalTestBed



SHERIDAN ALFORD
Greening Youth Foundation
Fellow, CalTestBed



REBECCA LEE
Program Director, Community
Innovation Accelerator



BRYAN VEGA
Program Associate



DANNY KENNEDY
CEO, New Energy Nexus



VIJAY DHAR
Li-Bridge Program Director



TRISTAN TREMSCHNIG
Communications Director,
New Energy Nexus

WHO WE ARE

New Energy Nexus New York

The Clean Fight



KATE FRUCHER
Managing Director



SAGAL ABSHIR
Director of Development



TAYLOR ROWE
Director of Customer and Capital Partnerships



NYLA MABRO
Director of Strategy and Marketing



THATCHER BELL
Program Director



AASHIKA BALAJI
Senior Program Associate



MOLLY RAFELSON
Program Manager



SEMIRA ROSE
Partnerships Associate



KELLY MERRYMAN
Director of Operations

NEW ENERGY NEXUS USA

For more information about
New Energy Nexus,
please contact us by email:

elizabeth.andrews@newenergynexus.com

CalSeed  

CalTestBed   

The Clean Fight  

Thank you to our funders

California Sustainable Energy Entrepreneur Development Initiative (CalSEED)

Made possible by the California Energy Commission and California ratepayer funding through the Electric Program Investment Charge Program (EPIC)

CalTestBed

Made possible by the California Energy Commission and California ratepayer funding through the Electric Program Investment Charge Program (EPIC)

The Clean Fight

NYSERDA (New York State Energy Research and Development Authority) - supported by an award from the U.S. Department of Energy (supported by an award from language) and U.S. Department of Commerce

Li-Bridge

On behalf of the Federal Consortium for Advanced Batteries (FCAB), Li-Bridge is funded by the U.S. Department of Energy (DoE) through Argonne National Lab (ANL) as the Prime Contractor

Thank you to our partners

CalSEED:

Key Program Partners

- Cleantech Open
- Momentum
- The Greenlining Institute
- Lawrence Berkeley National Lab
- Center for Sustainable Energy

California Clean Energy Innovation Ecosystem

- Los Angeles Cleantech Incubator (LACI)
- Bluetech Valley
- Activate
- Southern California Energy Innovation Network (SCEIN)

CalTestBed:

Key Program Partners

- University of California Office of the President
- Momentum
- Lawrence Berkeley National Lab
- [For a full list of participating test beds, please click here](#)

California Clean Energy Innovation Ecosystem

- Los Angeles Cleantech Incubator (LACI)
- Bluetech Valley
- Activate
- Southern California Energy Innovation Network (SCEIN)

New Energy Nexus New York / The Clean Fight

Customer Partners:

- Bren-Tronics
- Brooklyn Navy Yard
- conEdison
- Fluence
- The Trust for Governors Island
- Jupiter Power
- National Grid
- Passkey
- Raymond
- Turner
- Beam Living

- Bright Power
- Carrier
- City of Ithaca
- Fairstead
- Handel Architects
- JOE NYC
- L+M Development Partners
- Riseboro Community Partnership
- Steven Winter Associates

Capital Partners:

- Amalgamated Bank
- BMO Impact Fund
- Broadscale
- Closed Loop Partners
- Energy Impact Partners
- Fifth Wall
- Generate Capital
- NY Green Bank
- New York Ventures
- NYCEEC
- Obvious Ventures
- Raise Green
- Silicon Valley Bank
- Temasek
- Wellington Management
- Breakthrough Energy Ventures
- Camber Creek

Li-Bridge:

Spearheaded by three industry groups

- NAATBatt International
- NY-BEST
- New Energy Nexus

Lithium Valley:

- The Torres Martinez Desert Cahuilla Indians, who are the First Nations People, and from whose land the lithium will come, or be impacted by, are special partners
- UC Berkeley Labor Center
- San Diego and Imperial Counties Labor Council
- Jobs to Move America
- the Institute for Social Transformation at UC Santa Cruz
- the Center for Social Innovation at UC Riverside