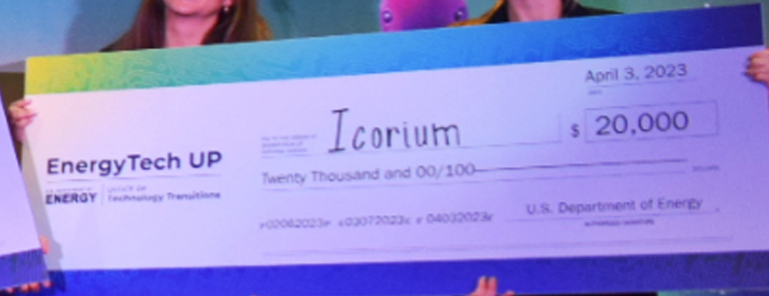


EnergyTech UP



Office of Technology Transitions

AMERICAN
MADE
U.S. DEPARTMENT OF ENERGY



KEEP CARROT WEIRD

Informational Webinar

December 5, 2023
Presented by: National
Renewable Energy Lab

“I really like this program! So many other [similar competitions] are extremely labor and time intensive, and [EnergyTech UP] is a **great introduction to this sector**”

-Student Participant

Webinar Will Begin Shortly

My favorite part of EnergyTech UP was **learning how to frame my research** in the perspective of a business model.”

-Student Participant

“I enjoyed learning about other technologies and **ideas from other teams.**”

-Student Participant

Housekeeping

- Two Options for Audio (select audio mode):
 1. Listen through your computer:
Click the 'up arrow' next to the "mute" button in the bottom left corner.
Under "Select a Speaker," click "Same as System."
 2. Listen by telephone:
Click the 'up arrow' next to the "mute" button in the bottom left corner.
Click "Switch to Phone Audio."
- Panelists – reminder to mute your audio device when not presenting.
- To Ask a Question:
 - Select the 'Chat' button at the bottom of your screen and type in your question.
- Having Trouble with the Webinar?
 - A video/audio recording of this webinar and the slide deck will be made available.

AGENDA

1. Introduction to EnergyTech UP
2. Welcome from the Office of Technology Transitions
3. About the Student Track
4. Bonus Prizes Available
5. About the Regional Pitch Events
6. Perspectives from a Regional Convener & Alumni
7. About the Faculty Track
8. Spreading the Word
9. Closing Remarks, Questions, & Answers

EnergyTech University Prize

Tasking student teams to craft and present a business plan using National Laboratory-developed or other high-potential energy technologies.

Tasking faculty to incorporate or expand energy technology commercialization and entrepreneurship topics into their institution's educational activities.



Goals of the Program

- Build engagement between colleges, universities, the Department of Energy, national labs, and industry.
- Inspire others on the possibilities for leveraging energy technologies.
- Increase commercialization of energy technologies and help to launch careers.
- Support and improve energy technology education at institutions across the U.S.

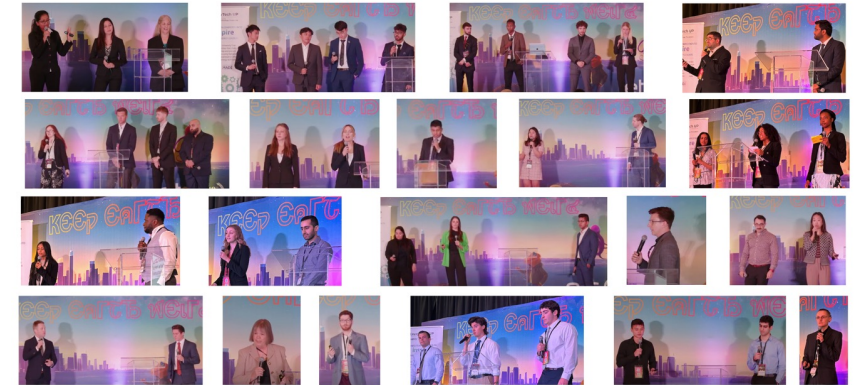


Soy-based
&
Bio-based
resin for
Construction
Applications



Designed So All Can Compete & Succeed

- Seeking ideas from any and all students, faculty, schools, and backgrounds. Winners are chosen based on the strength of the plan, not the resumes of the presenters.
- National focus, with 15 different regional conveners, enable multiple pathways to reach the National event and enable presentations to judges who understand regional challenges.
- Prioritized outreach to schools and individuals who, historically, have not had extensive relationships with the Department of Energy and the energy industry.
- Virtual explore events ensure all can present live to judges without a need for travel expenses.
- Presenters do not need to own or control the IP for the technology around which the business plan is developed and no ownership or IP transfer occurs in the competition.



Low Barrier to Entry

For Students:

- Students can register with just a 200-word summary.
- Students present virtually to judges about 4 weeks later.
- Students do not need to have an established startup.
- Students do not need to control the IP to present.
- Students are evaluated based on the quality of the plan.
- Student finalists win \$3,000 and are invited to the national competition, where more than \$400,000 in prizes are provided.

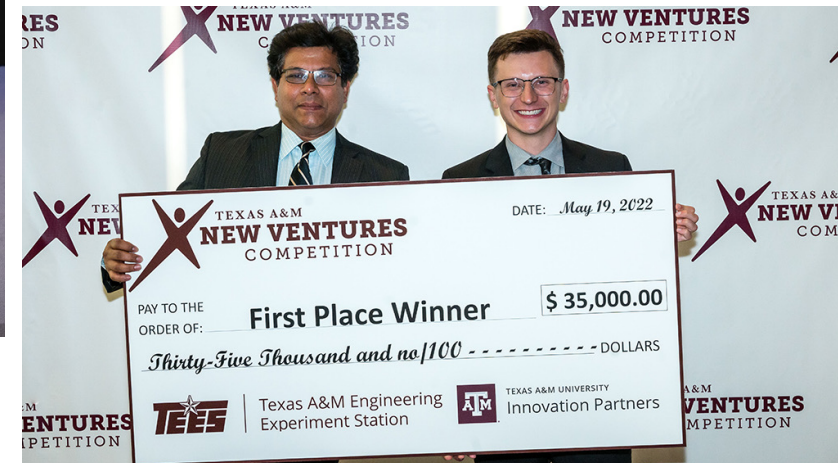
For Faculty:

- Faculty who submit information about themselves and their interests by January 5 are eligible to be selected as one of 10 Faculty Explorers and receive \$4,000 each.
- Any faculty can submit an implementation plan by April 5 to be eligible for a share of \$60,000 in funding.
- No travel and no live presentations are required.

**Students and faculty from any institution,
anywhere in the U.S., are welcome and
encouraged to compete.**

Success Stories from Alumni in the Competition

- Some past competitors found new jobs.
- Some raised more money.
- Some secured IP.
- Some incorporated as a new business.
- Some secured SBIR funding.
- Some were accepted as Fellows to high-profile accelerators.
- Some were accepted into national lab commercialization programs.
- Some won follow-on pitch competitions.
- Some pursued higher education programs.



Welcome!

Edward Rios

Commercialization Executive

U.S. Department of Energy's

Office of Technology Transitions



Office of Technology Transitions

The **Mission of the Office of Technology Transitions (OTT)** is to expand the public impact of the department's research, development, demonstration, and deployment (RDD&D) portfolio to advance the economic, energy and national security interests of the nation. OTT is the front door to U.S. Department of Energy's (DOE) products, facilities and expertise. The office integrates "market pull" into its planning to ensure the greatest return on investment from DOE's RDD&D activities to the taxpayer.



INNOVATION **X** LAB[®]

Technology Commercialization Internship |  | **OTT** Office of Technology Transitions

Technology Commercialization Fund |  | **OTT** Office of Technology Transitions

EnergyTech UP |  | **OTT** Office of Technology Transitions

AMERICAN
MADE
U.S. DEPARTMENT OF ENERGY



ENERGY **I-CORPS**



OTT Office of Technology Transitions

Adoption Readiness Levels (ARL): A Complement to TRL

Practices to Accelerate the Commercialization of Technologies (PACT)

Office of Technology Transitions



Pathways To Commercial Liftoff



DOE Emerging
Tech Studio

powered by FEDETECH



Student Track Details

**Up to 225 teams invited to present live
across 15 regional Explore Events**



Student Track



- Registration closes on February 1, 2024.
- Regional Explore Events occur on February 27, 28, and 29, 2024.
- Regional and Bonus Prize Finalists each receive \$3,000
- National Pitch Event occurs April 15, 2024.
- At the National Event, prizes are \$50,000 for 1st place, \$20,000 for 2nd Place, \$10,000 for 3rd place, and \$22,000 for each of 11 technology Bonus Prizes, the undergraduate-only Bonus Prize, and the National Lab IP Licensing Bonus Prize.

2024 Explore Events

- ~15 regions across the U.S.
- ~12-15 teams per region.
- ~3-5 industry judges per region.
- 3 Explore Event dates:
 - East – February 27 from ~1–5 p.m. ET
 - Central – February 28 from ~1–5 p.m. CT
 - West – February 29 from ~1–5 p.m. PT

