U.S. DEPARTMENT OF ENERGY

Energy Program for Innovation Clusters (EPIC): Progress and Implementation FY 2021 – FY 2024

Report to Congress
November 2024

United States Department of Energy
Washington, DC 20585

Message from the Director, Office of Technology Transitions and Chief Commercialization Officer

The U.S. Department of Energy (DOE) Office of Technology Transitions (OTT) is pleased to provide an update to the House and Senate Appropriations Subcommittees on Energy and Water Development regarding progress and implementation of the Energy Program for Innovation Clusters (EPIC) program over fiscal years (FY) 2021 to FY 2024. This report builds on the previous report to Congress published in June 2022 that summarizes the inaugural EPIC Round 1 awards in FY 2021.

Since its inception, EPIC-funded projects contributed to their respective innovation ecosystems throughout the United States, furthering the realization of OTT's mission to expand the commercial impacts of DOE's investments by enabling technologies to reach the marketplace. EPIC fills critical gaps in commercializing energy and related technologies by supporting incubators building robust energy innovation ecosystems and stimulating development in regions across the United States. In FY 2023, EPIC Round 2 awarded over $4.5 million (M) to accelerators, incubators, and startups under a three-phase prize competition. Given EPIC's success, DOE's Office of Fossil Energy and Carbon Management (FECM) collaborated with OTT to launch a Direct Air Capture (DAC) Pre-Commercial EPIC Prize competition. This program used the EPIC three-phase approach and awarded $1.3M to 13 incubators in Phase 1. OTT's EPIC Round 3, Phase 1 submissions closed on February 9, 2024, with winners announced on April 2, 2024. This phase featured several incubators poised to accelerate the development of new industries in the United States with high job growth potential including those with focuses on: geothermal and the entire workforce ecosystem, technologies to make data centers more energy efficient, nuclear fusion, and on-shoring of critical energy storage technologies.

Pursuant to statutory requirements, this report is being provided to the following Members of Congress:

- **The Honorable Patty Murray**
  Chair, Senate Committee on Appropriations

- **The Honorable Susan Collins**
  Vice Chair, Senate Committee on Appropriations

- **The Honorable Patty Murray**
  Chair, Subcommittee on Energy and Water Development
  Senate Committee on Appropriations

- **The Honorable John Kennedy**
  Ranking Member, Subcommittee on Energy and Water Development
  Senate Committee on Appropriations

- **The Honorable Tom Cole**
  Chairman, House Committee on Appropriations

- **The Honorable Rosa DeLauro**
  Ranking Member, House Committee on Appropriations

- **The Honorable Chuck Fleischmann**
  Chairman, Subcommittee on Energy and Water Development, and Related Agencies
  House Committee on Appropriations

- **The Honorable Marcy Kaptur**
  Ranking Member, Subcommittee on Energy and Water Development, and Related Agencies
  House Committee on Appropriations

- **The Honorable Joe Manchin**
  Chairman, Senate Committee on Energy and Natural Resources

- **The Honorable John Barrasso**
  Ranking Member, Senate Committee on Energy and Natural Resources

- **The Honorable Cathy McMorris Rodgers**
  Chair, House Committee on Energy and Commerce

- **The Honorable Frank Pallone, Jr.**
  Ranking Member, House Committee on Energy and Commerce

- **The Honorable Frank Lucas**
  Chairman, House Committee on Science, Space, and Technology

- **The Honorable Zoe Lofgren**
  Ranking Member, House Committee on Science, Space, and Technology

If you have any questions or need additional information, please contact me, at vanessa.chan@hq.doe.gov, or Ms. Meg Roessing, Deputy Director for External Coordination, Office of Budget, Office of the Chief Financial Officer, at (202) 586-3128; Mr. Brian Eiler, Deputy Assistant Secretary for Senate Affairs or Mr. Eric Delaney, Deputy Assistant Secretary for House Affairs, Office of Congressional and Intergovernmental Affairs, at (202) 586-5450.

Sincerely,

Dr. Vanessa Z. Chan
Chief Commercialization Officer and Director,
Office of Technology Transitions

Executive Summary

This report describes the Department of Energy (DOE) Office of Technology Transitions (OTT) Energy Program for Innovation Clusters (EPIC) program progress and implementation. In fiscal year (FY) 2020, Congress first appropriated $5 million (M) for OTT to fund incubators that support energy technology innovation clusters and develop programming for energy entrepreneurs. In turn, OTT established the EPIC program. The goal of the EPIC program is to support the incubator community and innovation ecosystems leading to the commercial success of energy technology-focused startups and small businesses that facilitate American job creation and provide resources to under-represented communities. This report builds off the published report to Congress in June 2022, which provided an overview of the EPIC program and plans for implementation.[1] This report provides an update to Congress on the EPIC program, in its third round of awards and fourth year of programming as of FY 2024, including an overview of its program structure, awardees, as well as key performance measures and select outcomes for the program's first two rounds.

Progress and Implementation

Since the inception of the EPIC program in FY 2020, OTT piloted various mechanisms to award the appropriated dollars and help drive diversity, equity, inclusion and accessibility (DEIA) in the organizations that applied (Table ES-1). These mechanisms ranged from a prize competition and a Funding Opportunity Announcement (FOA) in Round 1, a multi-stage prize competition and startup pitch competitions in Round 2, and a "prize competition to cooperative agreement," a first-of-a-kind mechanism piloted within OTT, in Round 3. OTT's Round 3 prize-to-cooperative agreement approach involves a two-phase prize competition in which the winners of Phase 2 are invited to negotiate a $1M cooperative agreement to scale their programs. In Phase 1, awardees will design a plan to support energy startups and entrepreneurs; and, in Phase 2, awardees will implement the innovative, place-based plan.

In addition, other DOE program offices provided additional funds under the EPIC program to support incubators focused on their relevant technology area. In one case, OTT collaborated with the DOE Office of FECM to develop an independent Direct Air Capture (DAC) Pre-Commercial EPIC prize competition in FY 2023.

Table ES-1 provides an overview of the EPIC Rounds and the FECM DAC Pre-Commercial EPIC prize competition implemented from FY 2021 and plans through FY 2025, including how the prize competitions and phases were structured, the total amount awarded, partner program offices and their matching funds, and the number of incubators or startups awarded, or, for Round 3, timelines for awards.

[1] DOE. 2022. Energy Program for Innovation Clusters (EPIC), Report to Congress.

Table ES-1. EPIC Program Structure, Awardees, and Plans Through FY 2025

FY	Round	Part/Phase	Total Amont of EPIC Award (OTT and Program Offices)	Partner Program Offices and Matching Funds	Incubators and Startups Awarded
FY 21	OTT EPIC ROUND 1	Part 1 – Prize	$1M	N/A	20 incubators
		Part 2 – FOA	$9.5M	BTO - $375,000	10 incubators
				AEO - $250,000	
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FY 22	OTT EPIC ROUND 2	Phase 1 – Prize: Design	$1.3M	BTO - $100,000	24 incubators
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FY 23		Phase 2 – Prize: Move	$1M	N/A	10 incubators
		2 Startup Pitch Competitions	$358,000	OSDBU - $88,500	10 startups
				OE - $30,000	
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	FECM DAC Pre-Commercial EPIC Prize*	Phase 1 – Prize: Think It	$1.3M	FECM - $1.3M	13 incubators
		Phase 2 – Prize: Move It	$1.5M	FECM - $1.5M	5 incubators
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FY 24	OTT EPIC ROUND 3	Phase 1 – Prize: Design	$3.45M	GFO - $150,000	23 incubators
				EJE - $150,000	
				IEDO - $150,000	
				FES - $75,000	
		Phase 2 – Prize: Move	$1M per Cooperative Agreement**	to be determined	April 2024 Launch
FY 25		Cooperative Agreement		to be determined	January 2025 Planned

* This prize competition is a separate but connected initiative managed by FECM and uses the EPIC Round 2 multi-phase approach.

** Number of cooperative agreements depends on FY24 appropriations.

Note: Building Technologies Office (BTO), Arctic Energy Office (AEO), Office of Electricity (OE), Office of Nuclear Energy (NE), Solar Energy Technologies Office (SETO), Wind Energy Technologies Office (WETO), Water Power Technologies Office (WETO), Office of Small and Disadvantaged Business Utilization (OSDBU), Office of Fossil Energy and Carbon Management (FECM), Geothermal Technologies Office (GFO), Office of Energy Justice and Equity, Industrial Efficiency and Decarbonization Office, Fusion Energy Sciences (FES).

Key Performance Measures and Select Outcomes

This report is intended to meet Congressional requests in the written reports accompanying the House Energy and Water Development and Related Agencies Appropriations Bill of 2022 to describe the impacts of incubators funded through the EPIC program, in particular on job creation and workforce development, including low-income communities and under-represented entrepreneurs.[2] This report includes key performance and outcome measures from the 54 incubators funded in Rounds 1 and 2 to address this request.

As of February 2024, in their third year of a three-year award, the 10 incubators funded under the Round 1 FOA have supported 230 companies with a total annual revenue of $33M and secured more than $138M in follow-on funding. The companies supported by these incubators reported that they created 1,800 jobs since FY 2021. These incubators have also supported over 165 companies with diversity, equity, inclusion, and accessibility (DEIA)-relevant leadership teams.[3]

The EPIC program delivers vital resources and services to bolster place-based regional innovation ecosystems across the Nation. Figure ES-1 presents the geographic diversity of Round 1 and 2 incubators based on their locations.[4] Twenty-one of 54 (39 percent) Round 1 and 2 incubators are located in disadvantaged communities.[5] The EPIC Program's regional approach has resulted in geographically diverse awardees that support entrepreneurs from historically under-represented and underserved communities. The geographic reach of these incubators can span beyond the local communities in which they are based.

[2] House Committee on Appropriations, *Energy and Water Development and Related Agencies Appropriations Bill, 2022*, 117th Cong.,1st sess., 2022, Rep. 117–98, https://www.congress.gov/index.php/congressional-report/117th-congress/house-report/98/1.

[3] A DEIA-relevant leadership team is defined as having one or more executive leadership team members who self-identify as a person of color, a female or nonbinary person, an LGBTQ+ person, a person with disabilities, a veteran, a person who lives in rural areas, or a person adversely affected by low socioeconomic status or inequality.

[4] This map does not include FECM's DAC Pre-Commercial EPIC Prize winners.

[5] As defined by https://energyjustice.egs.anl.gov/, which is a census tract tool that the U.S. Department of Energy (DOE) has categorized as disadvantaged communities, or DACs, pursuant to Executive Order (EO) 14008 - Tackling the Climate Crisis at Home and Abroad.

Figure ES- 1: Incubator Locations of and States Supported by EPIC Rounds 1 and 2 Awardees.
Note: The white dots represent the location of the incubator, and the highlighted states show the regional coverage those incubators represent. This figure does not include the DAC Pre-commercial EPIC prize competition awards.

