

# CalTestBed

## AT A GLANCE

**We support diverse entrepreneurs to drive innovation and build equity into the global clean energy economy by providing companies access to world-class testing facilities to accelerate the commercialization of clean energy technologies.**



## WHO WE ARE

The California Testbed Initiative (CalTestBed) is a program that provides \$8.8 million in testing vouchers for California entrepreneurs, funded by the California Energy Commission's EPIC program. CalTestBed was created to accelerate California's clean energy goals by assisting clean energy entrepreneurs to gain access to critical prototype testing.

## WHAT WE OFFER

CalTestBed provides clean energy entrepreneurs with vouchers worth up to \$300,000 for third-party testing of their technologies at one of more than 60 testbeds across nine University of California campuses and Lawrence Berkeley National Laboratory.

## WHAT WE DO

CalTestBed uses EPIC funds to accelerate the commercialization and deployment of mid-stage clean energy innovations in California. Powered by New Energy Nexus and its mission to create a 100% clean energy economy for 100% of the population, CalTestBed utilizes a Justice, Equity, Diversity and Inclusion (JEDI) lens in delivering social, economic, and environmental impacts throughout the state.

## WHO CAN APPLY



### California Companies

Companies/Entrepreneurs must have a base of operations in California.



### Technology Readiness Level 5-7

Applicants must have a prototype and technical readiness level (TRL) between 5-7.



### Innovation Type and Category

Clean energy focused hardware and integrated solutions. Stand-alone software is NOT eligible.



### EPIC Aligned

Innovations must be aligned with California Energy Commission's Electric Program Investment Charge (EPIC) funding priorities.

# TESTIMONIALS



## Industrial and Agricultural

Umida AG significantly reduces farm irrigation power and water use by providing farms with sustainable groundwater management infrastructure.

Our brilliant idea was a crazy idea one year ago - never would have happened without the CalTestBed program. Taking a crazy idea with great upside potential and deploying it with third party evaluation from professors was a great commercialization path.

- Joseph Gallegos, CEO



## ALD TECHNICAL SOLUTIONS LLC

Innovative Composite Materials and Solutions

## Grid Technologies

ALD Technical Solutions is a woman-owned clean tech startup that develops innovative applications of advanced composite materials in clean and renewable energies.

The CalTestBed award was great support. Not only to perform tests and qualifications of our technology, but also to connect us to industry and university experts. If we wanted to do same tests and qualifications that we performed at UCLA through CalTestBed in a different environment, it would cost us significantly more and would take us much longer.

- Dr. Davoud Zamani, Co-founder



# twelve

## Energy Storage

Twelve has developed a device that recycles CO<sub>2</sub> into cost-competitive chemicals and fuels. Their technology reduces the carbon footprint of the world's heaviest emitters, while creating a new revenue stream from what is discarded today as a waste product.

Twelve transforms CO<sub>2</sub> emissions into the building blocks for essential products that are currently made from fossil fuels. The CalTestBed program gives us access to advanced tools and resources that we don't have in-house but that are key to our technology development, thus helping to accelerate the timeline to commercialize our technology.

- Dr. Etosha Cave, Founder and CSO



## Material-Based

Helicoid Industries develops a leading-edge protection technology that will reduce weight, increase life cycles, and increase energy output of wind turbine blades.

Helicoid technology delivers the benefits of high-toughness and durable biomimicry designs to the next generation of lighter, impact resistant and more sustainable composite structures. CalTestBed is providing support to carry out high quality research to uncover the benefits of our technology in wind rotor blades.

- Dr. Lorenzo Mencattelli, Director of R&D for Helicoid Industries Inc.



# IMPACT IN NUMBERS

CalTestBed entrepreneurs are pioneering solutions to help California decarbonize its grid and provide real benefits to California ratepayers.

## COHORT 1

The 25 CalTestBed companies that make up the inaugural cohort develop cleantech innovations to help accelerate California's clean energy goals.