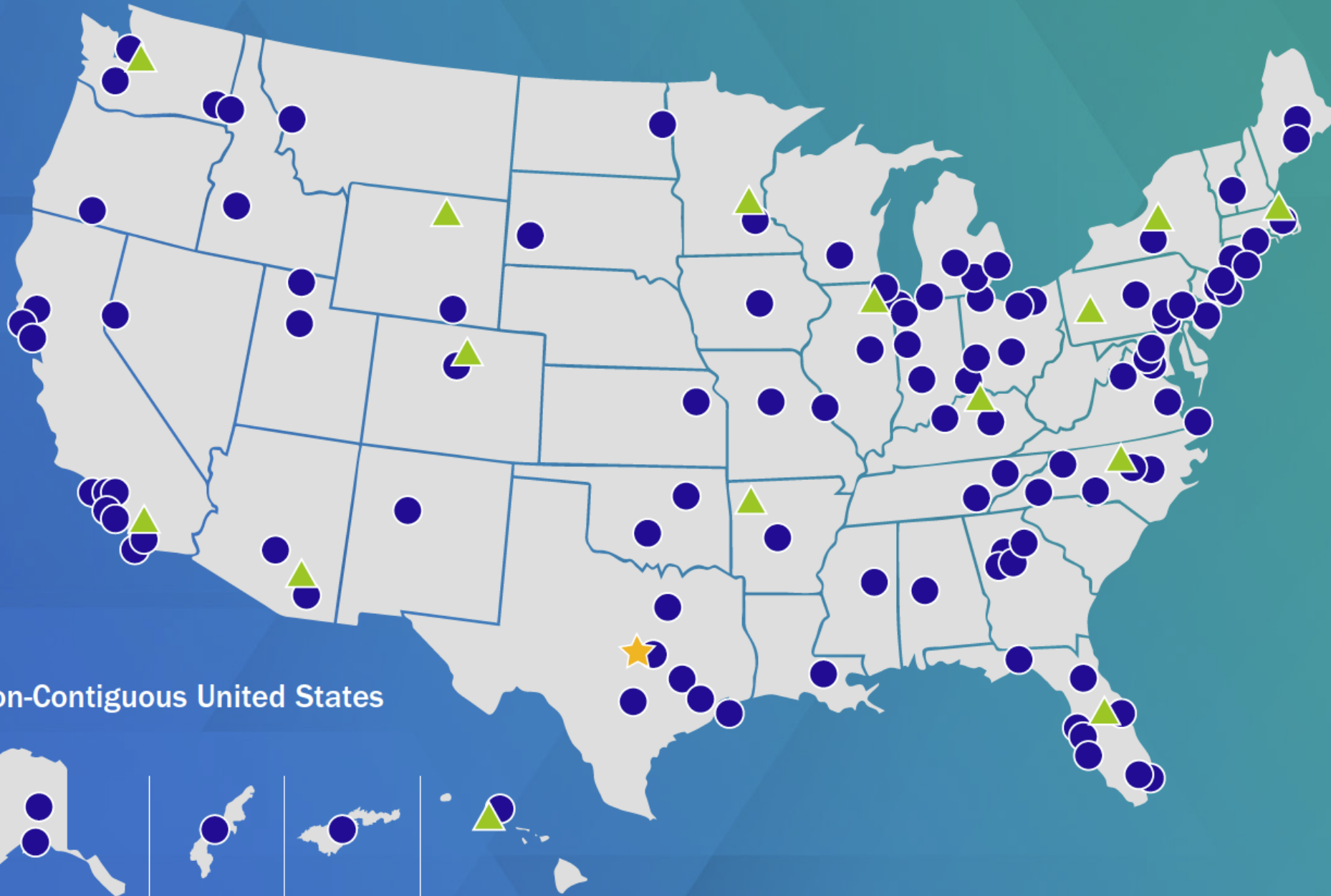
Structure of Regional Explore Events

- 3-4 hours in duration, beginning between 1 p.m. and 2 p.m. in ET, CT, and PT respectively for each region. Exact time to be determined based on applications.
- 4-5 regional Explore Events will occur simultaneously, breakout rooms for each Region
 - Each team will be provided 5 minutes to pitch with 3 minutes of Q&A
 - Only students may present.
 - Minimum of 1 student presenting live, others welcome if desired.
 - Speaker and/or Discussion while Judges Deliberate
 - Students complete feedback form
 - Announce Winners
- Expect to share your screen when presenting.
- Highly encourage attending the entire event, prior feedback indicated students found seeing the other teams present to be very valuable.

EnergyTech University Prize 2023

EnergyTech UP

U.S. DEPARTMENT OF ENERGY | OFFICE OF Technology Transitions



184 teams

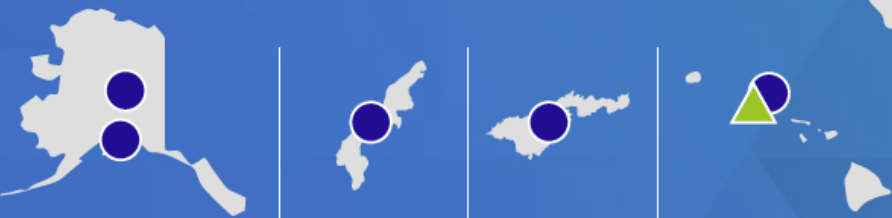
124 schools

**44 states + D.C. + 2
U.S. territories**

**15 regional
convener partners**

- competing schools
- ▲ regional convener partners
- ★ national pitch event location

Non-Contiguous United States



About the Regional Explore Events



Expectations

- 600+ students
- 180 - 225 teams
 - From 125+ different schools located in (hopefully) all states, territories, and D.C.
- Associate, undergraduate, graduate, and PhD students participating
- Students participating as part of a class, a club, independently, and/or part of a capstone project.

Students Benefit from Pitching, Watching, and Networking



Dozens of Industry Judges Providing Feedback & Connections!



How Explore Phase Regional Finalists are Determined

- Regional pitches – virtual.
 - 5-minute pitches, 3-minute Q&A.
 - Initial idea and opportunity.
 - 1 regional finalist from each region.
 - 1 all-undergraduate finalist from each region.
 - 1 National Lab IP Licensing finalist from each region.
- Finalists win \$3,000 each and are invited to the Refine and Pitch Phases of the competition.

Table 3: Scoring Scale

1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

1. Technology Identification	
Suggested Content: A. What is the energy technology to be leveraged?	Evaluation Statement: The team deeply understands their technology of choice and explained it clearly.
2. Market Assessment	
Suggested Content: A. Who will buy the product or service and why do they need it? B. Who is currently serving this market and how? C. What unmet market need will this technology help to fill?	Evaluation Statement: The team understands the relevant market, potential competitors, and customers for their identified technology, including what pain points this technology might solve for the customer.
3. Economic Feasibility Analysis	
Suggested Content: A. What might customers be willing to pay for this product or service? B. How much might it cost the business to produce this product or service?	Evaluation Statement: The team's analysis is credible and has identified what the customer is willing to pay for the product, thoroughly justifying their product/service's cost of production and understanding its implication on their profit margins.
4. Potential Impact	
Suggested Content: A. Who will benefit should this business succeed? B. What role will this business play in the energy transition?	Evaluation Statement: The proposed business includes thoughtful and specific activities that will advance equity and inclusion, including for members of disadvantaged communities ⁴ (e.g., those that are affected by persistent poverty, job loss due to the energy transition, etc.), and the team has outlined a realistic vision for the role they see this business playing in the energy transition.
5. Overall Business Plan	
Suggested Content: A. How is success defined? B. What people and resources are needed to put this plan into action?	Evaluation Statement: The team's definition of success is reasonable, and the business, if implemented as proposed, would be likely to achieve the specified metrics of success, including personnel, equipment or other assets, and partnerships necessary.

How Explore Phase Bonus Prize Finalists are Determined

Office of Technology Transitions (OTT) – National Lab IP Licensing Bonus Prize	
Challenge Statement:	Evaluation Statement:
<ul style="list-style-type: none"> Leverage the OTT’s LPS to identify a national lab-developed technology available for license and propose an innovative business model to commercialize the technology. 	<ul style="list-style-type: none"> The entry demonstrates a clear understanding of the technology and market potential of a technology listed on the OTT’s Lab Partnering Service and presents an innovative business model to significantly increase its adoption.

- Program office staff watch recorded regional pitches.
- Up to 1 finalist identified for each Bonus Prize.
- Finalists win \$3,000 each and are invited to the Refine and Pitch Phases of the competition.

Building Technologies Office (BTO) Technology Bonus Prize	
Challenge Statement:	Evaluation Statement:
<ul style="list-style-type: none"> Develop innovative business model(s) or commercialization plan(s) to increase the adoption of electrification solutions for commercial or residential HVAC technologies that increase market adoption and address industry challenges. 	<ul style="list-style-type: none"> The entry demonstrates a clear understanding of the technology and market potential for electrification solutions for commercial or residential HVAC technologies and presents an innovative business model(s) or commercialization plan(s) to increase market adoption and address industry challenges. The entry can be multifaceted and propose commercial business plan(s) or challenge.

te-Only Team Bonus Prize
Evaluation Statement:
<ul style="list-style-type: none"> The eligible team presents an entry that demonstrates a clear understanding of the technology and market potential and presents an innovative business model to

Solar Energy Technologies Office (SETO) Technology Bonus Prize		Challenge Statement	Evaluation Statement
Challenge Statement:	Evaluation Statement:		
<ul style="list-style-type: none"> Develop innovative business models to improve the performance, affordability, reliability, and value of solar technologies on the U.S. grid and to tackle emerging challenges in the solar industry. 	<ul style="list-style-type: none"> The entry demonstrates a clear understanding of the technology and market potential for optimizing performance and/or reducing the costs associated with components, installation, and operation of solar energy systems and presents an innovative business model to significantly increase its adoption. 	Office of Nuclear Energy (NE) Technology Bonus Prize Challenge Statement: <ul style="list-style-type: none"> Develop innovative business models to accelerate the development and deployment of advanced technologies supporting advanced reactors and fuel cycle technologies. Evaluation Statement: <ul style="list-style-type: none"> The entry demonstrates an understanding of the technology and market potential of the chosen technology and the path to improved technology and/or enhanced adoption is well-articulated and reasonable. 	
Hydrogen Fuel Technologies Office (HFTO) Technology Bonus Prize	Evaluation Statement:		
<ul style="list-style-type: none"> Develop innovative business models to identify mechanisms for commercially viable hydrogen technologies to achieve market fitoff, supporting domestic competitiveness, job creation, and achievement of climate goals. 	<ul style="list-style-type: none"> The entry demonstrates a clear understanding of the technology and market potential for hydrogen technologies and presents an innovative business model to significantly increase its adoption. 	Office of Electricity (OE) – Grid-Enhancing Technologies (GETs) Technology Bonus Prize Challenge Statement: <ul style="list-style-type: none"> Develop innovative business models to increase the adaption of GETs to benefit the U.S. power grid. Evaluation Statement: <ul style="list-style-type: none"> The presentation emphasizes a clear understanding of GETs and the market potential for GETs to be implemented by various utility entities in a way that decreases congestion and reduces electricity costs. 	
Office of Manufacturing & Energy Supply Chains (MESCC) Technology Bonus Prize	Evaluation Statement:		
<ul style="list-style-type: none"> Develop innovative and practical business models for deployment of smart manufacturing solutions at small and medium-sized manufacturers – recognizing the need for retrofit projects that accommodate the inherent implementation challenges of these solutions with uncertain payback periods and financing obstacles. 	<ul style="list-style-type: none"> The entry emphasizes a clear understanding of, and plans to address, both the immense opportunities and challenges associated with SMART manufacturing specifically at small and medium-sized manufacturers.. 	Office of Electricity (OE) - Large Power Transformers (LPTs) Technology Bonus Prize Challenge Statement: <ul style="list-style-type: none"> Develop innovative business models to stimulate the adoption of flexible LPTs in the electric sector. Evaluation Statement: <ul style="list-style-type: none"> The presentation emphasizes a clear understanding of the technology and market potential for flexible LPTs and presents an innovative business model to significantly increase their adoption. 	
Water Power Technologies Office (WPTO) Technology Bonus Prize	Evaluation Statement:		
<ul style="list-style-type: none"> Develop innovative business models for a selected novel hydropower or marine technology of your choice that tackles emerging challenges in the water power industry and aims at 	<ul style="list-style-type: none"> The entry demonstrates an understanding of the technology and market potential of the chosen technology, and the path to improving the technology and/or increasing its adoption is well-articulated 	Office of Electricity (OE) - Long-Duration Energy Storage (LDES) Technology Bonus Prize Challenge Statement: <ul style="list-style-type: none"> Develop innovative business models to propose an LDES technology solution, explain the technology’s use case, and address market challenges to enable greater adoption of LDES on the U.S. power system. Innovative energy storage use cases are encouraged. Evaluation Statement: <ul style="list-style-type: none"> The presentation outlines a clear understanding of LDES technologies and the LDES market space, explores barriers to greater LDES adoption, and proposes an innovative business plan to accelerate LDES deployment for a defined, innovative use case. 	