In addition to the key performance and outcome measures previously mentioned—e.g., companies supported, total annual revenue of supported companies, follow-on funding, job creation, and supported DEIA leadership teams—OTT aims to track additional outcome measures in future rounds of the EPIC program, including success rates of startups, engagement with DOE National Laboratories, advancement of a diverse range of technologies, inter-regional partnerships, and cross-cutting collaborations within DOE.

Energy Program for Innovation Clusters (EPIC): Progress and Implementation FY 2021 – FY 2024

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I. Report Language

During fiscal year (FY) 2022, Congress appropriated $5 million (M) and tasked the Department of Energy (DOE) Office of Technology Transitions (OTT) to fund incubators that support energy technology innovation clusters. This report is intended to meet Congressional requests in the written reports accompanying the House Energy and Water Development and Related Agencies Appropriations Bill of 2022 to describe the impacts of incubators funded through the Energy Program for Innovation Clusters (EPIC) program, in particular—

> *"The recommendation provides not less than $5,000,000 for a competitive funding opportunity for incubators supporting energy innovation clusters. These incubators should have the support of state, regional, and local entities. The Department is directed to provide to the Committee not later than 120 days after obligation of these funds a report on the impact incubators have on job creation and workforce development, including in low-income communities and on underrepresented entrepreneurs."*[6]

In 2020, OTT established the EPIC program. This report describes the EPIC program structure, funding activity updates, award status, and preliminary performance measures for EPIC, including jobs created, providing updates since the last report to Congress in June 2022.[7] OTT has implemented 3 rounds of the EPIC Program. Through EPIC Round 1, OTT successfully launched its first-ever prize competition program in FY 2020, and first-ever funding opportunity announcement (FOA) in fiscal year (FY) 2021. EPIC Round 2 was conducted in FY 2023, and EPIC Round 3, Phase 1 winners were announced April 2024.

In future reports, OTT will provide updates on additional incubator funding activities and current project progress, as well as outcomes of funded incubators as the current cohort of EPIC Round 1 FOA projects move toward completion in 2024. In addition, the CHIPS and Science Act authorized the Secretary of Energy, through the Chief Commercialization Officer, to develop a *National Clean Energy Incubator Program.*[8] The EPIC program responds to this direction.

II. Background

A. OTT Mission and EPIC Program Goals

In 2015, former Secretary of Energy Ernest Moniz authorized the formation of OTT to be responsible for developing and overseeing delivery of DOE's strategic vision and goals for technology commercialization and engagement with business and industrial sectors across the United States. Through the Energy Act of 2020, Congress codified OTT's mission to expand the commercial impact of DOE's research investments and focus on commercializing technologies that support DOE's missions.[9]

DOE is renowned for its research prowess, technology expertise, and ability to leverage American ingenuity to invent early-stage clean energy technologies. To meet the Nation's climate, employment,

[6] House Committee on Appropriations, *Energy and Water Development and Related Agencies Appropriations Bill, 2022*, 117th Cong.,1st sess., 2022, Rep. 117–98, https://www.congress.gov/117/crpt/hrpt98/CRPT-117hrpt98.pdf; House Committee on Appropriations, *Energy and Water Development and Related Agencies Appropriations Bill, 2022*, 117th Cong.,1st sess., 2022, Rep. 116-83, https://www.congress.gov/congressional-report/116th-congress/house-report/83/1.

[7] DOE. 2022. Energy Program for Innovation Clusters (EPIC), Report to Congress.

[8] CHIPS and Science Act, Section 10713. National Clean Energy Incubator Program.

[9] 42 U.S. Code § 16391.

and economic goals, it is imperative that our early-stage technologies are successfully guided through the commercialization process. OTT and its EPIC program support these goals. The goal of the EPIC program is to support the incubator community and innovation ecosystems leading to the commercial success of energy technology-focused startups and small businesses that facilitate American job creation and provide resources to under-represented communities. Incubators develop training programs for startups while building a localized ecosystem of resources to help these startups achieve commercial success. The ecosystem of resources that incubators develop may include potential customers, manufacturing and supply chain partners, investors, grant writing assistance, prototyping facilities, and other services companies can access.[10]

B. The Role of Incubators in Supporting Startups, Small Businesses, and Innovation

According to the U.S. Census Bureau, more than three million people have started a business each year in this country since 2005.[11] By the end of the first year, at least 40 percent of these businesses fail. Within five years, more than 80 percent fail.[12] Despite a high rate of failure, small businesses are critical to the Nation's economy and its growth. In the U.S., small businesses employ 47 percent of all private-sector employees, generate 62 percent of net new private-sector jobs, and account for 44 percent of gross domestic product.[13] Most science, technology, engineering, and mathematics employees work in the private-sector, and of those employees, 37 percent work for small firms.[14]

OTT recognizes that technology startups, particularly in energy-related sectors, often require a variety of services over and above capital access, including mentorship, technology validation, business development, and connections to suppliers and manufacturers. Barriers to market entry for hardware or hard-tech startups are high and include large capital requirements,[15] long development times, and the need to integrate into complex systems and supply chains.[16]

With the help of targeted business assistance—through the form of company incubation—entrepreneurs can be better prepared to turn their innovations into successful new ventures that have a greater-than-average chance of success.[17] Incubation services also have the potential to de-risk the startups for follow-on investors,[6] bolster regional economic development, strengthen national innovation capacity, and expand domestic energy-related manufacturing.

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[10] National Research Council, *Rising to the Challenge: U.S. Innovation Policy for the Global Economy* (Washington, DC: The National Academies Press 2012), https://doi.org/10.17226/13386.

[11] U.S. Census Bureau. (n.d.). *Business Formation Statistics*. U.S. Department of Commerce. Retrieved June 27, 2024, from https://www.census.gov/econ/bfs/index.html/*New Ventures* (Washington, DC: U.S. Department of Commerce, Economic Development Administration, 2011).

[12] David A. Lewis, Elsie Harper-Anderson, and Lawrence A. Molnar, *Incubation Best Practices That Lead to Successful New Ventures* (Washington, DC: U.S. Department of Commerce, Economic Development Administration, 2011).

[13] [3] U.S. Small Business Administration (SBA) Office of Advocacy, *Frequently Asked Questions* (Washington, DC: SBA, 2021), https://cdn.advocacy.sba.gov/wp-content/uploads/2021/12/06095731/Small-Business-FAQ-Revised-December-2021.pdf.

[14] Brian Headd, *Small Business Facts – Science/High-Tech Workers and Small* Firms (Washington, DC: SBA Office of Advocacy, 2021), https://cdn.advocacy.sba.gov/wp-content/uploads/2021/03/30103659/High-Tech-Workers-And-Small-Firms.pdf.

[15] Hara Wang and Cyril Yee, *Climate Tech's Four Valleys of Death and Why We Must Build a Bridge*, (Boulder, CO: Rocky Mountain Institute/Third Derivative, 2020), https://www.third-derivative.org/blog/climate-techs-four-valleys-of-death-and-why-we-must-build-a-bridge.

[16] David J. Garfield, Kate E. Moore, Richard Adams, *New Approaches to Energy Hardware Innovation and Incubation,* NREL/MP-6A70-73438 (Golden, CO: National Renewable Energy Laboratory, 2019), https://www.nrel.gov/docs/fy19osti/73438.pdf; K. Surana, E.D. Williams, W. Karwczyk, M. Montgomery, J. O'Neill, Z. Thomas, and Y. Zhang, *Regional Clean Energy Innovation* (College Park, MD: Energy Futures Initiative with University of Maryland Global Sustainability Initiative, 2020), https://cgs.umd.edu/sites/default/files/2020-02/Final_Regional%20Innovation%20Report_2.20.20.pdf.

[17] Lewis, Harper-Anderson, and Molnar, *Incubation Best Practices*, 2011.

In general, incubators help facilitate these processes through three mechanisms, which help guide the types of interventions needed to attain expected outcomes:

1. societal impact creation, whereby incubators enable innovators to address societal challenges at the intersection of science, technology, and social transformation where issues such as climate change and environmental justice can be addressed;
2. entrepreneurial culture development, whereby incubators foster collaborative spaces where ideas can be shared and refined and innovators support and inspire each other; and
3. commercialization and startup growth, a process that emphasizes inquisitiveness through customer discovery to guide and inform product and business model development.[18]

By providing due diligence, screening applicant companies, assisting with prototyping, connecting entrepreneurs with manufacturers, and advising startups to prudently use their capital on vital services, incubators can play a critical role helping startups transition their technologies into the market.[19] In addition, incubators can provide knowledge resources like networks and mentoring, that help improve business outcomes.[20]

III. EPIC Progress and Implementation

From FY 2020 through FY 2023, OTT leveraged $5M in annual appropriations to support three rounds of prize competitions and FOAs (Table 1). In FY 2021, OTT launched the first round of EPIC using a two-pronged approach—a prize competition in FY 2020 and a separate FOA resulting in cooperative agreements in FY 2021.

[18] Sohail, K., Belitski, M., & Castro Christiansen, L. (2023). *Developing business incubation process frameworks: A systematic literature review.* Journal of Business Research, 162, 113902, https://doi.org/10.1016/j.jbusres.2023.113902.
[19] Ginger S. Lange, *The Value of Business Incubators and Accelerators from the Entrepreneurs Perspective*, Dissertation (Atlanta, GA: Georgia State University, 2018), https://scholarworks.gsu.edu/bus_admin_diss/92/.
[20] Ibid. and Al-Mubaraki, H. M., & Busler, M. (2017). *Challenges and opportunities of innovation and incubators as a tool for knowledge-based economy*. Journal of Innovation and Entrepreneurship, 6(1), https://doi.org/10.1186/s13731-017-0075-y.

Table 1. EPIC Program Structure, Awardees, and Plans Through FY 2025

FY	Round	Part/Phase	Total Amont of EPIC Award (OTT and Program Offices)	Partner Program Offices and Matching Funds	Incubators and Startups Awarded
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* This prize competition is a separate but connected initiative managed by FECM and uses the EPIC Round 2 multi-phase approach.

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Note: Building Technologies Office (BTO), Arctic Energy Office (AEO), Office of Electricity (OE), Office of Nuclear Energy (NE), Solar Energy Technologies Office (SETO), Wind Energy Technologies Office (WETO), Water Power Technologies Office (WETO), Office of Small and Disadvantaged Business Utilization (OSDBU), Office of Fossil Energy and Carbon Management (FECM), Geothermal Technologies Office (GFO), Office of Energy Justice and Equity (EJE), Industrial Efficiency and Decarbonization Office (IEDO), Fusion Energy Sciences (FES).