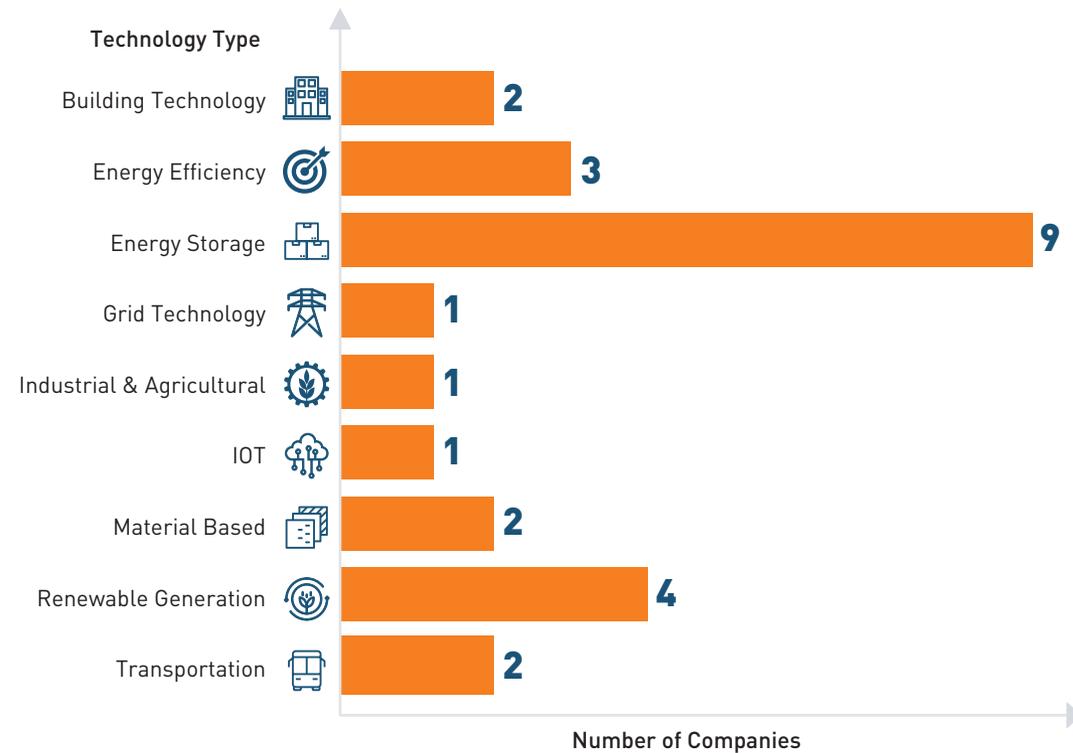
**137 jobs** since becoming CalTestBed awardees