2024 Regional Conveners

Regional Convener Name	Regional Explore Event
Rice Alliance for Technology and Entrepreneurship	Central – Feb. 28
Evergreen Climate Innovations	
Grid Catalyst	
The University of Kentucky Center for Applied Energy Research and Circular Venture Lab	
Russell Center for Entrepreneurship (RICE)	
The Florida High Tech Corridor	East – Feb. 27
Wilton E. Scott Institute for Energy Innovation at Carnegie Mellon University	
Cleantech Open Northeast, NECEC	
Research Triangle Cleantech Cluster	
New York Tri-State (NY, NJ, CT)	
Cleantech San Diego and UC San Diego	West – Feb. 29
The University of Arizona Center for Innovation	
University of Washington Clean Energy Institute	
Colorado School of Mines McNeil Center for Entrepreneurship & Innovation and WY Ranch	
National Renewable Energy Lab, Alaska Campus	

Rice Alliance for Technology and Entrepreneurship

CATHERINE SANTAMARIA | CSANTAMARIA@RICE.EDU

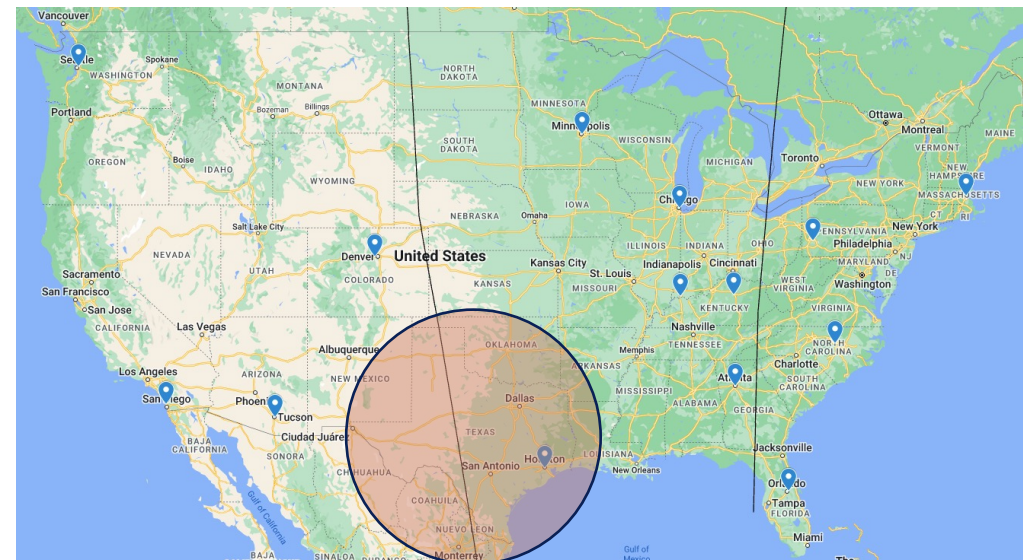
Summary of Organization

The Rice Alliance for Technology and Entrepreneurship (Rice Alliance) is Rice University's nationally-recognized initiative devoted to the support of technology commercialization, entrepreneurship education, and the launch of technology companies. Our mission is to support the creation and success of startups and the commercialization of new technologies in the Houston community and beyond.

Home of the Rice Business Plan Competition!



The picture can't be displayed.



Reason for Being a Regional Convener/Why Excited

The Rice Alliance is pleased to host the Texas/Southwest regional competition for the 2nd year! We love to see so many students interested in clean energy technologies.


Evergreen Climate Innovations

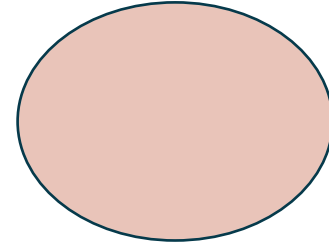
ALLIE GROSS | ALLIE@EVERGREENINNO.ORG


Summary of Organization

Evergreen Climate Innovations is a **Chicago-based nonprofit** that delivers positive climate impact and inclusive opportunity by helping high-potential climate tech startups from the Greater Midwest succeed.

We provide catalytic capital to climate entrepreneurs while cultivating an ecosystem of investors, corporate partners, donors, and collaborators.

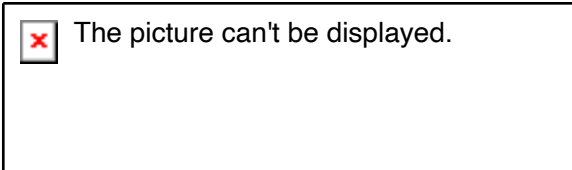
 The picture can't be displayed.



 The picture can't be displayed.

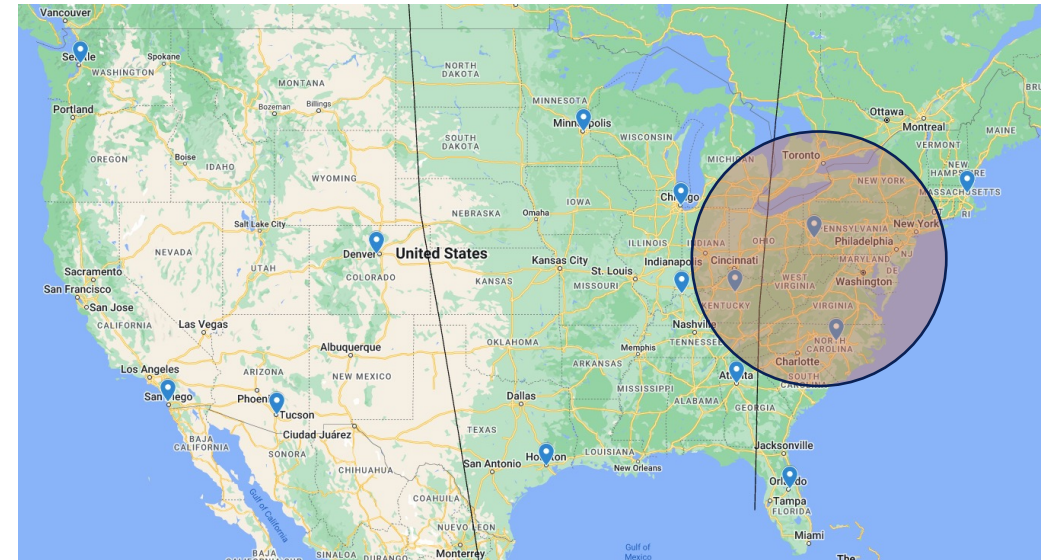
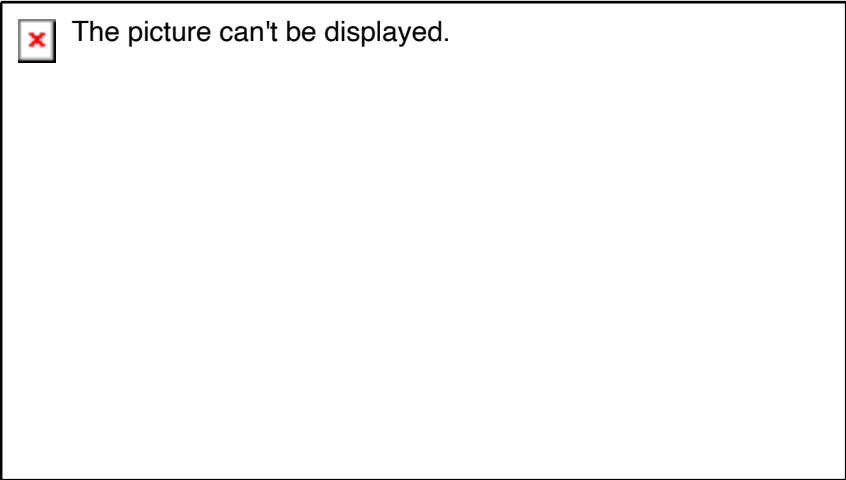
Evergreen is excited to be a regional convener for the **third year in a row!** It is energizing to support entrepreneurial students interested in climate tech and we love this opportunity to engage with universities across our region.

It's incredible to see what the participants of this program have gone on to accomplish!



NINA AXELSON | NINA@GRIDCATALYST.ORG

Grid Catalyst is a clean energy & cleantech accelerator providing pilot opportunities for startups & seeking solutions to northern climate challenges.