OTT has experimented with several mechanisms for implementing EPIC and gathered valuable best practices that are informing the way DOE engages communities across America. Prize competitions may offer faster implementation and a lower submission burden for incubators than FOAs, which may increase the diversity of the types of organizations that participate. In general, prize competitions inherently can limit public sector influence since they are awarded based on the materials requested and work completed for a submission. On the other hand, FOAs may take longer to develop and launch and have a higher application burden and award negotiation process than prize competitions. However, the use of financial assistance agreements, such as cooperative agreements, allows OTT to take an active project management approach with its awardees, and provides awardees a stable, long-term source of capital.

OTT is now in its third iteration of EPIC and piloting a new hybrid structure based on feedback from stakeholders including but not limited to competitors and private and public industry representatives. This hybrid structure uses prize competitions as the competitive solicitation for cooperative agreements. OTT envisions that this approach will support participation from a more diversified array of applicants, combining the benefits of prize competitions and FOAs.

OTT partners with the National Renewable Energy Laboratory (NREL) to leverage their American Made Program[21] team to administer EPIC prize competitions. The remainder of this section describes the EPIC Rounds 1 to 2 implemented from FY 2021 to FY 2023.

FY 2021 EPIC Round 1

The following section describes the two parts of EPIC Round 1—the prize competition and FOA. This section also provides performance and outcome measures related to the FOA awardees.

Part 1: Prize Competition

The first part of EPIC Round 1 followed a prize competition approach. The prize competition sought to recognize the most innovative and impactful incubators focused on developing strong regional innovation clusters for energy-related technology and entrepreneurship. OTT received 64 eligible submissions, which underwent a competitive, multi-step, independent review and selection process established by DOE. Winners were selected based on submission merit. Eligible “incubators” included accelerators, co-working startup communities, or other models that accomplish similar goals. (Refer to Box: EPIC Round 1 Part 1 Prize Awardees).

[21] American-Made Challenges (americanmadechallenges.org).

EPIC Round 1 Part 1 Prize Awardees

On October 7, 2020, OTT presented awards totaling $1M to 20 incubators focused on developing strong regional innovation clusters. Awardee descriptions are provided in OTT's June 2022 report to Congress.

Arrowhead Center, Las Cruces, NM—Clean Energy Innovation Cluster & Accelerator

Austin Technology Incubator, Austin, TX—EMPOWER - Science to Startups

BRITE Energy Innovators, Warren, OH—Energy Storage Innovation Ecosystem

Cascadia Cleantech Accelerator, Portland, OR—The Cleantech Connectors for the PNW ecosystem

Centrepolis Accelerator, Southfield, MI—Michigan CleanTech Hardware Accelerator

Elemental Excelerator, East Palo Alto, CA—Elemental Excelerator

Expanding Frontiers, Brownsville, TX—Hub for Space and Energy Startups in South Texas

Exponential Impact, Colorado Springs, CO—Energy Entrepreneurship in Southern Colorado

FORGE Manufacturing Initiative, Somerville, MA—FORGE Innovative Manufacturing Cluster

Greentown Labs Houston, Houston, TX—Building a Cleantech Cluster in Greater Houston

KeyLogic Initiative: U.S. Research Impact Alliance, Morgantown, WV—KeyLogic Initiative: US Research Impact Alliance

Los Angeles Cleantech Incubator Unlocking Innovation Team, Los Angeles, CA—LACI is Expanding Clean Energy Startup Innovation

mHUB Chicago, Chicago, IL—mHUB Chicago: Nation's Largest Hardware Lab

Mississippi Development Authority V-QUAD, Jackson, MS—The Mississippi Virtual-Quad

The Combine Incubator, Lincoln, NE—The Combine Incubator

The Spark Innovation Center at UT Research Park, Knoxville, TN—Spark Innovation Center at UT Research Park

The WY RANCH, Sheridan, WY—The WY RANCH

Trailhead Boise, Boise, ID—CleanTech Incubator for Energy Related Technologies

Urban Future Lab, Brooklyn, NY—Urban Future Lab Northeast Cleantech Hub Growth

Water, Energy and Technology Center Team, Fresno, CA—Bolstering Success for Energy Startups

Source: DOE. 2022. Energy Program for Innovation Clusters (EPIC), Report to Congress.

Part 2: Funding Opportunity Announcement

The second part of EPIC Round 1 was a FOA that was published on October 29, 2020. OTT received 34 eligible applications with a total of $42.8M requested. Awardees were selected based on how well they met the goals of the EPIC FOA topic in three main criteria categories: (1) technical merit, innovation, and impact; (2) project plan; and (3) team and resources.

In June 2021, $9.5M was awarded ($8.8M by OTT, and an additional $0.7M total by EERE BTO, AEO, and OE) to 10 incubators. Following the awardee announcement, three months of rigorous negotiations between awardees and OTT ensured that projects demonstrated potential for measurable impacts. The time from announcement to obligation of funds took approximately one year, which is typical for cooperative agreement funding opportunities. FOA awardee projects commenced on October 1, 2021, and span up to three years.

The 10 awardees support innovation ecosystems across 32 states (Figure 1). The winners represent a mix of established, as well as new and emerging incubators, including university-affiliated incubators (Table 2). They support a wide range of energy-related technology, including buildings, energy storage, hydrogen, water, carbon, fossil fuel transition, vehicles tech, grid-enabling tech, cybersecurity hardware, solar, wind, and general clean energy technologies. All awardees have established partnerships with industry, DOE's National Laboratories, or State and local government organizations, to support catalyzing local innovation ecosystems.

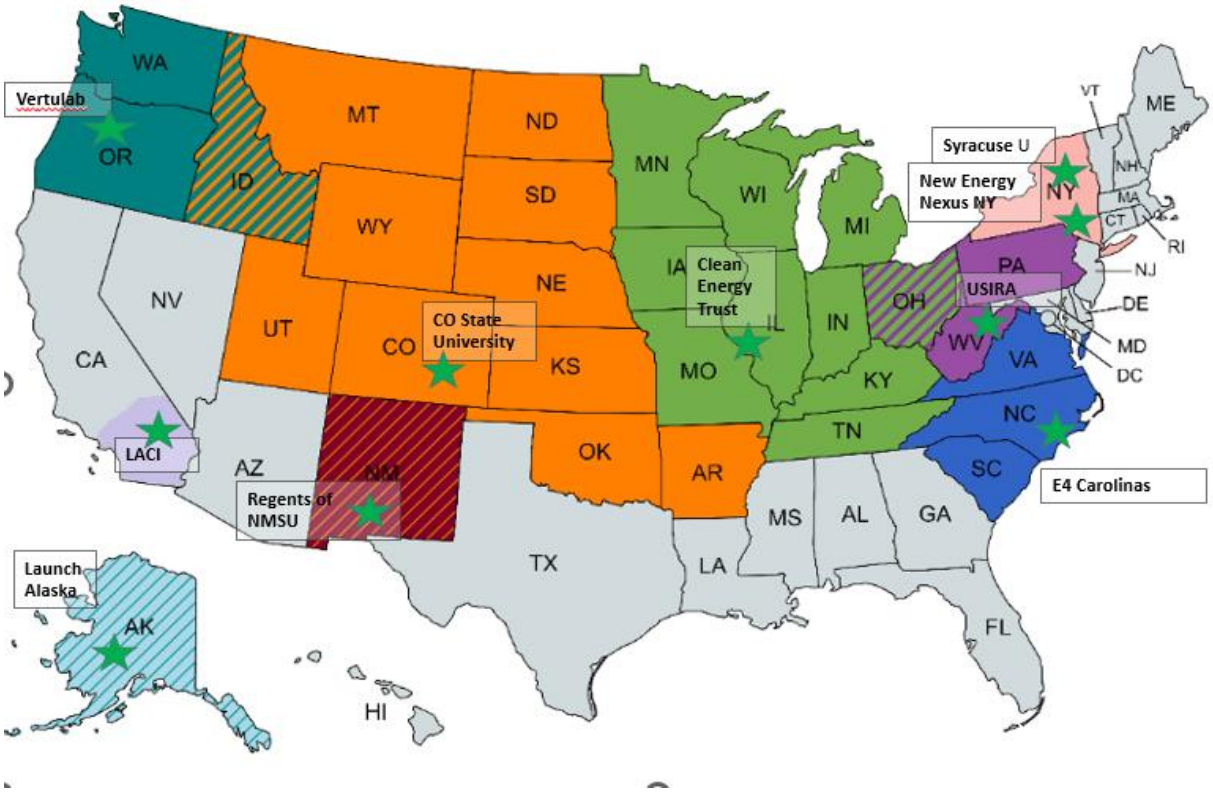

Figure 1*1*: EPIC FOA awardee support territory. The colors represent a single awardee, whereas the diagonal stripes show states that are supported by multiple awardees (i.e., VertueLab covers the teal-colored states plus the teal striped states of Alaska and Idaho). Launch Alaska also covers Alaska shown by the light blue stripes.

Table 2. Round 1 Part 2 FOA Awardees

Project Title	FOA Awardee	Location	Project Description
Leveraging a Southern California Energy Innovation Cluster to Pilot & Validate Emerging Energy Technologies	Los Angeles Cleantech Incubator (LACI)	Los Angeles, CA	LACI aims to scale the impact of its incubation program and accelerate the momentum of early-stage companies toward investment and customer-paid commercial deployments of emerging clean energy technologies. To accomplishing this, LACI is designing new startup pilots using input from clean energy ecosystem stakeholders within the Los Angeles and Greater Southern California region.
The Clean Fight: Bringing NY's Best	New Energy Nexus NY	Brooklyn, NY	New Energy Nexus NY is creating a statewide energy storage hardware innovation cluster to accelerate New York's energy storage manufacturing industry, positioning it as a hub for energy storage innovation, research, development, and manufacturing.
Heartland Climate Partnership (formerly: Midwest Regional Innovation Partnership)	Evergreen (formerly: Clean Energy Trust)	Chicago, IL	MRIP is enabling Midwest energy hardware and related technology startups to scale, attract capital, create jobs, and drive economic development in the Midwest. MRIP will launch three new accelerator programs, which will benefit from MRIP partners' collective expertise, resources, and reach.
New Mexico Clean Energy Resilience and Growth (NM CERG) Cluster	Regents of New Mexico State University (NMSU)	Las Cruces, NM	NM CERG is working with regional stakeholders to update existing and create new programming for an idea-to-business pipeline for startups focused on commercializing clean energy technologies.
Energy Program Innovation Cluster for Equity and Health in Grid-interactive Efficient Buildings (EPIC GEB)	Syracuse University	Syracuse, NY	Syracuse's project aims to fertilize the regional ecosystem of companies making energy hardware and related products required to achieve next-generation grid-interactive efficient buildings (GEBs). The project takes advantage of the region's long history of successful GEB-focused businesses and is supporting targeted outreach to venture firms and industry.
IMPACT Accelerator	United States Research Impact Alliance (USRIA)	Morgantown, WV	IMPACT Accelerator is identifying and supporting federally funded technologies that have the potential to solve a targeted set of challenges for the energy and manufacturing industries. The IMPACT acceleration process operates with a "market-pull" orientation and deeply engages with industry stakeholders.
Launch Alaska Transportation and Energy Accelerator (LATEA)	Launch Alaska	Anchorage, AK	Launch Alaska is stimulating energy and related hardware technology development to rapidly expand the growing cluster of innovative companies developing and deploying energy solutions in Alaska. The LATEA project focuses on enhancing resilience and operational sustainability, leading to greater development of transportation- and energy-related hardware technologies in Alaska.
Colorado Energy Innovation Collaborative (CEIC)	Colorado State University	Fort Collins, CO	The CEIC project is creating an energy hard-tech accelerator that supports two cohorts of up to 20 founders. The proposed Rockies/Plains Energy Accelerator for Commercializing Hard-tech (REACH) is specifically tailored to the needs of the region.
Regional Energy Hardware Innovation Accelerator	E4 Carolinas, Inc.	Charlotte, NC	E4 Carolinas, Inc., is engaging the region's energy hardware clusters and ecosystem to support identifying U.S. hardware-focused startups each year. The project aims to connect these startups with advisors and resources to build a regional capacity for innovation through demonstrations with prospective customers.
Northwest Cleantech Innovation Network (NWCIN)	VertueLab	Portland, OR	VertueLab is adding new programs to specifically address the challenges facing new energy hardware technology startups by establishing a regional entrepreneurial support network. VertueLab is targeting this support to Oregon, Washington, Idaho, and Alaska entrepreneurs and cleantech startups.

