



NEW ENERGY NEXUS

Just Batteries

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

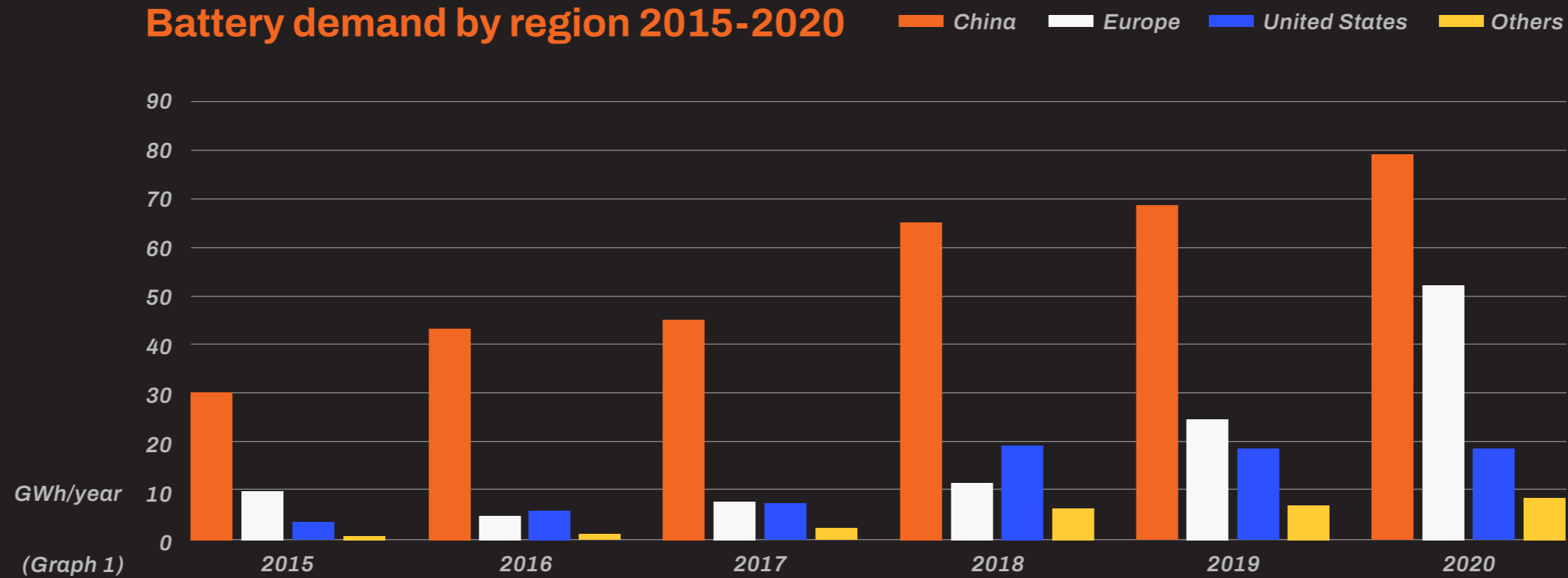
WHY JUST BATTERIES?

We believe that advanced batteries are the linchpin technology in the energy transition and a critical climate solution that the world needs to innovate and expand. At New Energy Nexus we are focused on going beyond just growing this industry. The “how” matters and is reflected in our commitment to building a mission oriented battery innovation ecosystem.

Energy storage is essential to creating affordable, reliable, and deeply decarbonized electricity systems for 100% of the world’s population. In fact, without reliable access to battery technology, many countries have no chance of meeting their 2050 carbon emissions goal.

Current estimates suggest the advanced Lithium battery market will be worth US\$300 billion by 2030 (it was less than US\$50 billion in 2022). 45% of the value will be generated making cells—the components of battery packs combining such materials as Lithium, Cobalt, Nickel, Manganese or Iron and Phosphate.