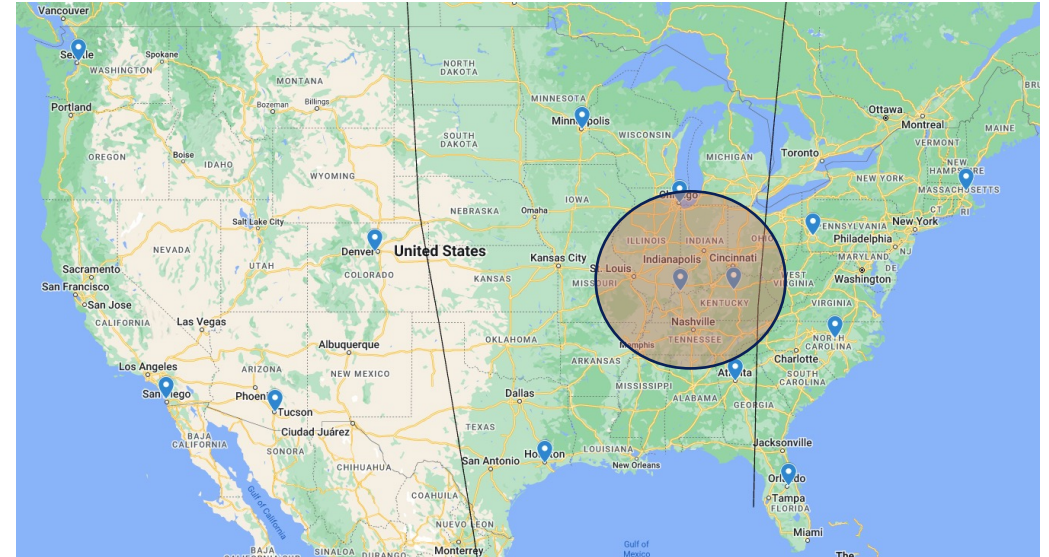
We love the opportunity to meet student innovators and help them explore the startup and business planning process for emerging tech.


University of Kentucky

DAVID MELANSON | DAVID.MELANSON@UKY.EDU

Summary of Organization

Since 1977, the University of Kentucky Center for Applied Energy Research (CAER) has served as one of the nation's premier energy research and development institutes, collaborating with companies and government agencies to help maximize Kentucky's – and the nation's – energy resources.



 The picture can't be displayed.

Reason for Being a Regional Convener/Why Excited


Hosting our regional convener is an annual inspiration. We learn from every group that presents at our event and can't wait to engage with outstanding teams again this year.

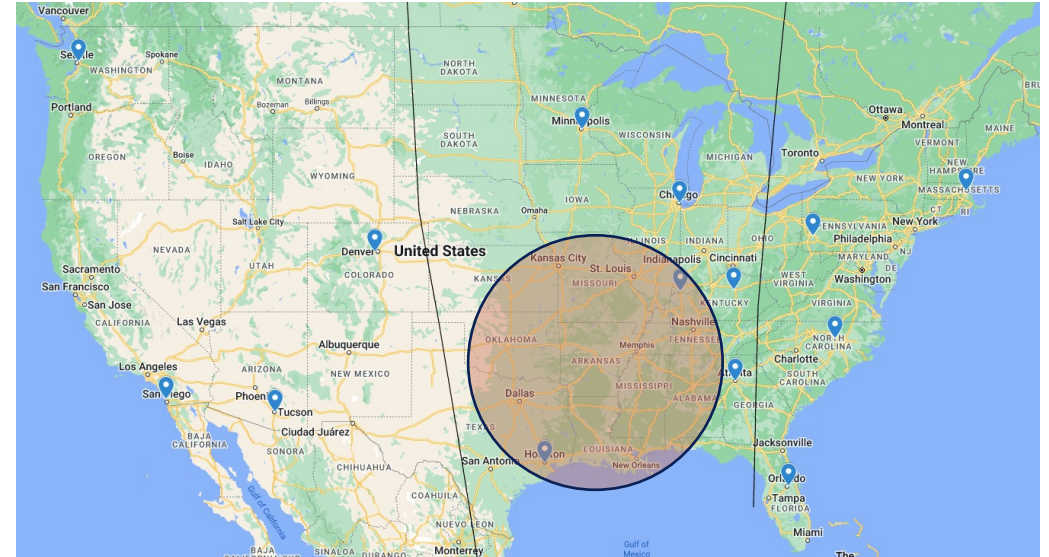
Circular Venture Lab

LOGAN JENKINS | LOGAN@CIRCULARVENTURELAB.ORG | 812.518.0155

We help to create and test new products, systems, and services in the circular economy.

We work with Universities, startup teams, investors, and agencies across the Midwest.

 The picture can't be displayed.



We're pleased to help Midwest teams identify, research, and critically analyze technology concepts offered through the U.S. DOE.

We love to help teams unfamiliar with energy technology embrace the possibilities!

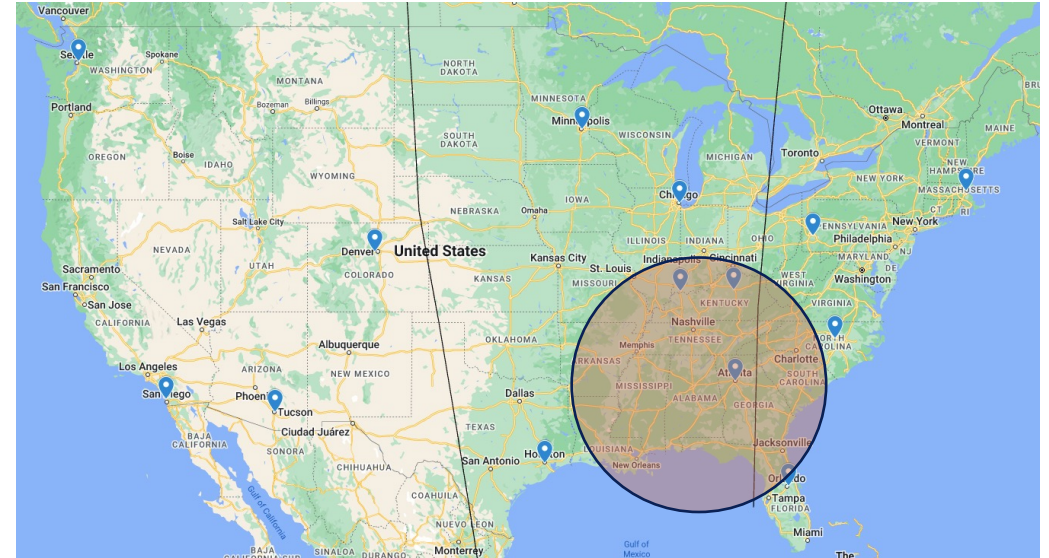
Russell Innovation Center for Entrepreneurship (RICE) Atlanta

PAUL WILSON JR. AND BURUNDA PRINCE

EMAILS: PWILSON@RUSSELLCENTER.ORG, BPRINCE@RUSSELLCENTER.ORG

Summary of Organization

RICE is an economic mobility engine for the community: driving RICE Stakeholder and small business owners to innovate, grow, create jobs, and build wealth. We house over 50,000 square feet of convening, meeting, and innovation space in a LEED Silver Certified building, brought to life by a robust offering of educational, networking, mentoring, and capital resources. Part business generator, innovation lab, and museum, RICE invests in Black RICE Stakeholder, strengthens businesses, and creates community.



Build. Black. Business.

To inspire and empower Black RICE Stakeholder.



Russell
Innovation
Center for
Entrepreneurs



Reason for Being a Regional Convener/Why Excited

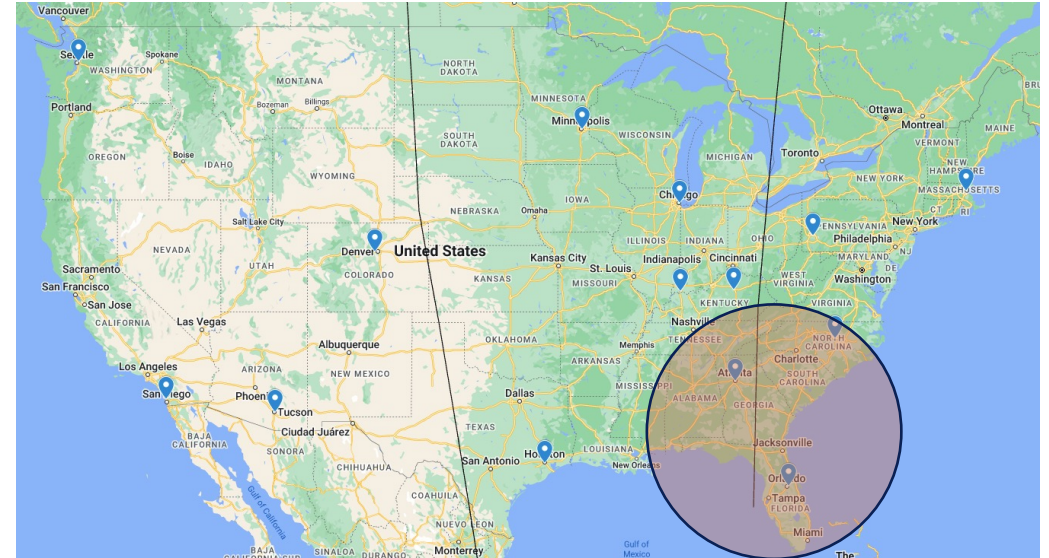
The competition aligns with our mission, and we are excited about the opportunities to network, mentor and learn from student participants!

Florida High Tech Corridor

KELLY SHEA | KELLY.SHEA@FLORIDAHIGHTECH.COM

Summary of Organization

The Florida High Tech Corridor's mission is to converge and catalyze the capacity of high tech, innovation, and bright minds to generate a global ripple effect that advances the lives of people in the communities we serve. The 23-county region that defines The Corridor is anchored by three of the country's largest research institutions: the University of Central Florida (UCF), the University of South Florida (USF) and the University of Florida (UF).



**the
florida
high tech
corridor**

Reason for Being a Regional Convener/Why Excited

For the third year in a row, The Corridor is serving as a regional convener for the EnergyTech University Prize. The competition offers an ideal learning opportunity for students interested in energy industry careers, including entrepreneurial pursuits. The event provides an opportunity for The Corridor to engage broadly with regional innovation stakeholders as judges, speakers and attendees as well as the Department of Energy to expand awareness of the energy industry, innovation and emerging technologies. We are also excited about the new faculty track for broader engagement.

Wilton E. Scott Institute for Energy Innovation at Carnegie Mellon

KATELYN HAAS-CONRAD AND KRISTEN WHITLINGER

EMAILS: KMHAAS@ANDREW.CMU.EDU, KWHITLINGER@CMU.EDU

Summary of Organization

We address the world's most pressing energy challenges by enabling collaborative research, strategic partnerships, policy outreach, entrepreneurship and education.

We support impactful work that strives to optimize resources and reduce environmental consequences associated with energy production and use. We understand that energy and social equity issues are deeply interconnected, and society can benefit with improved energy access.