FY 2022 to 2023 Round 2

This section describes the multi-stage prize competition implemented in EPIC Round 2, including a description and awardees of each of the three phases—Design, Move, and Prove and two startup pitch competitions.

Multi-Stage Prize Competition

In August 2022, OTT released the announcement for the EPIC Round 2 Prize, a $4.5M, multi-stage prize competition that offered the opportunity for incubators to nominate startup companies to participate in two pitch competitions to win cash prizes (Figure 2).

Figure 2.*2* EPIC Round 2 Prize Competition Phases and Timeline.

Phase 1—Design

In Phase 1: Design, incubators across the Nation submitted plans to develop strong clusters, connections, and support for startups and entrepreneurs whose businesses focus on energy-related technologies. OTT evaluated submissions based on the strength of the incubator's mission, team, operations, and strategic plan. The prize competition was open from August 2, 2022, through October 25, 2022.

OTT partnered with five DOE program offices to offer an additional $300,000 in technology-specific bonus prizes. Six $50,000 bonus prizes were made available for incubators supporting startups in buildings technologies, water power, solar, wind, and nuclear energy funded by the Office of Energy Efficiency and Renewable Energy (EERE) and the Office of Nuclear Energy (NE), respectively.

In December 2022, in collaboration with these program offices, OTT selected 24 awardees out of 68 eligible submitters for cash prizes of $50,000 each (refer to Box: Round 2 Phase 1-Design Awardees).

Prize competition submitters included incubators that aid in the development of new ventures, business accelerators, coworking startup communities, and other organizations that advocate for entrepreneurship and innovation. Submitters were categorized as New/Emerging or Established (Figure 3).[22]

[22] See page 18 of the official rules document: EPIC Prize Official Rules (herox.com).

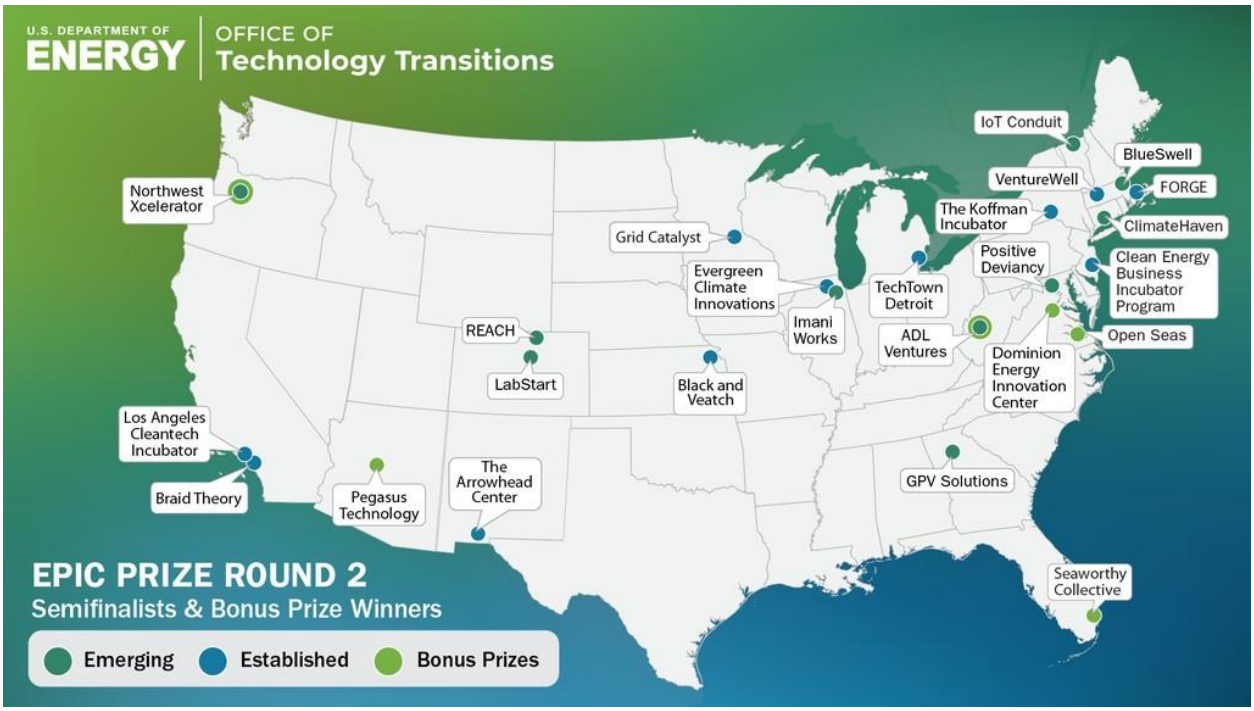

Figure 33: EPIC Round 2 Phase 1-Design Winner Locations.

Table 3. Round 2 Phase 1-Design Awardees

Project Title	Prize Awardee	Location	Project Description
New and Emerging Winners			
Accelerating the Underestimated and the Overlooked	GPV Solutions	Austell, GA	Supports underestimated and overlooked founders and solutions for disadvantaged communities through Florida Memorial University pilot.
Broadening Blue Entrepreneurship	BlueSwell	Cambridge, MA	Supports blue technology entrepreneurs with a more diverse audience of potential founders in Massachusetts and Rhode Island.
A New Haven for New Innovation	ClimateHaven	New Haven, CT	Leverages regional strengths in manufacturing and scientific research in southern Connecticut to incubate new hard-tech focused ventures.
Connecting Climatetech & Community through Pilots	IoT Conduit	Burlington, VT	Technology Partner Program supports entrepreneurs through pilot demonstrations of their technology in a living lab in Vermont.
Imani Works Hard-Tech Community Incubator	Imani Works	Chicago, IL	Supports African American entrepreneurs to ensure that green hard-tech manufacturing is benefitting disadvantaged communities in Chicago.
Accessibility to Lab IP Entrepreneurship	LabStart	Golden, CO	Helps diverse engineers launch clean energy startups based on technology from DOE National Laboratories.
Low-Carbon Mass Deployment Accelerator	ADL Ventures	Charleston, WV	Supports developing a low-carbon mass deployment accelerator for construction hard-tech innovation. EERE's BTO sponsored this bonus prize award.
Embryia Solar Accelerator	Positive Deviancy	Sterling, VA	Supports early stage solar hard-tech entrepreneurs.
REACHing Energy, Food, & Water Ventures	CSU's REACH Accelerator	Fort Collins, CO	Supports founders at the nexus of food, energy, and water in the Rocky Mountains Great Plains region.
Xcelerating Black Building Tech Startups	Northwest Xcelerator	Portland, OR	Supports black and underserved entrepreneurs in the creating of energy-related building technology startups in Oregon. The Building Technologies Office sponsored this bonus prize award. EERE's BTO sponsored this bonus prize award.
Founder Mentorship Program	Seaworthy Foundation	Miami, FL	Supports diverse early-stage startups working in global ocean and climate startups, enabling entrepreneurship in the blue economy and accelerating company growth by supporting commercialization of water power technologies while increasing connectivity and collaboration between relevant stakeholders. EERE's WTO sponsored this bonus prize award.
Regional Innovation StartUp Studio	Pegasus Technology	Surprise, AZ	Supports helping develop new solar hard-tech companies from research at university labs through a startup studio, connecting researchers with experienced entrepreneurs. EERE's STO sponsored this bonus prize award.
ARIEL Offshore Energy Innovation Program	OpenSeas Technology Innovation Hub	Norfolk, VA	Supports renewable ocean energy, starting with offshore wind. EERE's WETO sponsored this bonus prize award.
Established Awardees			
IgniteX Climate Tech Accelerator	Black & Veatch	Overland Park, KS	Accelerating hard-technologies capable of significant carbon reduction and increased diversity in the energy innovation ecosystem.
Clean Energy Technology Transfer	Clean Energy Business Incubator Program	Stony Brook, NY	Coordinates energy-relevant hard-tech IP portfolio development across National Labs and universities.

Energizing the Blue Economy	Braid Theory	San Pedro, CA	Engages entrepreneurs with industry to advance marine energy and blue economy solutions into the market.
Energy and Mobility Innovation in Detroit	VentureWell	Hadley, MA Detroit, MI	Partnered with TechTown Detroit to support underrepresented hard-tech startups in business model and financial model validation.
Manufacturing Expertise-In-Residence	FORGE	Somerville, MA	Leverages experts in residence with domain knowledge to provide additive, special manufacturing-focused support to startups.
New Energy New York Charge Up	Koffman Southern Tier Incubator	Binghamton, NY	Delivers a complementary bootcamp and microgrant program to address major gap areas for energy storage startups.
PowerNorth Incubator	Grid Catalyst	Minneapolis, MN	Matching energy startups with regional corporate partnerships for product refinement and accelerated market entry specifically around cold climate challenges.
Scalable Energy Testbed Project	Arrowhead Center at New Mexico State University	Las Cruces, NM	Establishing a utility-scale testbed for solar, wind, and geothermal technologies.
Structured Sales Support Program	Evergreen Climate Innovations	Chicago, IL	Providing sales training to diverse founders, addressing the lack of training and resources that is common with energy hard tech founders.
Transportation Energy Nexus Innovation Program	Los Angeles Cleantech Incubator	Los Angeles, CA	Supports startups in combined hardware and software systems delivering integrated solar, storage, and charging solutions.
SPARK Virginia	Dominion Energy Innovation Center	Ashland, VA	Making it safer and easier to build, generate, transmit, and consume nuclear and hydrogen energy in Virginia and beyond. NE sponsored this bonus prize award.