**\$107.6 M** in follow-on funding since becoming CalTestBed awardees

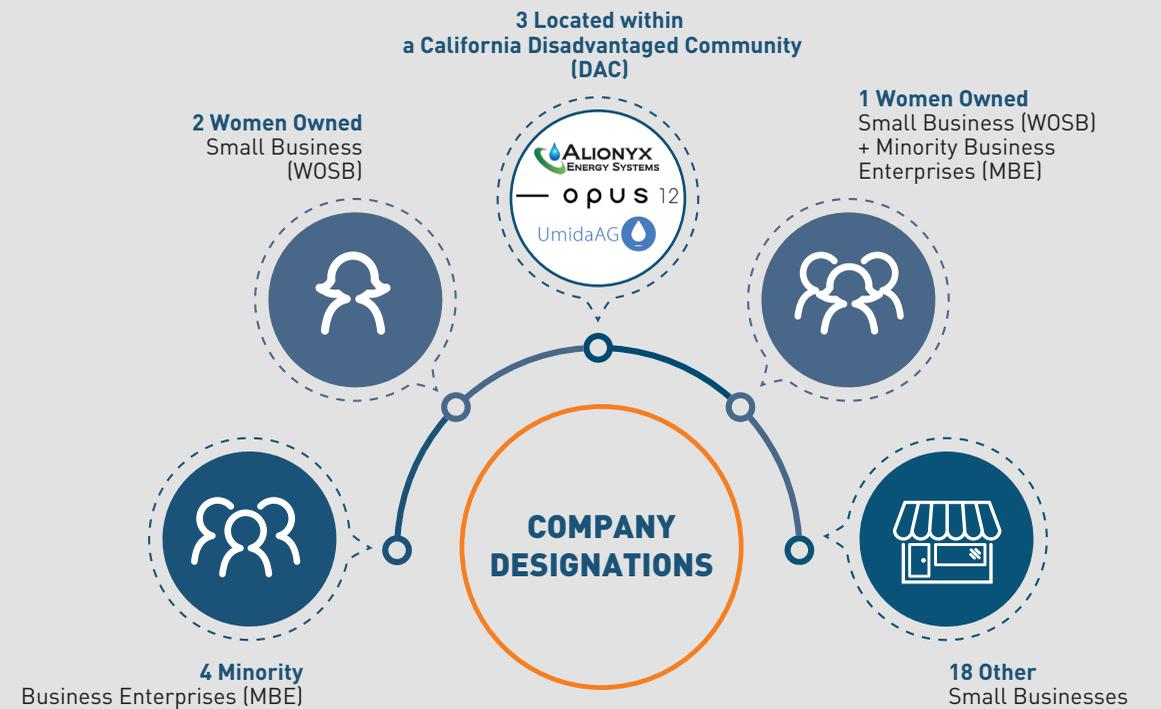
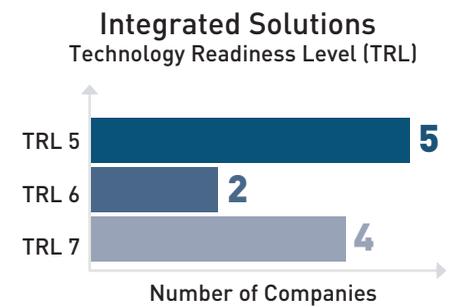
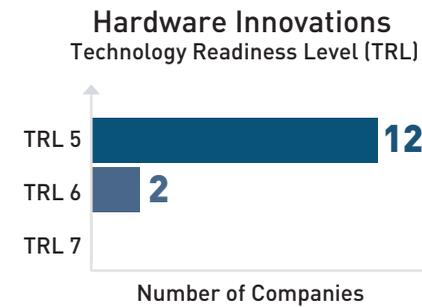
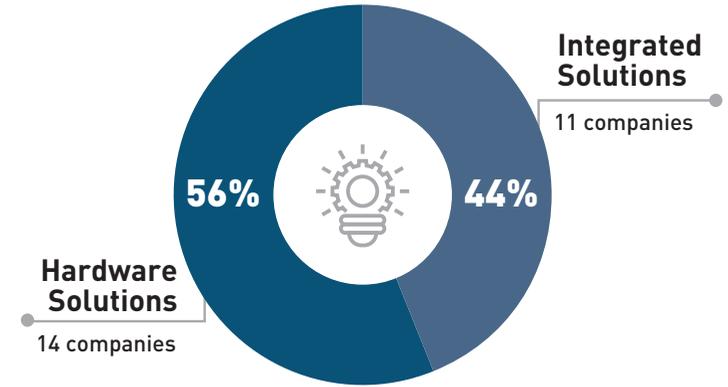
**\$5.5 M** in vouchers distributed to testing facilities for the 1<sup>st</sup> cohort

**\$523,720** in cost-share provided by the University of California

## TYPES OF TECHNOLOGIES



## INNOVATION BREAKDOWN



# TESTIMONIALS



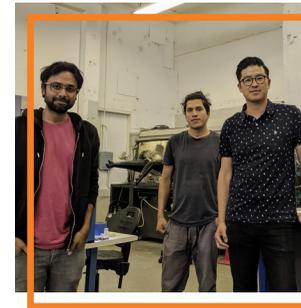
## ReJoule

### Transportation

ReJoule's advanced diagnostic platform enables automakers to maximize the value of their electric vehicle batteries by providing a fast and more accurate measurement of the battery's health.

ReJoule will maximize the value of EV batteries by streamlining their life cycle from cradle to cradle. Our industry partners can't wait to see the results of third party testing.

- Zora Chung, CFO



## CoreShell TECHNOLOGIES

### Energy Storage

CoreShell Technologies is accelerating the transition to electric transportation and renewable energy storage by solving the key degradation issue in all rechargeable batteries with its nanolayer thin-film coating.

CoreShell Technologies, Inc. is unlocking the true cost and economics of batteries to enable the timely deployment of clean energy solutions. CalTestBed is providing critical simulation tools to enable us to pre-screen candidate materials prior to empirical validation, greatly accelerating our cycles of learning.

- Roger Basu, CTO and Co-founder



## TAKACHAR

### Renewable generation

Takachar is on a mission to fight climate change by transforming massive amounts of waste biomass into marketable products around the world.

If scaled widely, the Takachar technology can enable rural communities to create significantly more value from their unmerchantable crop and forest residues, thereby reducing the risks of wildfires, air pollution, and carbon footprint. The CalTestBed program has drastically cut down the costs of laboratory testing of some of our mission-critical samples and enabled us to go a lot further.