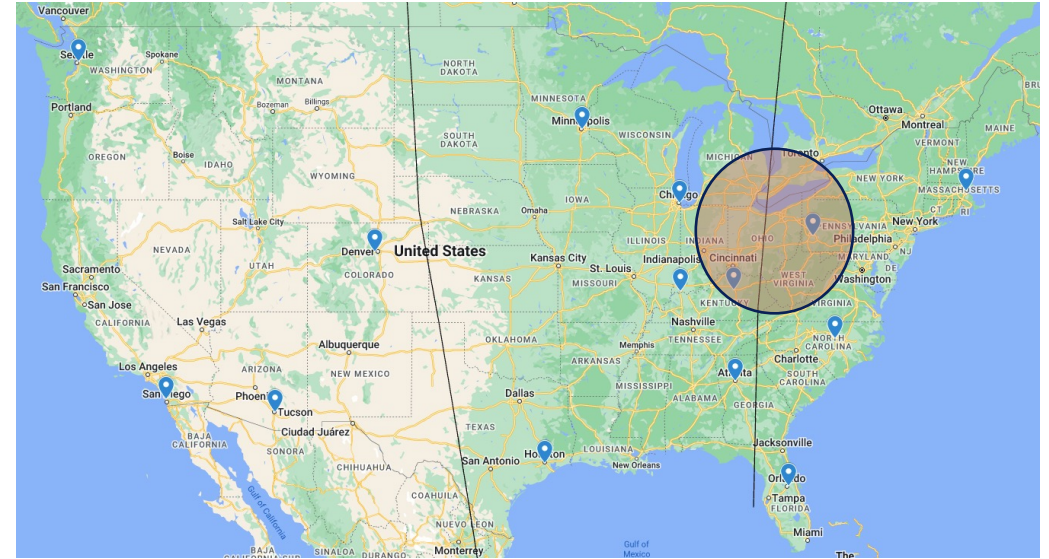
We seek to encourage the development of breakthrough technologies that will accelerate the transition to a sustainable, low-carbon energy future

Carnegie Mellon University

Wilton E. Scott Institute
for Energy Innovation



Pictures from Energy Week 2023!



Reason for Being a Regional Convener/Why Excited

We are interested in being a convener because we believe that commercialization and business thinking in the energy space is important especially for the future of energy professionals. The event aligns with our mission well and we have had only good experiences hosting EnergyTech UP in the past.


Cleantech Open Northeast, NECEC

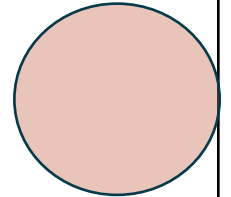
BETH ZONIS | BZONIS@CLEANTECHOPEN.ORG

Summary of Organization

Cleantech Open Northeast is the Northeast region of the Cleantech Open accelerator and is managed by NECEC as the on-the-ground affiliate. Cleantech Open is the world's oldest and largest cleantech accelerator and business plan competition and is dedicated to providing entrepreneurs and technologists with the resources needed to launch a successful cleantech company. Between 2005 and 2023, Cleantech Open Northeast trained more than 600 early-stage clean technology startups. 74% of Cleantech Open Northeast alumni are still in business or have had a successful exit. Cleantech Open Northeast alumni have raised over \$1.47 billion, created over 4,400 clean economy jobs, and generated over \$696 million in revenue. Visit cleantechopen.org.

- Watch our [Cleantech Open Northeast video](#).
- Learn about our [impact](#).
- Read about [Cleantech Open Northeast alumni in the news in 2023](#).

 The picture can't be displayed.



Reason for Being a Regional Convener/Why Excited

The EnergyTech UP has been a wonderful connector for us as an accelerator focusing on early-stage entrepreneurs and ventures. Some of our most successful startup participants have come from EnergyTech UP which is why we are thrilled to continue to be involved.

Research Triangle Cleantech Cluster

DEB WOJCIK AND MIKAYLA CARDONA

EMAILS: DEB@RESEARCHTRIANGLECLEANTECH.ORG, MIKAYLA@RESEARCHTRIANGLECLEANTECH.ORG

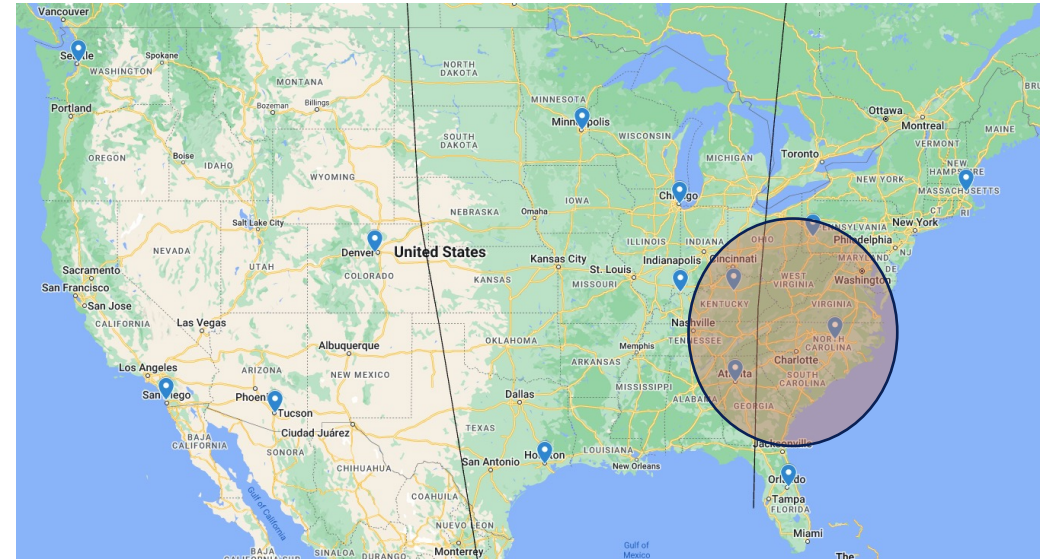
Summary of Organization

We accelerate the growth and leadership of the cleantech economy, leveraging the unique concentration of industry, academic, and government leaders in the Research Triangle to create benefits through innovation, deployment, and talent in the region, North Carolina, and beyond.



RESEARCH TRIANGLE
CLEANTECH CLUSTER™

» Transformation Through Collaboration



Reason for Being a Regional Convener/Why Excited

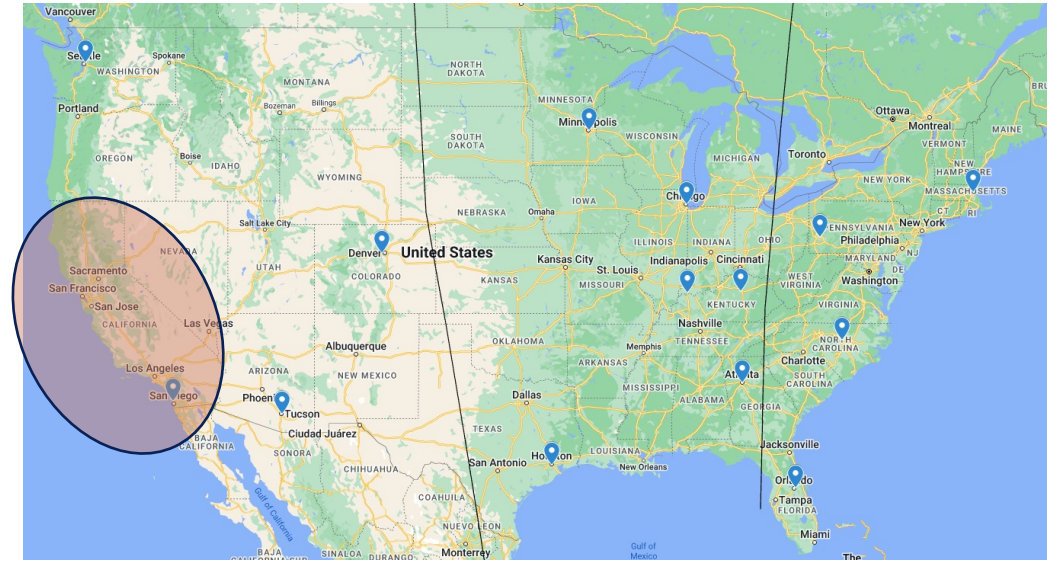
We are interested in being a convener because this competition aligns so well with our vision and mission to accelerate the growth and leadership of the cleantech economy. Our organization brings together leaders in industry, academia, government and entrepreneurs that allows us to provide valuable mentorship to the ETUP student competitors. We have had two successful years as serving as regional conveners for ETUP.

Cleantech San Diego and UC San Diego

ZAC DOBIN | ZACD@CLEANTECHSANDIEGO.ORG

Summary of Organizations

- **Cleantech San Diego** is accelerating clean technology innovation and promoting the equitable deployment of sustainable solutions across the San Diego region for the benefit of the economy, the environment, and all members of the community.
- **UC San Diego** is transforming California and a diverse global society by educating, by generating and disseminating knowledge and creative works, and by engaging in public service.



Reason for Being a Regional Convener/Why Excited

Cleantech San Diego and UC San Diego are committed advancing California's energy innovation industry by supporting energy entrepreneurs and accelerating the commercialization of their emerging energy technologies.



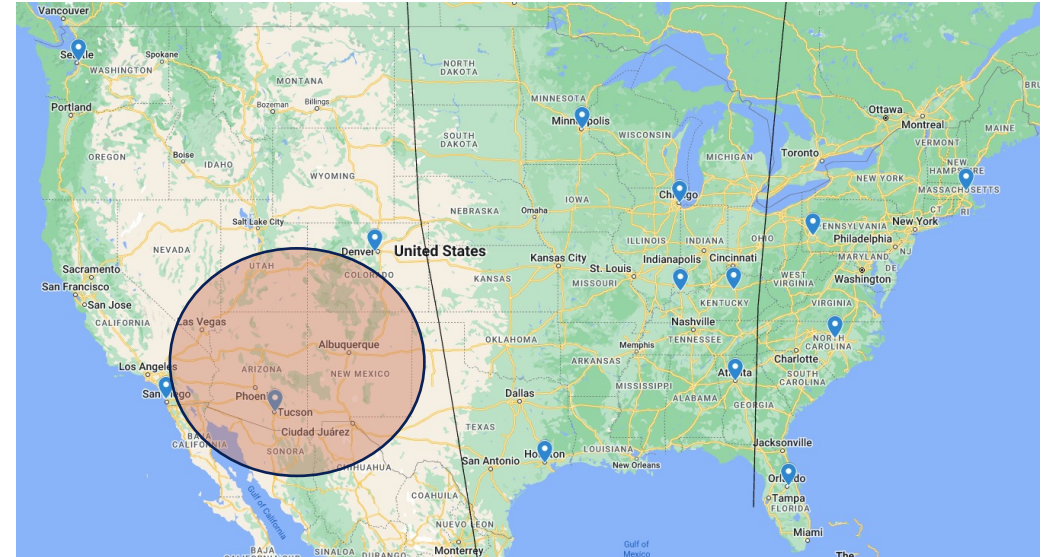
University of Arizona Center for Innovation

CASEY CARRILLO | CCARRILLO@UACI.COM

Summary of Organization

The University of Arizona Center for Innovation (UACI) is an incubator network on a mission to grow scalable startup ventures that fuel the Arizona economy. UACI supports science and technology companies at all stages of development in Southern Arizona and around the globe.