Phase 2—Move

In Phase 2–Move, incubators from the Design phase showed how they started moving their plans into action. The prize competition was open from December 6, 2022, through March 28, 2023. OTT selected 10 winning incubators out of 24 eligible competitors for cash prizes of $100,000 each.

Incubators in this phase were tasked with demonstrating that they have the talent and resources to make significant progress toward implementing their original proposal. As part of the submissions, the 24 winners presented achievements, metrics, equity and inclusion practices, budgets, and relationships from the last three months. A panel of expert reviewers rated competitors on their understanding of the local energy ecosystem, the depth of their team and network, and their learnings from challenges faced.

Round 2 Phase 2-Move Winners

In April 2023, the following 10 incubators won $100,000 each:

New/Emerging Winners

- ADL Ventures: The Deployment Engine (Charleston, WV) @k
- Positive Deviancy: Embryia Solar Accelerator (Sterling, VA)
- LabStart: Accessibility to Lab IP Entrepreneurship (Golden, CO)
- GPV Solutions: Accelerating the Underestimated and the Overlooked (Austell, GA)
- CSU's REACH Accelerator: REACHing founders @ the Food, Energy & Water Nexus (Fort Collins, CO)

Established Winners

- Clean Energy Business Incubator Program: Clean Energy Technology Transfer (CETX) (Stony Brook, NY)
- VentureWell: Energy & Mobility Innovation in Detroit (Hadley, MA and Detroit, MI)
- Black & Veatch: IgniteX Climate Tech Accelerator (Overland Park, KA)

- FORGE: Manufacturing Expertise-In-Residence (Somerville, MA)
- Los Angeles Cleantech Incubator: Transportation Energy Nexus Innovation Program (Los Angeles, CA)

EPIC Round 2 Phase 2: Startup Pitch Competition

OTT launched a $165,000 virtual pitch competition as part of EPIC Round 2 Phase 2 to directly support startups working with EPIC incubator winners on their journey to commercialization. The competition included twenty-four leading startups nominated by the most innovative place-based incubators from Round 2 Phase 1. Each cleantech startup showcased their technology tackling a piece of the climate crisis and a business model to commercialize it in front of a panel of three industry experts and more than 250 virtual attendees. They represented dozens of states from across the country and presented hard-tech solutions spanning buildings and agricultural sectors as well as innovations in maritime, solar, electric vehicles, and grid enhancements. The 24 teams competed for a first-place prize of $50,000, second place prize of $20,000, and third place prize of $10,000. The incubator that nominated the first-place startup also had the opportunity to win $25,000.

Two Bonus Prizes of $20,000 each were also awarded by the SETO and OE to startups specifically presenting a solar-relevant hardware innovation and a grid resilience enhancing hardware innovation. The Phase 2 winning incubators that nominated the bonus winners each received a $10,000 prize.

Round 2 Phase 2 Startup Pitch Competition Winners

First Place: OMC Hydrogen – OMC Hydrogen uses heat from concentrating solar and renewable electricity along with low-cost, domestically common materials to simultaneously split both CO2 and water into syngas, which can be upgraded into many valuable fuels and chemicals. OMC Hydrogen won $50,000.

OMC Hydrogen was nominated by REACH Energy Accelerator (Fort Collins, CO) providing a dedicated accelerator to support founders at the nexus of food, energy, and water in the Rocky Mountains-Great Plains region. REACH also won $25,000.

Second Place: Argyle Earth – Argyle Earth, nominated by Arrowhead Center at New Mexico State University, is developing a system for converting low-temperature waste heat into electricity for less than $0.08 per kilowatt hour. Argyle Earth won $20,000.

Third Place: Mars Materials – Mars Materials, nominated by LabStart, is commercializing carbontech nitrilation, developed by the National Renewable Energy Laboratory, to produce acrylonitrile from captured C02 biomass. Mars Materials won $10,000.

Solar Energy Technologies Office Sponsored Bonus Prize: Sol Clarity – Sol Clarity's technology automatically removes dust and improves the energy yield of solar panels without using water for cleaning. Sol Clarity clearly spoke to the progress and technology demonstration they have been able to conduct to date. Sol Clarity won $20,000 from SETO.

Sol Clarity was nominated by FORGE (Somerville, MA). FORGE leverages experts in residence with domain knowledge to provide additive, special manufacturing-focused support to startups. FORGE also won $10,000.

Office of Electricity Sponsored Bonus Prize: Gemini Energy Solutions – Gemini is creating opportunities for rural and disadvantaged communities by reducing the training required to perform investment grade energy audits and expanding jobs in low-income areas impacted by the energy transition. Gemini Energy Solutions won $20,000 from OE.

Gemini Energy Solutions was nominated by Green Power Ventures Accelerator (Austell, GA) and supporting underestimated and overlooked founders to provide solutions for the built-environment in disadvantaged communities. Green Power Ventures Accelerator also won $10,000.

Source: DOE, energy.gov/technologytransitions/articles/introducing-winners-most-epic-cleantech-pitch-competition.

Phase 3—Prove

In Phase 3—Prove, winners of the Phase 2—Move phase showed how they demonstrated success on their planned goals. The prize competition was open from May 5, 2023, through September 21, 2023. On November 1, 2023, after a competitive selection process, DOE awarded the Prove phase grand prize

of $500,000 each to four incubators from across the county concluding the final phase of the OTT program.

Phase 3—Prove disbursed $2M in cash prizes to help regional incubators fund vital activities, such as entrepreneur mentorship, technology validation, and business development, to strengthen the Nation's clean energy future. A panel of expert reviewers evaluated submissions and interviewed the 10 finalists to assess whether they had successfully accomplished their planned goals. Many submissions focused on diverse and underserved communities, driving significant impact for those disproportionately affected by climate change. All submissions demonstrated a commitment to supporting local energy startups and driving regional innovation. Four awardees were announced with broad geographic reach to support regions across the Nation (refer to Box: Round 2 Phase 3 Prize Competition-Prove Awardees and Figure 4).

Round 2 Phase 3 Prize Competition-Prove Awardees

The following winners each won $500,000 for their outstanding accomplishments:

ADL Ventures: The Deployment Engine (Charleston, WV) – ADL Ventures is creating a low-carbon, mass deployment accelerator that connects innovative decarbonization technologies with construction industry customers and deployment opportunities in Appalachia.

CSU's REACH Accelerator: REACHing founders @ the Food, Energy & Water Nexus (Fort Collins, CO) – REACH's accelerator is dedicated to supporting founders at the nexus of food, water, and energy through innovative programming and embedded entrepreneurs-in-training (EITs).

VentureWell: Energy & Mobility Innovation in Michigan (Hadley, MA and Detroit, MI) – Ascend by VentureWell bridges the gap between customer discovery and investment readiness in partnership with TechTown Detroit by focusing high-touch support for entrepreneurs focusing on emissions reductions, smart mobility technologies, infrastructure development.

LabStart: Accessibility to Lab IP Entrepreneurship (Golden, CO) – LabStart is helping launch and accelerate clean energy companies led by people from under-represented communities and based on technology from DOE National Laboratories.

Figure *4*: EPIC Round 2 Phase 3 Prize Competition Awardees and the States Awardees Support.

EPIC Round 2 Phase 3: Startup Pitch Competition

In parallel with the EPIC's Round 2 Phase 3, "Prove" competition, competing incubators also nominated a startup of their choice to compete in the pitch competition over the summer. OTT partnered with DOE's Office of Small and Disadvantaged Business Utilization (OSDBU). From a pool of hundreds of candidates, the EPIC incubators nominated 15 startups for the pitch competition. From that group, the top eight clean tech startups were selected to pitch their cutting-edge technologies to a panel of four industry experts and more than 1,000 attendees at the DOE's Small Business Forum and Expo in New Orleans, Louisiana, on July 11–12, 2023 (Figure 5).

Figure 5. EPIC Phase 3 Startup Pitch Competition winners, other competitors, and event organizers alongside Secretary of Energy Jennifer M. Granholm, Chief Commercialization Officer and Director of OTT Dr. Vanessa Z. Chan, and the Director of OSDBU Ron Pierce on the stage in New Orleans, Louisiana.

Each startup pitched a five-minute presentation detailing their technology, market opportunity and strategy, business model, and team. Reviewers scored presentation skills, content, and investment potential before arriving at the five winners representing five states across the country. OSDBU doubled the OTT prize amounts and added 4th and 5th place winners. Secretary of Energy Jennifer M. Granholm presented checks to five startups that won over $160,000 for their groundbreaking technologies (refer to Box: Round 2 Phase 3 Pitch Competition Winners).

Round 2 Phase 3 Startup Pitch Competition Winners

First Place: KLAW Industries – KLAW Industries, developed Pantheon™, a high-quality, partial cement replacement made from post-consumer glass. By adding additional crystal structures to concrete, Pantheon™ strengthens it and allows concrete producers to reduce cement content, saving costs and lowering carbon emissions. KLAW Industries aims to provide material solutions that benefit the concrete and recycling industries while helping to combat carbon emissions. KLAW Industries won $100,000. Of note, when the founders of KLAW were students, they won a $25,000 bonus prize in OTT's Energy Technology University Prize which allowed them to build out their minimum viable product (MVP).

KLAW Industries was nominated by Koffman Southern Tier Incubator (Binghamton, NY) and is delivering a bootcamp and microgrant program to address major gap areas for energy storage startups. Koffman Southern Tier Incubator also won $25,000.

Second Place: Renewell Energy – Renewell Energy, nominated by Labstart, technology can repurpose inactive oil wells and convert them into a renewable energy storage network, which addresses environmental hazards, reduces costs, and creates long-term revenue for well owners. With their patented process, they are transforming oil and gas liabilities into renewable energy assets, contributing to sustainability and economic benefit. Renewell won $40,000.

Third Place: C-Motive Technologies, Inc. – C-Motive, nominated by Evergreen Climate Innovations, is commercializing a sustainable, high-efficiency electrostatic motor to decarbonize industrial and e-mobility applications. Their innovative motors and generators offer modular, scalable, and customizable solutions with lower environmental impact, reduced carbon emissions, and a diverse regional supply chain. C-Motive won $20,000.

Fourth Place: **ReJoule –** ReJoule, nominated by IgniteX Climate Tech Accelerator, is supporting the all-electric revolution by maximizing the value of batteries. Their technology enables speedy and accurate diagnostics of battery health, making it easier for automakers to monitor and repurpose batteries to accelerate the transition to clean energy. ReJoule won $5,000.

Fifth Place: **Plantd –** Plantd, nominated by ADL Ventures, is providing carbon-negative materials for new homes and buildings. By harnessing the power of perennial grass and innovative manufacturing techniques, they are creating stronger, lighter, and more affordable building panels that lock away carbon. Plantd won $3,500.