- Kevin Kung, Founder and CTO



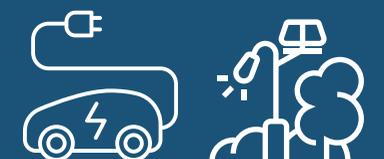
## Lucent optics

### Building Technologies

Lucent Optics creates impactful technology solutions for energy efficiency and renewable energy including ultra-thin and flexible LED lighting panels, daylight harvesting window films, and high efficiency signage.

With the help of CalTestBed funding and a variety of high-tech tests performed at Berkeley National Lab, Lucent Optics was able to obtain critical performance data which confirmed the whole-building energy saving effect of its new solar-control window film technology.

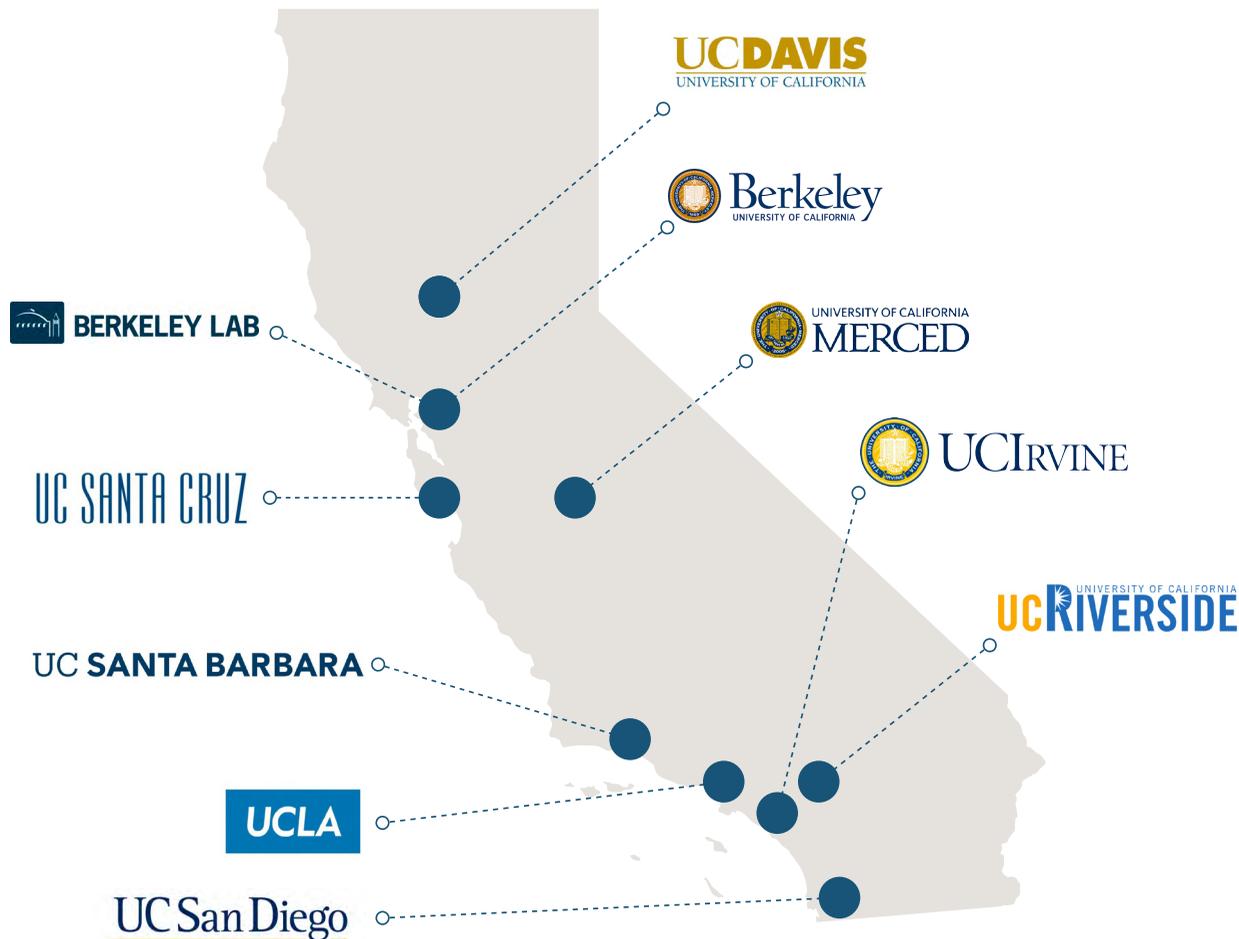
- Sergey Vasylyev, President



# NETWORK OF NETWORKS

## CALTESTBED TESTING FACILITIES

CalTestBed's facility network includes more than 60 world-class testbeds across nine University of California Campuses and Lawrence Berkeley National Laboratory.