Battery demand by region 2015-2020

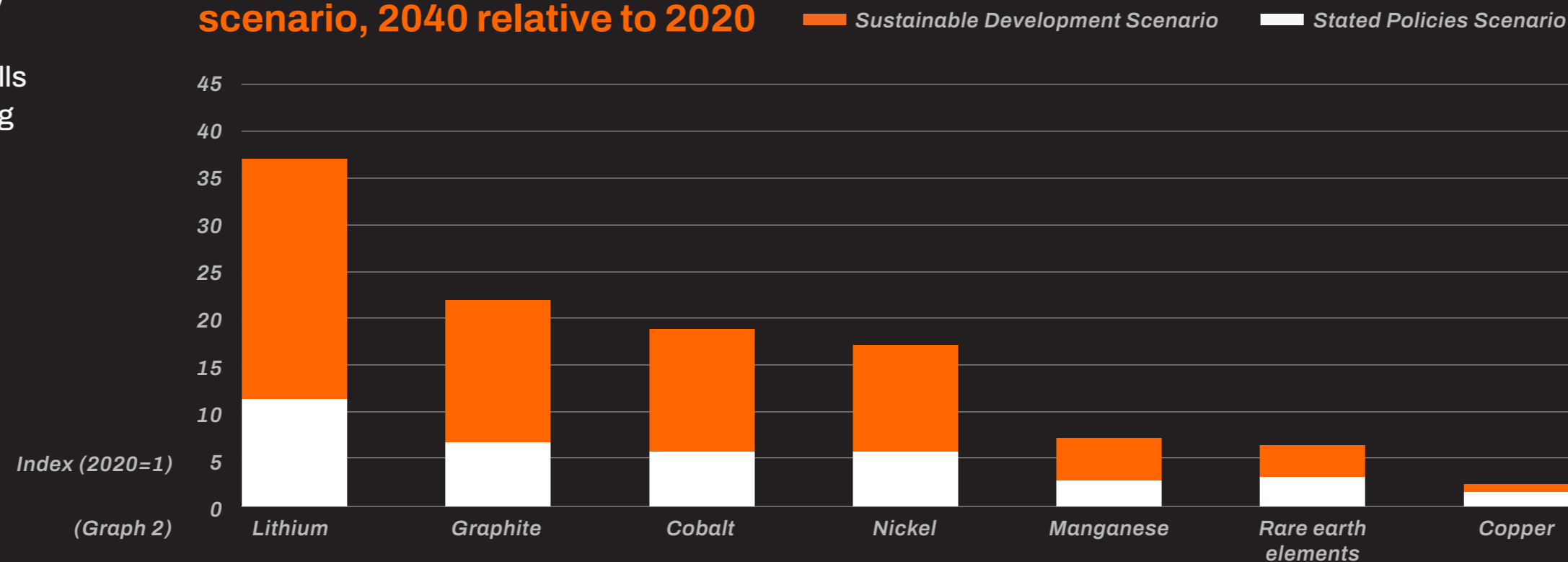


(Graph 1)

One important difference in this industry compared to fossil fuels is that battery components are mostly recyclable. Unlike fossil fuels that are a single use resource, the lithium we extract today will power our lives for generations to come. With industry analysts predicting that at least 145 million EVs will be on the road by 2030, there is an urgent need to ensure this becomes a circular, carbon-free system.

(Graph 1) Source: IEA, <https://www.iea.org/data-and-statistics/charts/battery-demand-by-region-2015-2020>, IEA. Licence: CC BY 4.0

Growth in demand for selected minerals from clean energy technologies by scenario, 2040 relative to 2020



(Graph 2)

(Graph 2) Source: IEA, <https://www.iea.org/data-and-statistics/charts/growth-in-demand-for-selected-minerals-from-clean-energy-technologies-by-scenario-2040-relative-to-2020>, IEA. Licence: CC BY 4.0



OUR UNIQUE ROLE

Copyright: Leigh Keily



“New Energy Nexus is in a unique position to not only grow the battery innovation ecosystem, but also shape it so that it benefits the 100%.”

**—Danny Kennedy,
CEO of New Energy Nexus**

At New Energy Nexus we are focused on going beyond just growing the battery industry. The “how” matters and is reflected in our commitment to building a mission oriented battery innovation ecosystem.

Many thousands of startups are going to be created in the battery sector, from the extraction of Lithium, and its refining, through to the making of cathode materials and battery cells, and final pack assembly and recycling. These startups can either be built to be better or worse for people and the planet. We aim to make them better—focused on value for host communities and the environment, not just impacts and costs.

We aim to build more equity into the battery supply chain—wealth, social benefits, jobs, among others—for all regions of the world that will benefit from this growing industry.

And we also aim to increase startups’ rate of success. The world still needs to innovate and bring down costs, improve safety, reduce carbon emission in the manufacture and distribution of batteries, and improve diagnostics and recycling. More ideas are needed that advance technology innovation, and to build a more circular, just and inclusive battery economy.

This is why we’re calling our consolidated efforts in this space, “Just Batteries”.

OUR HISTORY IN BATTERY INNOVATION

Our global reach and expertise building mission driven innovation ecosystems is what makes us unique in this space.