DAC Pre-Commercial EPIC Prize Competition

The Direct Air Capture (DAC)[23] Pre-Commercial EPIC prize competition is managed by DOE's Office of Fossil Energy and Carbon Management (FECM) and uses the EPIC Round 2 three-phase prize competition approach. The DAC Pre-Commercial EPIC prize competition is part of the American-Made DAC Prize competitions, a suite of separate but connected prize competitions that were developed to address the numerous steps involved in moving an innovation from idea to market.[24] FECM designed the DAC EPIC prize competition to create an ecosystem of support for DAC and related technology entrepreneurs.

The DAC EPIC prize competition will award up to $3.7M in cash prizes to incubator teams that submit creative and impactful plans to support entrepreneurs and innovators in the DAC space and create meaningful community engagement. It aims to support both emerging and established incubators in implementing those plans to develop strong clusters, resources, and connections for energy startups and entrepreneurs. From mentorship and networking to prototyping assistance and intellectual property management, incubators can accelerate economic development, strengthen innovation, and expand domestic carbon-removal technology development and manufacturing.

[23] Direct air capture is a process that separates carbon dioxide from the air, helping to reduce the level of carbon dioxide already in the atmosphere. The separated carbon dioxide can then be safely and permanently stored deep underground or converted into useful carbon-containing products like concrete that prevent its release back into the atmosphere.
[24] Direct Air Capture (DAC) Prize | American-Made Challenges (americanmadechallenges.org).

The DAC EPIC Phase 1 awarded $1.3M to 13 semifinalists that submitted creative and impactful plans to support entrepreneurs and innovators in the DAC technology space and create meaningful community engagement (refer to Box: DAC EPIC Prize Competition Phase 1-Move Awardees) (Figure 6).[25]

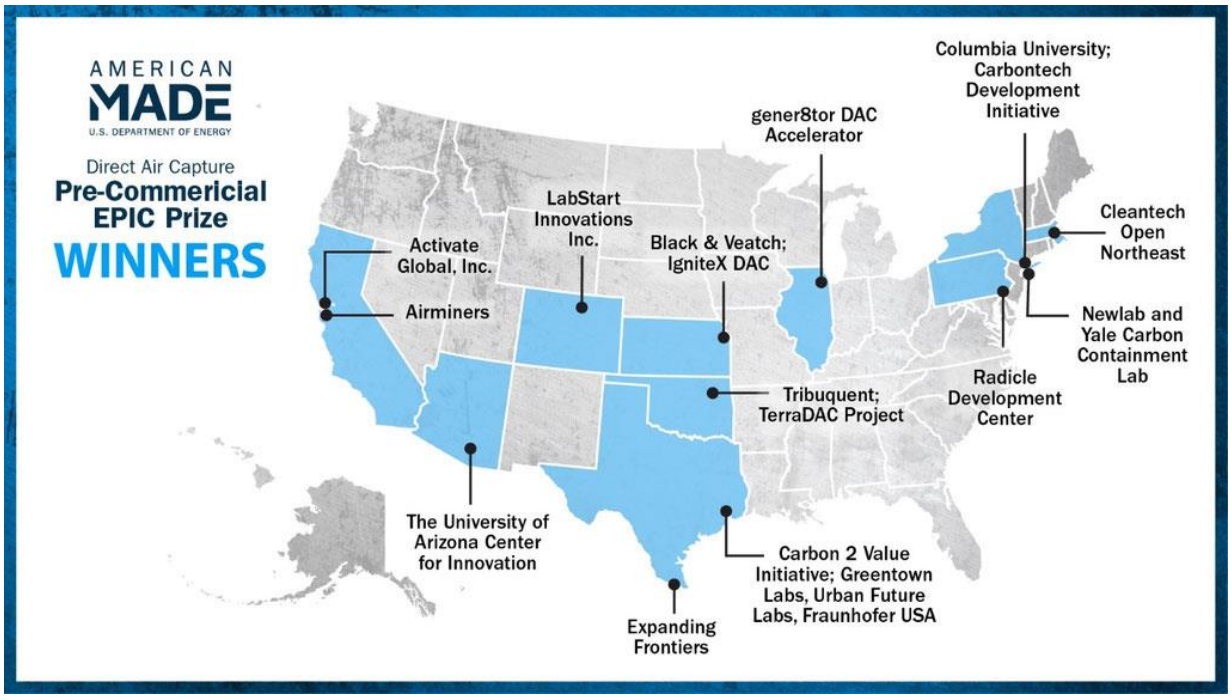

Figure 6.6 DAC Pre-Commercial EPIC Prize Competition "Think It" Phase Winners.

[25] DOE Announces $1.3 Million Toward Innovations in Carbon Dioxide Removal: https://www.energy.gov/fecm/articles/doe-announces-13-million-toward-innovations-carbon-dioxide-removal.

DAC EPIC Prize Competition Phase 1-Design Awardees

Each of the following semifinalist teams received $100,000 in cash prizes and is eligible to advance to the "Move" Phase of the prize competition to demonstrate momentum toward implementation of their solutions.

- Activate Global, Inc. — Berkeley, CA: Layers new, targeted direct air capture programming into an existing entrepreneurial fellowship to support three to five new direct air capture startups yearly, including direct recruitment of diverse direct air capture founders leveraging generative artificial intelligence and natural language modeling.
- Impossible Labs, Inc. (Airminers) — San Mateo, CA: Kickstarts a DAC Pioneers program offering that gives direct air capture startups resources and DOE National Laboratory partnerships with a focus on environmental justice, leveraging a network of more than 2,000 members that support carbon removal startups.
- Black & Veatch Corp. (Black & Veatch +RTI International — IgniteX DAC Accelerator) – Overland Park, KS: Advances the development and commercialization of hard-tech direct air capture and carbon removal technologies, regardless of development stage, through access to expertise, a network of clients and partners, and mentorship.
- Greentown Collaborative (Carbon 2 Value Initiative) — Houston, TX: Supports equity-driven direct air capture and carbon management technologies from innovation to deployment, enabling direct air capture startups to engage with the carbontech value chain.
- NECEC Institute Inc. (Cleantech Open Northeast) — Somerville, MA: Helps innovators establish product-market fit and connect with experts who can accelerate technologies from lab to pilot through a 10-week program.
- Trustees of Columbia University (Carbontech Development Initiative) — New York, NY: Provides technology development grants and accelerator training to direct air capture innovators, emphasizing whole-team training rather than focusing on startup executives.
- Expanding Frontiers Corp. — Brownsville, TX: Empowers local entrepreneurs to tackle challenges through recruitment and staffing of innovators and subject matter experts with the goal of bringing up to five new innovations to the market in three years.
- gener8tor Management LLC (gener8tor DAC Accelerator) — Chicago, IL: Will invest $100,000 per company in five direct air capture startups in the first year and guide them through the process with individualized coaching, mentorship, networking, and supporter access.
- LabStart Innovations Inc. — Boulder, CO: Creates accessible pathways for entrepreneurs to bring direct air capture technology from national labs to market, including recruitment, assistance with funding, stipends, and industry resources.
- Newlab LLC — Brooklyn, NY: Developed the DAC Slingshot Program to accelerate the development of direct air capture technologies by providing targeted and differentiated support and addressing barriers to formation and lab-to-pilot innovations.
- OxiCool, Inc. (Radicle Development Center) — Malvern, PA: Treats hardware development as a specialized skillset and matches physical infrastructure with an experienced team of engineers to catalyze the build out of promising direct air capture technology.
- Tribuquent Corp. (TerraDAC Project) — Tulsa, OK: Advances direct air capture technologies with the purpose of fostering climate restoration and a sustainable future through research and development, funding, lab resources, community partnerships, and business development.
- Campus Research Corp. (University of Arizona Center for Innovation) — Tucson, AZ: Supports direct air capture innovators by providing online training and expertise, connections, incubation programs, facilities, and resources.

Phase 2 closed on February 2024 (refer to Box: DAC EPIC Prize Competition Phase 2-Move It Winners) and on April 17, 2024, DOE FECM awarded $1.5M to five incubators finalists for developing commercialization programs that support technologies to reduce carbon dioxide pollution by removing it directly from the atmosphere.

DAC EPIC Prize Competition Phase 2-Move It Winners

Each of the following finalist teams received $300,000 in cash prizes and is eligible to advance to the "Prove It" Phase of the prize competition to demonstrate momentum toward implementation of their solutions.

- Activate Global, Inc. — Berkeley, CA
- Impossible Labs, Inc. (Airminers) — San Mateo, CA
- OxiCool, Inc. (Radicle Development Center) — Malvern, PA
- Newlab LLC — Brooklyn, NY
- gener8tor Management LLC (gener8tor DAC Accelerator) — Chicago, IL

At the conclusion of the three phases, the prize competition is expected to award a total of $3.7M in cash prizes. "Move It" Phase winners advanced to the final "Prove It" Phase, where they will be asked to demonstrate the success of their solution implementation and compete for a grand prize of $750,000 and runner-up prize of $250,000 in cash awards. "Prove It" Phase winners will be announced in January 2025.

FY 2023 to FY 2024 EPIC Round 3

EPIC Round 3 launched in September 2023 with Phase 1 submissions due in February 2024. EPIC Round 3 is a first-of-its-kind competitive funding program that combines the prize and FOA financing mechanisms to create a hybrid program. OTT incorporated best practices gained over the first two prize competition rounds to offer a multistage prize competition in which second phase winners are invited to directly negotiate a cooperative agreement with OTT worth up to $1 million. These modifications reflect feedback from previous EPIC participants (both winners and applicants), as well as an OTT Request for Information (RFI), which indicated incubators as benefitting both from the streamlined submission processes and quick injections of capital offered by prize competitions, and the stable long-term capital provided by cooperative agreements.

Phase 1

In Phase 1 incubators across the Nation submitted plans to develop strong innovation clusters, robust connections, and tailored support for startups and entrepreneurs whose businesses focus on energy-related technologies. OTT evaluated submissions based on the strength of the incubator's mission, team, operations, and strategic plan. The prize competition was open from September 2023 through February 2024.

To further bolster the program, OTT partnered with four DOE program offices to offer an additional $450,000 in prizes for a total of $3.45M. Partner offices that added funding included the Office of Energy Justice and Equity (EJE), Office of Science Fusion Energy Science, and EERE, including the Geothermal Technologies Office (GTO), and Industrial Efficiency & Decarbonization Office (IEDO).

In April 2024, in collaboration with these program offices, OTT selected 23 awardees out of 76 eligible submitters for cash prizes of $150,000 each.