We connect those we serve to the people, programming and places that will help them take their companies from idea to market. This is accomplished by guiding startups through a continuum of education and activity using a 28-point structured roadmap program.



Reason for Being a Regional Convener/Why Excited

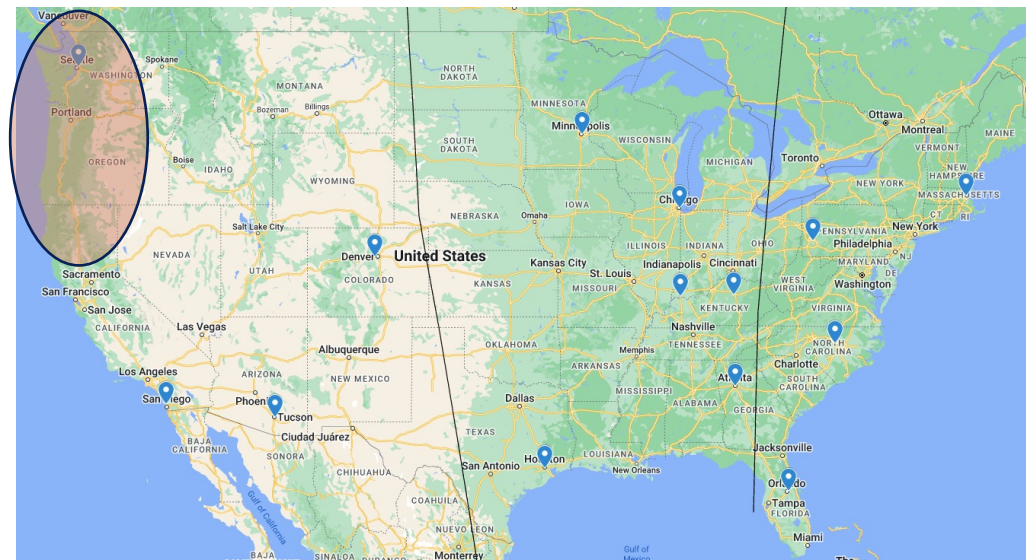
This is UACI's third year as a Regional Convener and we are thrilled to see the technologies presented this year! We are excited to be apart of this competition and support students from across the nation.

Clean Energy Institute at the University of Washington

MICHAEL POMFRET | MPOMFRET@UW.EDU

Summary of Organization

The mission of the Clean Energy Institute is to accelerate the adoption of a scalable and equitable clean energy future that will improve the health and economy of our state, nation, and world. To accomplish this, CEI supports the advancement of next-generation solar energy and battery materials and devices, as well as their integration with systems and the grid. The Institute creates the ideas and educates the people needed to generate these innovations, while facilitating the pathways to bring them to market.



Reason for Being a Regional Convener/Why Excited

University of Washington has served as a regional convener for the past 2 years and is excited to have the opportunity to do so again. We love what EnergyTech UP does for the clean energy and climate tech ecosystem!

Colorado School of Mines with WY Ranch

SID SALEH AND LIA FRANKLIN, AND LOGAN JENKINS

EMAILS: SHSALEH@MINES.EDU, FRANKLIN@MINES.EDU, LOGAN@WYRANCH.ORG

Summary of Organization

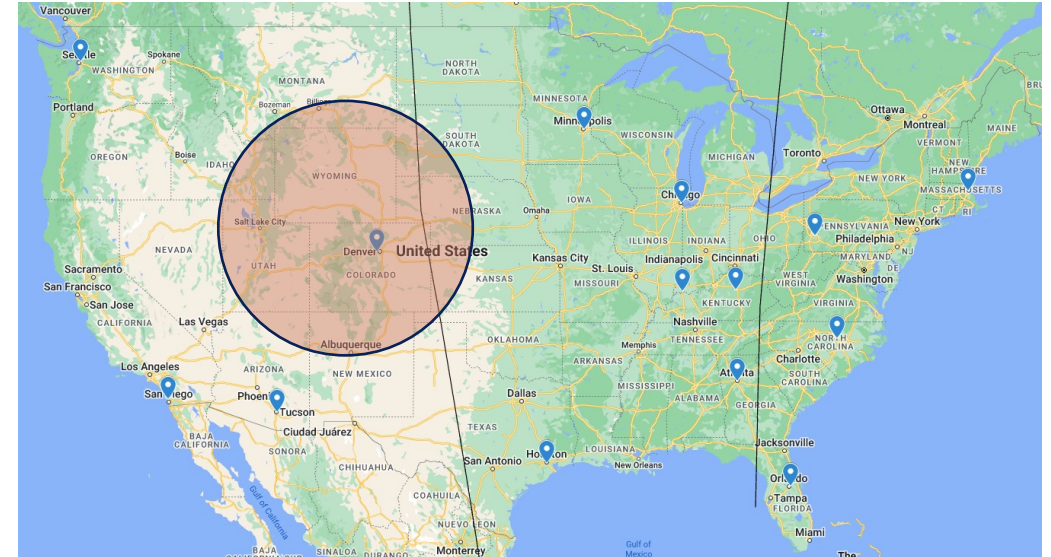
Colorado School of Mines is a public R1 research university focused on applied science and engineering, producing the talent, knowledge and solutions for industry and society.



COLORADO SCHOOL OF MINES
@150 | 1874-2024

The WY Ranch is a Hub for industry and organizations working in the energy sector across Wyoming. We work to connect industry, startups, and Mountain West schools with right-fit programs and funding opportunities.

WY RANCH



Reason for Being a Regional Convener/Why Excited

The McNeil Center for Entrepreneurship and Innovation creates value with and for our communities by empowering entrepreneurs and innovators. We vigorously support innovators in navigating ambiguity, complexity, uncertainty and constraints.

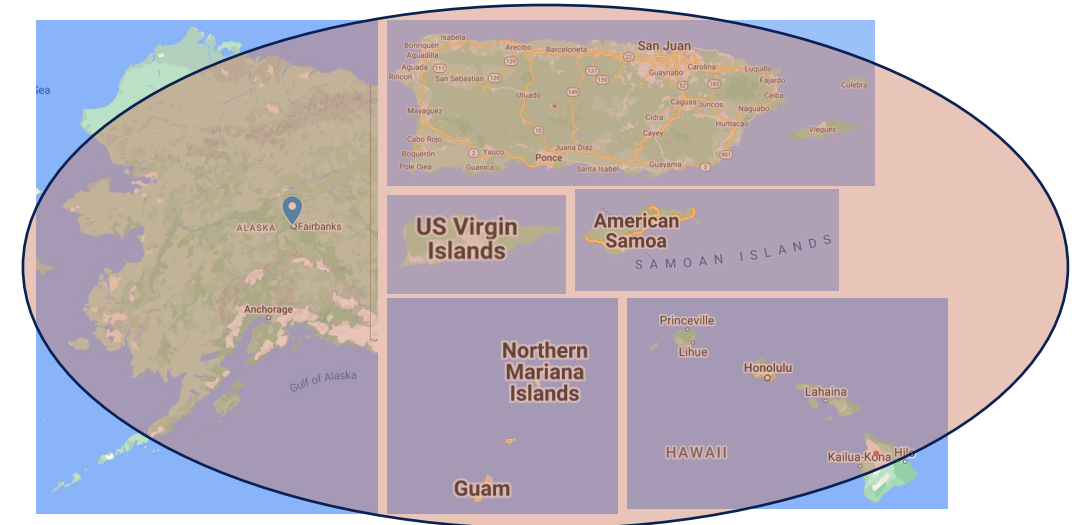
WY Ranch has many unique connections across the Mountain West that can assist teams new to technology transfer and startup business creation. We're proud to help a variety of teams in the region!

NREL – Alaska Campus

DANA TRUFFER-MOUDRA | DANA.TRUFFERMOUDRA@NREL.GOV

Summary of Organization

NREL Alaska Campus: Integrating scientific research and cultural knowledge to unleash sustainable, equitable energy, building, and mobility technologies with an emphasis on rural, remote, and islanded communities in some of the most extreme and challenging regions of the world.

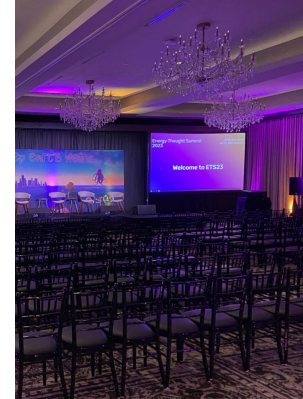
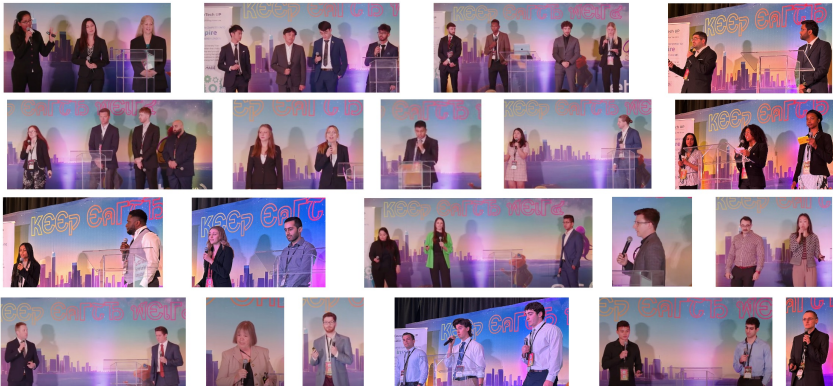


Reason for Being a Regional Convener/Why Excited

Thrilled to see the vast range of exciting technologies that students will be highlighting.

National Pitch Event: April 15 at the Energy Thought Summit

- All student finalists will present and compete for bonus and national prizes.
- Free access to the entire Energy Thought Summit will be provided, though you are responsible for your own travel and lodging costs.