2012 ■ Since 2012, the California Clean Energy Fund (which was the forerunner to the organization now known as New Energy Nexus) has managed a program called CalCharge—a public-private partnership involving startups, the national labs at Berkeley, Livermore and Stanford, as well as unions, utilities and others—fostering dozens of entrepreneurs in California around energy storage technologies. This continues with two research projects at one of the National Labs.

2020 ■ Southern California contains the US' largest domestic lithium source—the brines of the geothermal power plants in Imperial County. We published a white paper in 2020 on this potentially clean industrial precinct, which informed to a blue ribbon commission and significant state—wide support.

2020 ■ Expanding globally: around the world we sought to support other Lithium battery-related entrepreneurs, founding teams, and startups large and small. One of these included a partnership with LG Chem and then after their IPO, LG Energy Solutions, on challenges to surface innovative battery technology.

2021 ■ Launched in 2021, New Energy Nexus is one of three organizations delivering the US Department of Energy's Lithium Bridge project to accelerate the growth of America's lithium battery supply chain and industry. We are currently driving initiatives to develop a pilot line network, workforce development and global partnerships.

2022 ■ More recently in 2022 we launched Supercharge Australia with our local partner, EnergyLab. This is an initiative that aims to develop an ecosystem in the largest producer nation, in order to innovate and decarbonize the lithium value chain, as well as capture more value locally.

WHAT WE DO

Lithium Valley •
Southern California, USA

• **New Energy New York**
New York, USA

• **Li-Bridge**
Washington DC, USA

• **LG Battery Challenge**
Seoul, South Korea / Global

EV Open Challenge
Seoul, South Korea / Global

• **Supercharge Australia**
Sydney, Australia

WHAT WE DO



“Supercharge will pave the groundwork for a battery (and associated value chain) manufacturing industry that Australia is well-placed to develop. An industry that can create quality jobs, income and carbon benefits for Australia,”
—Eytan Lenko,
CEO of Boundless.

ENERGYLAB'S MEGAN FISHER (LEFT) AND NEX'S DANNY KENNEDY (RIGHT).
IMAGE: ENERGYLAB

NEW ENERGY NEXUS

2022 JUST BATTERIES IMPACT REPORT

Supercharge Australia

Despite producing almost 60% of the world's lithium, Australia retains less than 1% of the annual product value. Launched in September 2022 Supercharge Australia will develop an ecosystem to support lithium battery innovation and support Australia to capture more value from the lithium battery supply chain. Backed by Boundless, it is the first initiative of the partnership between New Energy Nexus and Australia and New Zealand's largest climate tech startup accelerator EnergyLab.

A key element of the initiative is the Supercharge Australia Innovation Challenge, which supports selected startups through a hyper-accelerated innovation process. Startups are matched with mentors, receive coaching, and connect with one another.

What we did in 2022

We convened comparative US and Australian startup finance and workforce development forums, including US guests and Australian startups, experts and senior industry and policy representatives.

We launched the Supercharge Australian Innovation Challenge with a cohort of 11 startups spanning novel cell technologies, EV, and battery production to recycling. The program's first winners were announced at a gala event in late March 2023.

Priorities in 2023

- › Develop a continual funding landscape for the ongoing support and advocacy for startups
- › Begin formal incubator and accelerator programs.
- › Drive financial and workforce support for the needed growth in the sector.
- › Explore more ways to leverage the global New Energy Nexus network and opportunities to embed JEDI (justice, equity, diversity, and inclusion) into our work.



WHAT WE DO

Lithium Valley

In collaboration with local partners, New Energy Nexus is helping to seed a circular economy centered on a fully integrated advanced battery and electric vehicle (EV) manufacturing supply chain in Inland Southern California, with public purpose and value at its core.

Our goal is to help build a strong public-private-community-tribal partnership that includes community and environmental organizations, tribal nations, industry, labor, policymakers and government agencies and to support local entrepreneurs and innovation in the Salton Sea region.

What we did in 2022

We convened 40 key Californian clean energy leaders for a two-day strategy session on how the state can onshore an advanced battery supply chain centered on the world's greenest lithium in the Salton Sea. We also partnered with community and labor organizers to develop a preliminary workforce overview of lithium development in Inland Southern California. Our findings were presented at the Lithium Valley Commission Hearing on Workforce Development.

We also facilitated bi-weekly labor/industry coalition meetings with the United Auto Workers and labor organizers: Jobs to Move America, the UC Berkeley Labor Center, and the San Diego and Imperial Counties Labor Council.