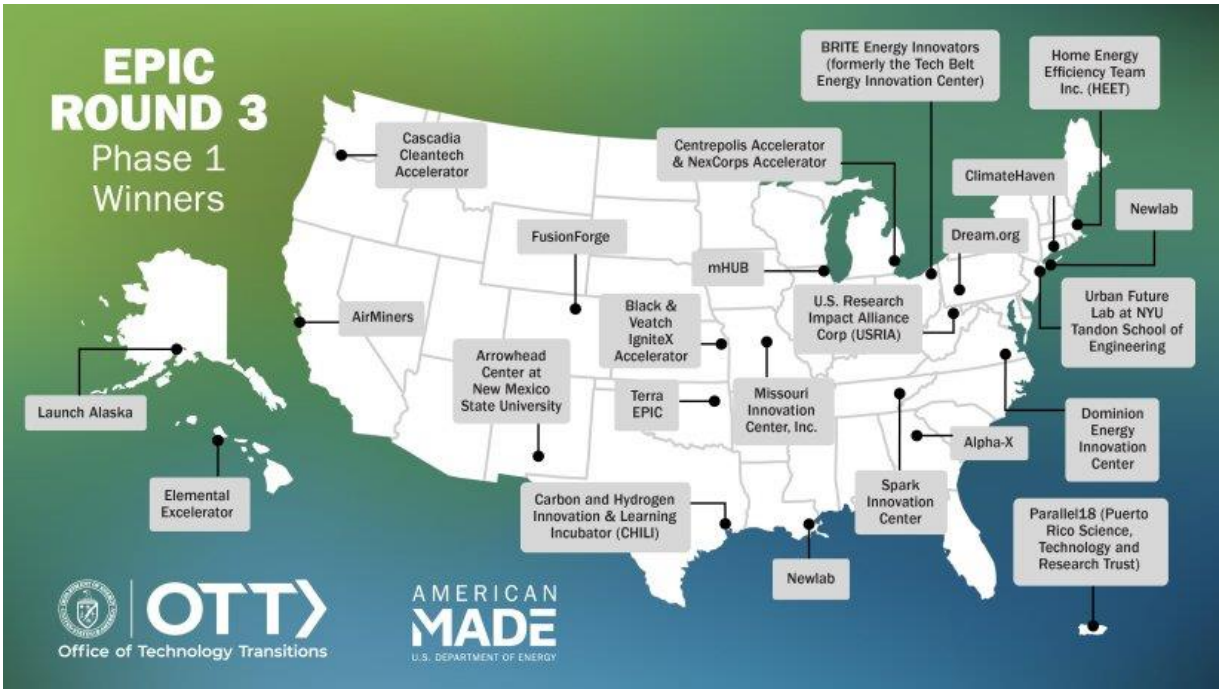

Figure 7: EPIC Round 3 Phase 1 Prize Competition Winner Locations.

Table 4. Round 3 Phase 1 Awardees

Awardee	Location	Project Description
AirMiners PBC	San Francisco, CA	Engaging states in the National AirMiners MVP program to support carbon removal startups that impact their communities, helping realize climate action goals.
Alpha-X	Alpharetta, GA	Providing support for energy ecosystem startups to develop hardware and hard-tech specialized programming through 24-module Applied Leadership Program Hardware Accelerator program.
Arrowhead Center at New Mexico State University	Las Cruces, NM	Focused on emerging energy and water technologies through Arrowhead RenewTech Incubator to help solve community and industry challenges.
Black & Veatch: IgniteX Accelerator	Overland Park, KS	Co-developing projects with startups to offer grant funding, investor introductions, fundraising guidance, project development, marketing, and industry support with a focus on later stage technologies.
BRITE Energy Innovators	Warren, OH	Harnessing connection points for underserved startups that have ideated within universities through direct mentorship and access to a robust community of support.
Centrepolis Accelerator and NexCorps Inc.	Southfield, MI	Support for companies developing "dual purpose" critical materials and component for mobility, electrification, and industrial decarbonization technologies.
ClimateHaven	New Haven, CT	Providing business support services to companies in Connecticut, with sector-specific support in the field of sustainable and green chemistry. Prize winnings for this team were made possible by the DOE's Industrial Efficiency and Decarbonization Office.
Dominion Energy Innovation Center	Ashland, VA	Funding a DEIC hyper-scaled 10-week program focused on startups related to or supporting data center energy usage, and trial a pre-accelerator mentoring program.
Dream.org	Pittsburgh, PA	Creating a launchpad program focused on helping disadvantaged entrepreneurs start and run clean energy and green infrastructure companies in the greater Pittsburgh region. Prize winnings for this team were made possible by the DOE's Office of Energy Justice and Equity.
Elemental Excelerator	Honolulu, HI	Partnering with local organizations in the Southeastern USA, Elemental is launching a new suite of Scale Up Services to help energy technology companies navigate the pre-development, project finance, and project development stages of commercialization.
FusionForge	Fort Collins, CO	Offering a national fusion technology entrepreneurship program and cohort community to support teams in business planning, attracting high quality ventures, and securing cooperative agreements. Prize winnings for this team were made in possible in part by the DOE's Office of Science's Fusion Energy Sciences program.
Home Energy Efficiency Team (HEET)	Boston, MA	Establishing a geothermal drilling center of excellence (CoE) in the northeast that would support job training, entrepreneurship and growth in the geothermal workspace. Prize winnings for this team were made possible by the DOE's Geothermal Technologies Office.
Launch Alaska	Anchorage, AK	Developing 'Industry Innovation Challenges' as part of Launch Alaska's existing Tech Deployment Track, in which startups will compete to solve climate challenges faced by specific Alaska communities.
mHUB	Chicago, IL	Establishing a Climate & Energy Pilot Launchpad Program (CEPL) Bootcamp pilot, matching startups with partners to receive support and product development grants that help prepare technology for demonstration.

Table 4. Round 3 Phase 1 Awardees (cont.)

Awardee	Location	Project Description
Missouri Innovation Center	Columbia, MO	Funding the AG-POWERUP (Agricultural Growth Powered by Energy Upstarts) program for energy innovative entrepreneurs that benefit the agricultural sector.
Newlab	Brooklyn, NY	Supporting carbon management or hydrogen startups to develop pilot projects in Louisianna through The Energy Delta Program by developing diagnostic tools, four playbooks, and a pilot concept framework.
Northwest Cleantech Innovation Network	Portland, OR	Supporting startups in the Pacific Northwest through a collaboration formed by VertueLab, the Washington Clean Energy Testbeds, and the CleanTech Alliance.
Parallel18	San Juan, Puerto Rico	Launching Project Switch, an energy innovation incubator led by Puerto Rico Science, Technology and Research Trust supporting entrepreneurship support organizations and individuals.
Spark Innovation Center	Knoxville, TN	Creating a Prototyping Initiative at the Spark Innovation Center to help cleantech startups bring their products to market faster.
Texas Innovates: Carbon and Hydrogen Innovation and Learning Incubator	Houston, TX	Driving innovative startups to the DOE recognized HyVelocity program and other regional decarbonization efforts.
Tribuquent Corporation: Terra EPIC	Tulsa, OK	Helping startups tackle technical and market challenges while building strong regional partnerships, including with Tribal Nations, providing access to research and development, expert mentorship, research facilities, and more.
U.S. Research Impact Alliance Corp	Morgantown, WV	Developing an entrepreneur in residence (EIR) program to support inventors in reviewing National Lab & university IP, creating go-to-market strategies, partnering with SME networks, and planning for licensing and commercialization.
Urban Future Lab at NYU Tandon and SecondMuse	Brooklyn, NY	The GROW-TOGETHER accelerator merges the innovative forces of hardtech clean energy startups with the manufacturing industry in the Northeast US by mandating joint applications from startups and manufacturers, ensuring both parties collaborate from the outset.

Phase 2

In Phase 2, winners of Phase 1 will test their program models and create sustainable continuation plans. Phase 2 closes in September 2024 at which time winners will have the chance to enter negotiations for a 3 year, $1M cooperative agreement to form Phase 3. Additionally, Phase 2 will include two pitch competitions in which all past and present EPIC incubators can nominate energy startups for a chance to win over $100,000.

In alignment with the DOE mission space, OTT designed EPIC Round 3 such that incubator winners of Phase 2 are required to demonstrate their ability to advance energy and related hardware technologies in collaboration with state, regional, and/or local entities. The first two phases are prize competitions that effectively serve as the competitive solicitation process for the final third phase, a cooperative agreement. This approach encourages bold and impactful ideas while providing the long-term funding needed to scale those ideas and their supporting small business ecosystems. This new multistage EPIC program is structured as shown in Figure 8.

Figure 8: This EPIC Round 3 timeline shows the hybrid approach, a multistage prize competition to cooperative agreement, which leverages the flexibility prize authority offers, while maintaining influence over how the awardees utilize their funding and allows the awardees to scale their programs.

IV. Key Performance Measures and Select Outcomes

OTT identified the following performance and outcome measures for companies supported by EPIC-funded incubators—total revenue, follow-on funding, jobs created, and diversity, equity, inclusion, and accessibility teams supported by incubators, pilot and demonstration projects developed, sales relationships, licensing agreements, and National Lab and other partnership agreements.[26] OTT monitors and tracks these metrics throughout the 3-year cooperative agreement contract period for the 10 incubators funded in FY 2021.

All 10 FY 2021 FOA projects began on October 1, 2021. The awardees have recently completed their second of a three-year project and budget period. Throughout the project, OTT has collected outcome data, tracked milestones, and conferred with awardees to assess progress and track impact. Furthermore, the end of each budget period has a milestone-based go/no go decision point, in which OTT decides whether to continue each project.

These metric-driven decision points are outlined within the 3-year Statement of Project Objectives (SOPO) and were negotiated between OTT and individual awardees. Table 3 summarizes the collective SOPO performance and outcome metrics that the 10 FY 2021 EPIC FOA awardees expected to achieve throughout the course of their 3-year funding period, as well as their progress as reported in the second

[26] These include but are not limited to Cooperative Research and Development Agreements (CRADAs), Joint Development Agreements, among others.

year of their award. In addition, 21 of 54 (39 percent) Round 1 and 2 incubators are located in disadvantaged communities.[27]

Table 3: FY 2021 EPIC FOA—Year Two Actual and Year Three Expected Performance and Outcome Metrics

Year Three Expected	Year Two Actual	Metric
160	**149**	Organizations participating in innovation clusters
180	**230**	Companies completing incubator programming
64	**165**	DEIA-relevant companies completing incubator programming
64	**124**	Companies achieving commercial outcomes[28]
17	**61**	Participant companies leveraging DOE-funded technology

Table 4: FY 2021 EPIC FOA—Cohort Member Company Reported Total Annual Revenue, Total Follow-On Funding, and Total Jobs

Total Annual Revenue	Total Follow-on Funding (Private & Public)	Total Jobs
$33M	$138M	1,800

In addition, the 10 incubators are addressing the following six activities, and it is anticipated that these will have a significant impact on broader innovation ecosystems:

1. Activation of partnerships with the National Labs;
2. Advancement of innovation for a diverse range of technologies;
3. Cross-cutting collaboration throughout DOE;
4. Development of innovative program offerings;
5. Facilitation of inter-regional collaborations; and
6. Inclusion of measures to advance diversity, equity, and inclusion.