**Up to 28 different teams can win a share
of \$450,000 in prizes.**

**Prizes are awarded for your work in this
competition and come with no IP or
ownership transfer, no further
obligations, and no reporting
requirements.**

Prizes Available to Student Teams

Category	Amount	Number Awarded	Total
Regional Finalist (up to 15)	\$3,000	15	\$45,000
Bonus Prize Finalists (up to 1 per prize)	\$3,000 each	Up to 13	\$39,000
All Finalists Eligible for Any of the Prizes Below			
1 st place	\$50,000	1	\$50,000
2 nd place	\$20,000	1	\$20,000
3 rd place	\$10,000	1	\$10,000
Technology Bonus Prizes	\$22,000 each	Up to 11	\$242,000
National Lab IP Licensing Bonus Prize	\$22,000	Up to 1	\$22,000
Undergraduate-Only Team Bonus Prize	\$22,000	Up to 1	\$22,000

Bonus Prizes

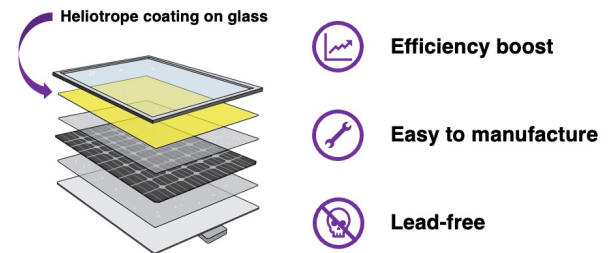
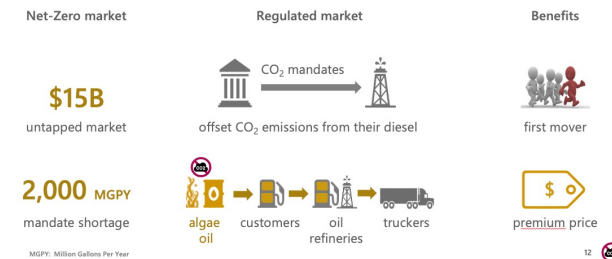
\$3,000 to each finalist
\$22,000 to each winner

- Building Technologies Office: HVAC Electrification
- Geothermal Technologies Office: Innovation and Inclusiveness
- Hydrogen Fuel Technologies Office: Innovation and Inclusiveness
- Office of Electricity: Grid-Enhancing Technologies (GETs)
- Office of Electricity: Large Power Transformers (LTPs)
- Office of Electricity: Long-Duration Energy Storage (LDES)
- Office of Fossil Energy and Carbon Management: Carbon Dioxide Removal (CDR)
- Office of Manufacturing & Energy Supply Chains: Smart Retrofit Manufacturing
- Office of Nuclear Energy: Accelerated Development and Deployment
- Solar Energy Technologies Office: Performance, Affordability, Reliability, and Value of Solar Technologies
- Water Power Technologies Office: Powering the Blue Economy
- Office of Technology Transitions: National Lab IP Licensing
- Office of Technology Transitions: Undergraduate-Only Team

Eligibility

- A team composed of two or more enrolled students.
 - Accredited U.S.-based collegiate institution.
 - 2-year, 4-year, and/or graduate institutions invited.
 - Any level student (undergraduate or graduate level) pursuing a degree and enrolled in at least 1 class.
 - Team captain must be a U.S. citizen or permanent resident.
 - Only students can present to judges.
- Following the close of registration on February 1, teams will be assigned to a regional convener's Explore Event to enable an equitable competition.
- Business plans that have not previously received notable funding may receive preference by the prize administrator. Competition is seeking new ideas and plans.

Sales Strategy



Technology Areas of Interest

- Student submissions must focus on technologies that produce and/or store energy, improve the efficiency of energy consumption or energy transmission, or increase the security and reliability of energy systems.
- Several DOE technology offices are offering technology bonus prizes for the best student entries in each technology office's respective fields.

Our Target Customer

- Mine Profitability
- Stable Waste Dumps
- Community Relations
- Decarbonize the Mine

"I can see a place for RockFix"
-General Manager

There are three primary techniques to recover battery materials:

	Flexibility of Feed	Low Energy Usage	Low Waste & Emissions	Safe	Final Product
Pyrometallurgical Inmetco, Sibma Solutions	+	-	-	-	Recovery of Co, Cu, Ni, not Li, Al, organic components
Direct ASCEND, Li Industries	-	+	+	-	Recovery of specific cathode or anode material
Hydrometallurgical ABTC, REDWOOD, LI-Cycle	+	+	-	-	Recovery of all cathode components as raw materials
Re³Li	+	+	+	+	Recovery of all battery components as raw materials

Sources: Fast Markets,

THE TECHNOLOGY QUANTUMPOWER

Commercial Silicon Carbide devices & modular design

Advanced control

High-performance magnetic technology

4.16kV/1MVA system designed and tested by UT team as part of a multi-year project funded by Department of Energy's Solar Energy Technologies Office (SETO)

Carbon To Stone Solutions

Two different applications of the same chemistry

Flue Gas CO₂ Capture and Utilization
335-355 ton of CO₂ captured

Air CO₂ Capture and Utilization
133-170 ton of CO₂ captured

Advantages

- Lower costs (CapEx & OpEx) due to fewer unit operations
- Highly regenerable solvent
- Lower temperature needs
- <3 hours for > 85% conversion of CaO/MgO
- Net-negative carbon footprint

Target Customers Iron and Steel, Mining

Companies seeking CO₂ offsets e.g. Data centers, Amazon, Meta, Google

- Current DOE targets for CO₂ capture < \$ 50 per ton of CO₂ captured from flue gas
- Current DOE targets for DAC range ~\$ 150-\$ 200 per ton of CO₂ captured from air
- Our technology is highly competitive

*Cost estimates are based on experimental data in Gadkotte, Nature Reviews Chemistry, 2020 Liu, Hohenberg, Gadkotte, Energy Fuels, 2021

All energy technologies are welcome.



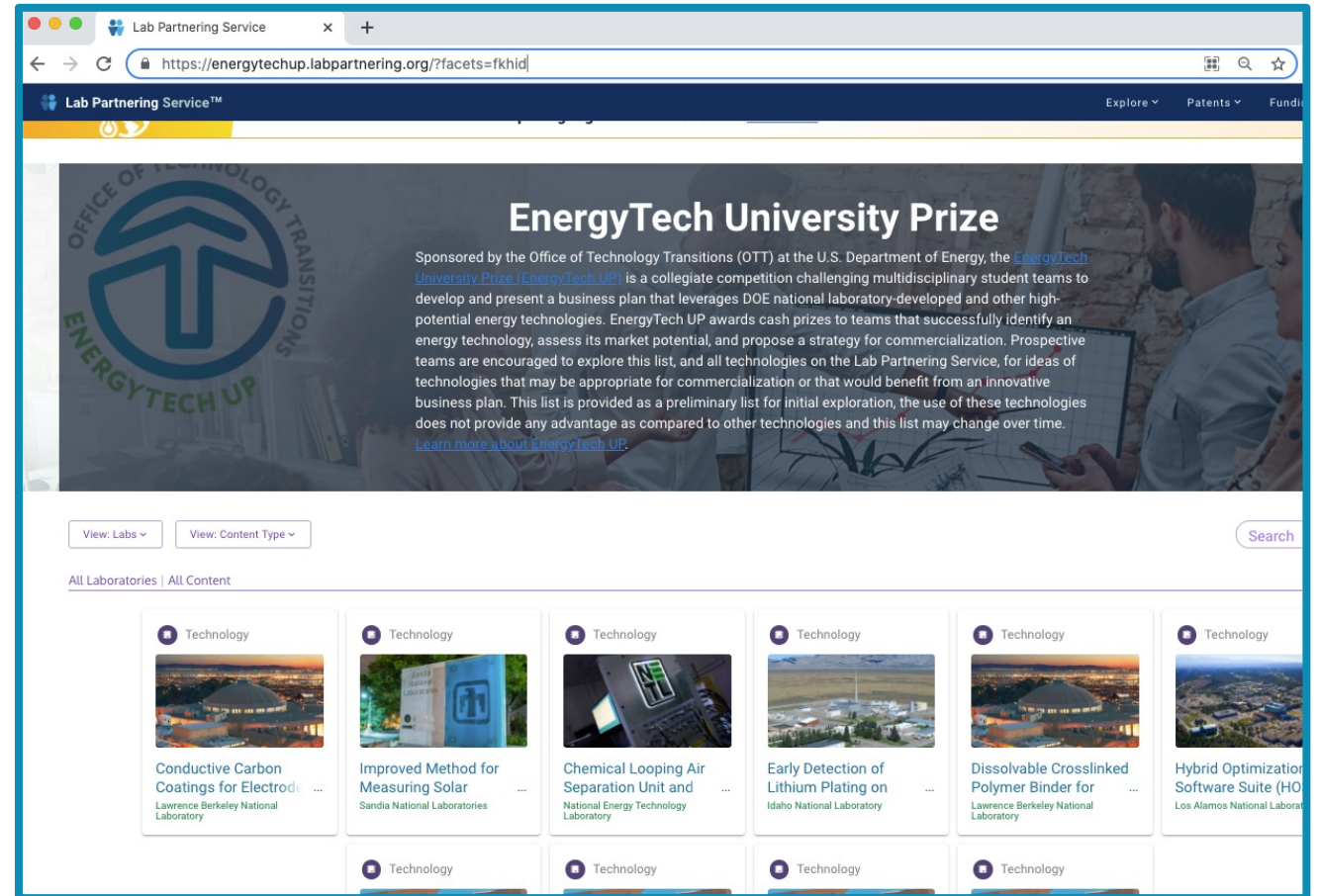
This is not a startup competition.

You don't need to own or have a license to the IP.

You don't need to have a business formed.

IP Ownership or License Not Required

- Technology you or your team members developed.
- Your institution's technologies.
- National lab-developed technologies via the Lab Partnering Service.
- Emerging technologies of interest to you and your team.



Lab Partnering Service

- Nearly 2,000 technologies available for license from DOE's national labs are summarized.
- About 100 energy technologies highlighted for consideration by EnergyTech UP competitors.
- Teams are not restricted to the technologies highlighted.