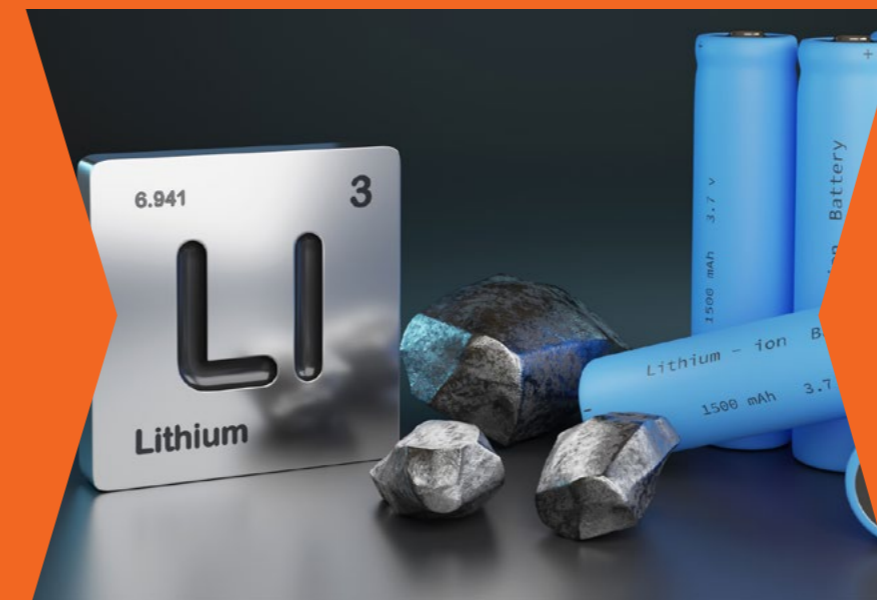
Priorities in 2023

› Convene a youth innovators and entrepreneurs summit with our K-16 educational and community partners in the Salton Sea region and help advance readiness in local youth populations for an advanced batteries workforce development initiative with the US Department of Energy.

› Develop an interactive map for the emerging domestic supply chain for advanced batteries that tracks high quality job creation and environmental social benefit to local communities.

› Publish a white paper outlining a place based strategy for an advanced battery and EV manufacturing supply chain with greater public purpose and value in Inland Southern California.

› In partnership with the Torres Martinez Desert Cahuilla Indians, facilitate a three-day clean energy innovation summit for the nine Cahuilla Indian Nations, including work with the California Energy Commission and the California Public Utilities Commission.



WHAT WE DO

“We’re delighted by the group’s output and believe that adoption of the Li-Bridge recommendations can set the nation on a path for success.”
—Venkat Srinivasan, Director of the Argonne Collaborative Center for Energy Storage Science at the DOE’s Argonne National Laboratory

Li-Bridge

Li-Bridge is a public-private alliance committed to accelerating the development of a robust, innovative, and inclusive supply chain for lithium-based batteries in the USA. It is convened by the Federal Consortium for Advanced Batteries, managed by Argonne National Laboratory with three organizations— New Energy Nexus, NAATBatt International, the New York Battery and Energy Storage Technology (NY-BEST) Consortium.

Our role in Li-Bridge is unique as we specialize in start-up acceleration and have existing partnerships with international partners, such as the European Battery Alliance (EBA) and in Australia through our Supercharge Australia program. This gives us access to expertise and best practices in battery innovation, responsible critical mineral extraction, and workforce development.

What we did in 2022

We prepared the Li-Bridge report, “Building a Robust and Resilient U.S. Lithium Battery Supply Chain”, which includes 26 recommendations to bolster the domestic lithium battery industry. This was launched in February 2023.

Among the five major work streams for Li-Bridge, New Energy Nexus plays a leading role in the Pilot Line Task Force, and the Workforce and Communities Committee.

Priorities in 2023

- › Convert high-level requirements for open access pilot lines to region specific requirements for our startups, including quality standards and sustainability models.
- › Engage stakeholders to establish a National Battery Workforce Council linked to existing initiatives from DOE, Academia, SAE, ECS etc.
- › Support Supercharge Australia to forge international collaborations in order to share resources, expertise, and best practices.

WHAT WE DO



“The caliber of the partners, investors and The Clean Fight team are outstanding... It’s different from other programs that tend to be more passive. There’s a real dedication to creating results.”
—James Larsen, CEO of eZincBike

The Clean Fight— Energy Storage Edition

New Energy Nexus New York/The Clean Fight helps the world’s best growth-stage startups significantly scale their business in New York State, while boosting economic opportunity and job creation for all. Our focus on finding solutions that have the near-term potential to tap large markets and have significant decarbonization impacts is unique in the region.