Learn about each of the world-class facilities entrepreneurs can test their technology in by exploring our facilities directory: [bit.ly/Facilities\\_Directory](https://bit.ly/Facilities_Directory)

## CALIFORNIA AND NATIONAL ECOSYSTEMS

As part of New Energy Nexus, CalTestBed connects with clean energy innovation hubs across the United States and the world to accelerate clean energy entrepreneurs.



### THE NETWORK EFFECT

Established by the California Energy Commission, the clean energy innovation ecosystem collaborates with New Energy Nexus to share information, magnify outreach, and cultivate a network of Next Level Partners.



### A PLATFORM FOR THE NETWORK

Created by the California Energy Commission, this portal helps cleantech entrepreneurs get powerful tools and insight to compete globally.

# TESTIMONIALS



## Feasible

### Energy Storage

Feasible is a pioneer in advanced battery diagnostics. Using ultrasound and machine learning, their technology improves battery production workflow.

“ The CalTestBed program allowed us to correlate our measurements on large EV cells to cycle life performance, which improved our traction with EV and battery manufacturing customers. ”

- Shaurjo Biswas, CTO and Co-founder



## WEST BIOFUELS

### Renewable Generation

West Biofuels is a provider and developer of thermochemical systems for the conversion of biomass to power, fuels, and chemicals.

“ The data provided by UC San Diego from the Renewable Natural Gas Development Laboratory through the CalTestBed program is essential for the development of an economic analysis of a commercial system. Access to unique resources at UC through the CalTestBed program has been a beneficial collaboration in assisting commercial development of the West Biofuels technology. ”

- Michael Long, Director of Research and Development



## System/Z

### IoT

System Z, in partnership with Newworld Energy, developed The Energy Quarterback and Microgrid in a Meter (MIM), which immediately transforms a facility's solar and/or battery system into a resilient microgrid.

“ Participation in CalTestBed and our pairing with the University of California testing team has been instrumental to our team's ability to prove our technology. Participation has connected us with some of the brightest minds in the field, and fast-tracked our ability to rapidly move our technology from innovation to a product ready for market. ”

- Sam Irvine, Director of Operations



## Blue Frontier

### Energy Efficiency

Blue Frontier is developing an ultra-efficient air conditioner that reduces energy consumption from 60% to 90% over conventional systems.

“ The CalTestBed program has been extremely impactful for our company. It has opened doors to working with UC-Davis' Western Cooling Efficiency Center (WCEC). This collaboration will support testing that will lead to the development of smart controls of our unit, which we expect will improve overall comfort and further increase the efficiency of our systems. ”

- Daniel Betts, CEO



# CALTESTBED SYMPOSIUM

CalTestBed hosts a national symposium showcasing the program's entrepreneurs and connecting them with Next-Level partners in order to accelerate the commercialization of transformational cleantech.



global audience



days



panels showcasing 1<sup>st</sup> cohort entrepreneurs



**Janea Scott**  
Senior Counselor to the Assistant Secretary for Land & Minerals  
U.S. Department of the Interior



**Miranda Ballentine**  
CEO  
Renewable Energy Buyers' Alliance

## 2020 IN A NUTSHELL

In December 2020, in front of a virtual audience of 500+, we hosted the first National CalTestBed Symposium. We introduced the CalTestBed cohort 1 entrepreneurs to the ecosystem and reviewed the program and its goals. We heard from high-level keynote speakers including Janea Scott and Miranda Ballentine in panel discussions, and connected with the global clean energy ecosystem in networking sessions.

## Winner of the 2021 Federal Lab Consortium Award for Outstanding Partnership

The CalTestBed Program was recognized by the Federal Laboratory Consortium (FLC) with the 2021 Outstanding Partnership Award for the innovative public-private partnership between New Energy Nexus, Lawrence Berkeley National Lab, and the University of California Office of the President.

Thank you to our program partners who enable us to support California clean energy innovators to drive the state's clean energy goals.



CALIFORNIA ENERGY COMMISSION



UNIVERSITY OF CALIFORNIA



### CONNECT WITH US ON SOCIAL!



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