1. Activation of partnerships with the National Labs

In service of OTT's mission to commercialize promising energy technologies, several of the EPIC awardees are partnering with DOE National Laboratories. These partnership activities include forming companies, facilitating contractual agreements such as collaborative research and development agreements (CRADAs), and helping companies access DOE National Laboratory services. In total, nine DOE National Laboratories are partnering on six EPIC projects (Table 5).

[27] As defined by https://energyjustice.egs.anl.gov/.

[28] Defined as increased revenue or new pilots, sales relationships, licensing agreements, Cooperative Research and Development Agreements, Joint Development Agreements, and other partnership agreements secured.

Table 5: DOE National Laboratories Partnering on Six EPIC Projects

EPIC Project Awardee	National Lab Partner(s)
Evergreen Climate Solutions	Argonne National Laboratory Oak Ridge National Laboratory
Colorado State University	Idaho National Laboratory National Renewable Energy Lab
E4 Carolinas	Savannah River National Laboratory
New Mexico State University	Los Alamos National Laboratory Sandia National Laboratory
USRIA	National Energy Technology Laboratory
VertueLab	Pacific Northwest National Laboratory

2. Advancement of innovation for a diverse range of technologies

EPIC aims to support incubators that further commercialization of a wide range of energy and related hardware technology. The following four incubator awardees focused their programs on supporting entrepreneurs and companies developing specific clean energy hardware technologies.

- Syracuse University is focusing on building technologies.
- New Energy Nexus New York is focusing on energy storage technologies.
- USRIA is focusing on carbon, hydrogen, or water technologies.
- Launch Alaska is focusing on vehicles technologies.

3. Cross-cutting collaboration throughout DOE

OTT successfully pursued a partnership strategy with DOE program offices to expand the impact of Congress' appropriation by creating pipelines and support for office focus areas. Three program offices—EERE BTO, AEO, and OE—provided additional funds ($0.7M in total) and support to three EPIC FOA awardees.

- EERE BTO provided funding and project management support to EPIC awardee Syracuse University because of their mutual emphasis on advanced building technologies.
- AEO provided funding and project management support to EPIC awardee Launch Alaska because of its focus on leveraging harsh Arctic conditions to harden emerging energy technologies, which is well-aligned with AEO's goals.
- OE provided funding support to New Energy Nexus New York. This program focuses on growth-stage energy storage companies, which aligns with DOE's Energy Storage Grand Challenge.

4. Development of innovative program offerings

EPIC helped spark the development of program offerings. For example:

- LACI proposed an innovative model to support its cohort of entrepreneurs by offering mini prize competitions and connecting winners with partner entities and locations throughout the region to pilot their work.
- NMSU and VertueLab are developing pipeline models with the goal of supporting and

preparing startups for their modular program offerings, including general business acceleration, application preparation to DOE focused program and funding solicitations, and testing and pilot development.

- Launch Alaska incorporates educational demonstration events to show electric vehicle technology applications in extreme environments as well as build local community engagement.
- CSU's REACH program partners with universities and colleges across the broader Rockies/Plains region, which helps them source entrepreneurs, tech, and expert mentors and advisors.

5. Facilitation of interregional collaborations

EPIC is working with regional communities to grow their innovation networks.

- Regional collaboration with state and local entities—both public and private—is key to building the EPIC regional clusters and enabling entrepreneurs and companies to succeed. All the awardees applied to EPIC with partners identified, and they will continue to grow their networks of support throughout their projects' life cycles.
- EPIC awardees are collaborating with each other. OTT facilitates a meeting at least once a year to share best practices and lessons learned.

6. Inclusion of measures to advance diversity, equity, inclusion, and accessibility (DEIA)

All 10 FOA awardees included measures to advance DEIA and support disadvantaged communities, with many stating that DEIA was a core value of their program. For example, awardees added DEIA training to their startup curriculum, and integrate DEIA activities in their Go/No Go milestones.

EPIC Success Stories

This section describes four success stories that demonstrate the EPIC program's outcomes and broad impacts supporting OTT and DOE missions. The success stories showcase the significant impacts the EPIC Program is having on innovation ecosystems across the Nation, as well as on job creation, workforce, and commercialization.

KLAW Industries – Developing Pantheon™, a Carbon-Negative Replacement for Cement

KLAW Industries, founded in 2019 by Jacob Kumpon and Jack Lamuraglia, developed a raw material called Pantheon™, a carbon-negative replacement for cement in concrete made from waste glass diverted from landfills. They started the company as sophomores in college and have since graduated to work full-time on the business in New York. In July 2023, KLAW Industries won first place at OTT's EPIC Prize pitch competition, taking home $100,000 to help them purchase a new truck and trailer for operations. KLAW was nominated for the EPIC pitch competition by the Koffman Southern Tier Incubator.

"The EPIC Prize Competition allowed every team to present to a room of potential funders, partners, and end customers, so even without the prize funding, it was an incredible opportunity that has already pushed our company further. Listening to the other team's pitches, we gained valuable knowledge about the adversities they faced and their creative solutions to overcoming many of the challenges we face today," said KLAW Co-founder and Chief Operating Officer, Jacob Kumpon.

KLAW has since completed over 60 pilot projects and sold close to 50 tons of their Pantheon™ material as a low-carbon concrete replacement, raising over $1.36M in non-dilutive funding.

Read more about KLAW's involvement with DOE and its growing success here: www.energy.gov/technologytransitions/articles/klaw-industries-developing-pantheontm-carbon-negative-replacement.

Heartland Climate Tech Partnership Builds Midwest Climate Ecosystem

Evergreen Climate Innovations (Evergreen) has been supporting climate innovation through catalytic capital for early-stage startups in the Midwest for over a decade. In 2021, they were awarded nearly $1M from the EPIC Round 1 FOA. Evergreen teamed up with Centrepolis Accelerator at Lawrence Technological University, mHUB, and Spark Innovation Center to launch the Heartland Climate Tech Partnership. Through this funding, the Partnership launched three accelerators focused on the commercialization of climate tech and clean energy businesses across the Greater Midwest Region which has since supported over 48 hard-tech startups. The Heartland Partnership has enabled each of these accelerators and their parent organizations to benefit from collaborations, deal flow, and extensive ecosystem support.

"OTT funding really helped these three accelerators get off the ground. Equally importantly, though, it has allowed them to go to the market themselves and secure additional dollars. For instance, we have had companies supported by Centrepolis that Evergreen has then invested in (e.g., MAREL, Enspired Solutions) or startups that won one of our Innovator Awards that subsequently went through mHUB's Accelerator program (e.g., Kazadi Enterprises, Aeternal Upcycling)," said Ian Adams, Managing Director of Evergreen Climate Innovations.

In 2022, Evergreen was selected an EPIC Round 2 Prize Semifinalist and OTT awarded them an additional $50,000 to build out a structured sales support system for diverse founders across their portfolio, tackling the absence of training and resources accessible to energy hard-tech founders. The funding also provided Evergreen the ability to hire a sales consultant to collaborate with their portfolio companies and expanded the offering to companies in the Heartland Climate Tech Partnership.

Learn more about Evergreen's growing impact here: www.energy.gov/technologytransitions/articles/heartland-climate-tech-partnership-builds-midwest-climate-ecosystem.

The Clean Fight Scales Up Storage Technologies in New York

The Clean Fight (TCF) is a nonprofit focused on running high impact programs for growth-stage companies to accelerate the adoption of promising climate tech solutions and speed up clean energy transition in New York state. In 2021, they were awarded nearly $1M through the EPIC Round 1 FOA. In collaboration with the New York Battery and Energy Storage Technology Consortium (NY-BEST) and Binghamton University, TCF used this funding to launch a new program focused on energy storage and to select and accelerate an inaugural cohort of ten startups poised to scale in New York. The program focuses on shortening sales cycles, building manufacturing capacity, and providing guidance navigating the New York market from utilities and industry experts.

Prior to the EPIC funding award, TCF focused on the buildings sector while planning to expand into other programs, such as energy storage. "In terms of energy storage alone, New York state has one of the world's most ambitious goals, aiming for 6 Gigawatts of installed energy storage by 2030 to achieve 100% zero emissions electricity by 2040," said Managing Director, Kate Frucher. The EPIC award funding has allowed TCF to establish their new energy storage program and test which elements of the existing program were successful and what needs to be built out specifically for storage.

TCF focuses on connecting the growth stage startup companies in their cohort with leading customers in the market. "We aim to collapse the sales cycle through a six-month process of very high touch matchmaking — we help them fast-track through initial sales stages much more efficiently and quickly than any team would if they were doing this on their own," said Program Manager for the Energy Storage cohort, Molly Rafelson.

From 2021 to 2023, TCF secured $580M in follow-on capital across the energy and building decarbonization cohorts to support 28 companies. Of which, 10 had a specific focus on the energy storage industry. Of TCF's portfolio companies, 90 percent have established or grown their workforce in New York state, and 90 percent of the most recent cohort companies are led by C-Suite executives that identify with a diverse or under-represented group.

Read more: The Clean Fight Scales Up Storage Technologies in New York | Department of Energy

Arrowhead Center at New Mexico State University

Arrowhead Center at New Mexico State University demonstrated a strong commitment to diversity, equity, inclusion, and accessibility through its EPIC-funded initiative, the New Mexico Clean Energy Resilience and Growth (NM CERG) cluster. In 2021, they were awarded $1M through the EPIC Round 1 FOA. Operating successfully for over two years, NM CERG provided support to over 40 companies, with a notable emphasis on DEIA relevance, boasting a representation of over 70 percent diverse teams. The cluster's impact extends beyond mere participation, with startups generating 29 additional jobs for the region, and 18 companies securing over $3M in combined public and private funding. Recognizing the unique demographic landscape of New Mexico, a majority-minority state with a significant rural population and veterans, Arrowhead Center ensures that inclusivity is a cornerstone in designing and implementing their programs, fostering an environment where underserved entrepreneurs thrive.

Read more: https://www.energy.gov/technologytransitions/articles/arrowhead-center-new-mexico-state-university

V. Conclusions

This report provides an overview of OTT's EPIC program, including progress and implementation, as well as key performance measures through February 2024. OTT is committed to providing comprehensive updates on the EPIC program. OTT plans to continue monitoring and updating its key performance measures and will plan to assess more comprehensively the impact of EPIC-funded incubators in future years, in part to address a Congressional request under the CHIPS and Science Act to evaluate the EPIC program[29], and as the awardees complete their projects through FY 2026.

With the EPIC Round 3 prize competition selections and two startup pitch competitions anticipated in 2024, as well as selections for the DAC Precommercial EPIC prize competition, OTT is enthusiastic about the program's ongoing success. OTT looks forward to connecting with EPIC Round 2 grand prize winners to understand program evolution and remain open to feedback, ensuring that the EPIC model remains adaptive to the needs of energy technology incubators and to allow for continued cross-cutting collaboration throughout DOE.

[29] P.L. 117-167, Section 10713. National clean energy incubator program.