We are also part of a US\$100million New Energy New York consortium led by Binghamton University to advance manufacturing of batteries in New York State.

What we did in 2022

We launched the first energy storage program with support from NYSERDA and the U.S. Department of Energy, in partnership with NY-BEST and Binghamton University. We selected a cohort of 10 of the most promising growth-stage storage companies from North America, Europe and Australia, and attracted participation from ten leading customer partners and fifteen capital partners (including Closed Loop Partners, Fifth Wall, Generate Capital, NY Green Bank, and Silicon Valley Bank).



Priorities in 2023

- › We will complete the first energy storage accelerator program in the spring, wrapping up with a public Summit event showcasing the program participants, cohort solutions, and needs and opportunities in the New York storage ecosystem. We are working to collapse the sales cycle for new storage system deployments, increase new hires in New York State, and enable funding events for cohort companies as program outcomes.
- › We will also launch our first Energy Storage challenge, focused on addressing targeted issues within the New York market.

WHAT WE DO



EV Open Challenge

The EV Open Innovation Challenge is a corporate innovation program powered by New Energy Nexus to source startups developing commercial-ready EV charging products and services. They are then selected to enter into pilot or proof-of-concept projects with industry partners such as Kia, Hyundai Motor and Hyundai GLOVIS and Hyundai CRADLE.

The aim of this program is to support startups to collaborate on a pilot program and potentially scale their product offering in North America. Our focus is to connect startups with corporate partners to build deeper relationships that can lead to financial support.

What we did in 2022

We held a two-day pitch event at KIA Headquarter in March 2022 in which three startups were selected to implement a pilot program with Hyundai/KIA.

Priorities in 2023

- › Continuing partnership with Hyundai/KIA on other innovation programs
- › Facilitate more funding and investment from corporate partners
- › Develop a more interactive and dynamic corporate innovation program

LGES Battery Challenge

The LGES Battery Challenge 2022 is designed to surface innovative battery tech and business models around the world. Transformative battery solutions in transportation, electricity grids, home storage, and new applications will be the key to unlocking the next stage of the clean energy transition. Battery industry leader LG Energy Solution has partnered with New Energy Nexus to launch this challenge.

What we did in 2022

We launched the call for application in 2022, and are currently shortlisting startups. Up to 10 selected finalists will be sponsored to participate in a workshop and pitch day with LG Energy Solution researchers, investors, and innovation teams. Up to US\$1,000,000 in cash prize will be awarded among all winners of the challenge.

Priorities in 2023

Our priority in 2023 will be shortlisting startups to participate in a Proof of Concept (PoC) project and potential investment opportunities. A winner will be announced in late in 2023.



PEOPLE WHO MAKE IT POSSIBLE

New Energy Nexus New York/The Clean Fight



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Managing Director



NYLA MABRO
Director of Strategy
and Marketing



AASHIKA BALAJI
Program Associate



SAGAL ABSHIR
Director of Development



THATCHER BELL
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Programs Manager,
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Li-Bridge



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Innovation Accelerator



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EV Open Innovation Challenge & LGES Battery Challenge



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Funders

New Energy Nexus New York/ The Clean Fight

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Li-Bridge

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Supercharge Australia

Boundless

LGES Battery Challenge

LG Energy Solution

Strategic partners

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*

EV Open Challenge

- *EV Open Innovation Challenge*
- *Industry Partner—Hyundai, Kia*

LGES Battery Challenge

- *Industry Partner—LG Energy Solution*

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 Construction*

Capital Partners:

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

Li-Bridge

Spearheaded by three industry groups

- *NAATBatt International*
- *NY-BEST*
- *New Energy Nexus*

Industry partners (Raw, processed and recycled materials)

- *Albemarle*
- *Lilac*
- *Ascend Elements*
- *Lithium Americas*
- *Berkshire Hathaway Energy*
- *Piedmont Lithium*
- *Cirba Solutions*
- *Spiers New Technologies*
- *Glencore*
- *Li-Cycle*
- *Teck*
- *Vale*

Industry Partners (End product and end users)

- *American Electric Power*
- *Hyundai Motor/ Hyundai CRADLE*
- *KIA*
- *CNH Industrial*
- *Ford*
- *GM*
- *Honda*
- *Nextera*
- *John Diere*
- *Tesla*
- *Proterra*

National Labs, Academia and other

- *INL*
- *LBNL*
- *NREL*
- *Oakridge*
- *PNNL*
- *Binghamton Univ*
- *Harward*
- *Univ of Michigan*
- *Stony Brook Univ*
- *BIC*
- *Galyen Energy*
- *NECA*