- Ames National Laboratory (2)
- Argonne National Laboratory (5)
- Brookhaven National Laboratory (3)
- Fermi National Accelerator Laboratory (0)
- Idaho National Laboratory (24)
- Kansas City National Security Campus (0)
- Lawrence Berkeley National Laboratory (5)
- Lawrence Livermore National Laboratory (4)
- Los Alamos National Laboratory (1)
- National Energy Technology Laboratory (4)
- National Renewable Energy Laboratory (12)
- Nevada National Security Site (0)
- Oak Ridge National Laboratory (11)
- Pacific Northwest National Laboratory (5)
- Pantex Plant (0)
- Princeton Plasma Physics Laboratory (8)
- SLAC National Accelerator Laboratory (1)
- Sandia National Laboratories (9)
- Savannah River National Laboratory (1)
- Thomas Jefferson National Accelerator Facility Jefferson Lab (0)
- Y-12 National Security Complex (1)

The Rules indicate:

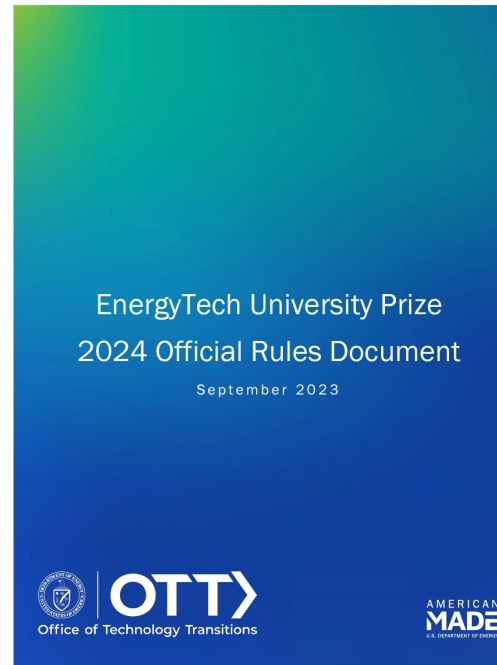
Topics of interest

What you'll do

How winners are determined

Competition Rules

- Released Sept. 27.
- Available on HeroX under “Resources”.
- Define eligibility, technologies areas of interest, prizes to win, how to enter, what to submit, and how winners are determined.



Contents

Contents	2
Welcome to the EnergyTech University Prize	4
About the Office of Technology Transitions	5
Summary of Important Dates.....	5
Technology Areas of Interest.....	6
Diversity, Equity, and Inclusion	6
Other Relevant Programs and Opportunities.....	7
Lab Partnering Service.....	7
Energy I-Corps.....	8
Adoption Readiness Level and the CARAT Framework.....	8
DOE’s Pathways to Commercial Liftoff Reports	8
American-Made Network	8
Technology Commercialization Fund	9
Technology Commercialization Internship Program	9
How to Enter.....	9
Student Track.....	10
Explore Phase.....	11
Refine Phase	11
Pitch Phase.....	12
Student Eligibility.....	12
Prizes to Win.....	13
What Students Submit.....	14
How Explore Phase Student Teams Are Determined.....	15
How Explore Phase Student Finalists Are Determined	16
How Bonus Prize Finalists and Winners Are Determined.....	19
How Pitch Phase Student Winners Are Determined	24

How Bonus Prize Winners Are Determined

The Prize Administrator screens all completed submissions and, in consultation with DOE, assigns expert reviewers to independently score the content of each submission. Expert reviewers will review submissions according to the evaluation criteria described in this document. A representative of OTT will make the final selection of winners for the Bonus Prizes based on the Pitch Phase reviewers’ scores and comments as well as the program policy factors described in these rules.

How We Score Bonus Prizes

Subject matter experts selected by the Prize Administrator and OTT will individually evaluate the Bonus Prize Finalist team pitches based on the pitch content and the written submission given in Table 7. Judges will meet after the Explore Phase presentations to discuss the teams with high average scores, update their scores to reflect all the information available, and determine winner(s).

Table 6: Scoring Scale

1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

Bonus Prize Challenge and Evaluation Statements

For the Bonus Prizes, teams present a comprehensive business plan that leverages a National Lab-



Overview of New Faculty Track

For details, see recording of prior webinar

Faculty are invited to compete for a share of \$100,000 in cash prizes for the successful development and implementation of educational activities that engage an increasing number of students on energy technology commercialization and entrepreneurship topics at their institution.

Faculty Track



- Faculty who submit by January 5 are eligible for Faculty Explorer awards.
- Any faculty can submit to the Implement Phase, even if they did not submit to the Explore Phase.
- Winners announced as part of the National Pitch Event, which occurs April 15, 2024.
- \$4,000 to each of the Faculty Explorers and \$60,000 in prizes for the Implement Phase.

Up to 10 faculty (or faculty teams) who submit by January 5, 2024, will be identified as Faculty Explorers and receive \$4,000 each.

Any faculty can submit an implementation plan by April 5 to be considered for remaining \$60,000 in prizes.

Perspectives from a regional convener and an Alumni

Beth Zonis

Senior Director at Cleantech
Open Northeast / NECEC

Skylar Bagdon

CEO of Verde Technologies

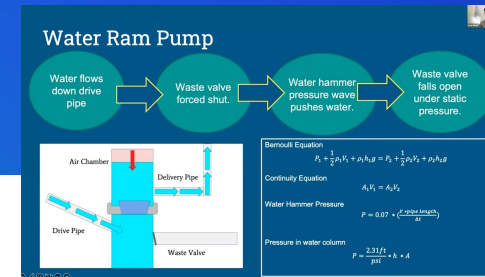
Resources and Support You'll Receive



- Highlighted energy technologies with business potential.
- Access to Energy I-Corps educational materials and Adoption Readiness Level framework training.
- Expert mentorship from DOE, industry, and/or lab staff.
- Example presentations from the 2023 competition.
- Cash prizes.
- Industry connections.

Watch Prior Pitches

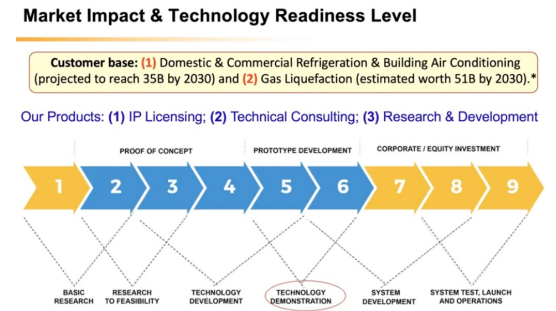
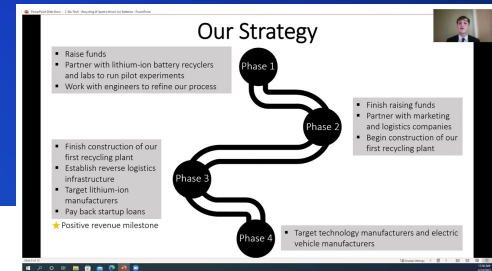
- [2023 National Pitches](#)
- [Interview with ReLi \(2nd place national winner\)](#)
- [Interview with Icorium \(3rd place national winner\)](#)
- [2022 National Pitches](#)
- [Northern Plains Regional Explore Event 2023](#)
- [NYC Metro Regional Explore Event 2023](#)
- [South Atlantic Regional Explore Event 2023](#)
- [Coastal Northwest Regional Explore Event 2023](#)
- [Great Lakes Regional Explore Event 2023](#)
- [South + U.S. Islands Regional Explore Event 2023](#)
- [Mid-Atlantic Regional Explore Event 2023](#)
- [National Capital Regional Explore Event 2023](#)



Our Market

UNIQUE OPPORTUNITY POSED BY POST-COVID-19

- Unprecedented vacancies experienced by urban residential and commercial buildings in wake of COVID-19
- 80% of building owners we interviewed are scrambling to find alternative revenue streams to balance vacancies
- Energy efficiency has also become key to marketing strategies of buildings to new tenants



Market Assessment

Description	UD Flyers	Natron Energy	Faradion	NGK Insulators	Indi Energy
Chemistry	NASICON Type	Prussian Blue	Oxide Technology	Sodium Sulfur	Oxide Technology
Country of Origin	USA	USA	UK	Japan	India
Energy Density	180-200 Wh/kg	80 Wh/kg	200 Wh/kg	200 Wh/kg	130 Wh/kg
Stability	High	Moderate	Moderate-High	Moderate-High	Moderate-High
Cost	Cheap	Moderate	Moderate	Moderate	Not Fixed
Durability	15 years	10 years	10 years	15 years	
Charging	Very Fast	Fast	Fast	Fast	Fast



POWERING ARCTIC GREENHOUSES BUSINESS CASE

MISSION MODEL CANVAS: FEASIBILITY, DESIRABILITY, VIABILITY.

MIDNIGHT SUN UNIVERSITY OF ALBERTA PARTNER





How to Promote or Compete

How to Get Involved

First...

- “Follow” the prize on HeroX.
- Read the Rules and determine how you want to participate.
- Spread the word using our “Promo Pack” of resources.
- Build your team.


Then...

- Explore energy technologies.
- **Faculty:** Click “Solve this challenge” and submit a “Register” entry by **Jan. 5, 2024!**
- **Students:** Click “Solve this challenge” and submit a “Register” entry by **Feb. 1, 2024!**







Leverage Resources to Recruit Students & Faculty

- Social posts.
- Newsletter content.
- Flyer.
- Web cards and graphics.

EnergyTech UP |  | **OTT** Office of Technology Transitions

A collegiate competition challenging teams to craft and present a business plan that leverages National Laboratory-developed or other emerging energy technologies developed by students, faculty, or industry.


New for 2024: A competition track challenging faculty to develop and implement educational activities to engage more students in energy technology commercialization and entrepreneurship topics at their institution.

-  **Connections to like-minded competitors & industry leaders**
-  **Opportunity to develop impactful plans for increasing commercialization of emerging energy technologies**
-  **Tailored mentorship, access to prior pitches, & recorded Energy I-Corps educational materials**
-  **\$400,000+ in cash prizes for students
\$100,000 in cash prizes for faculty**

Students: Submit a brief 200-word summary by Feb. 1, 2024 to register: heroX.com/EnergyTechUP

AMERICAN MADE
U.S. DEPARTMENT OF ENERGY

EnergyTech UP

 | **OTT** Office of Technology Transitions

Collegiate Business Plan Competition

Sponsored by the Office of Technology Transitions at the U.S. Department of Energy, the EnergyTech University Prize (EnergyTech UP) is a collegiate competition challenging multidisciplinary student teams to craft and present a business plan that leverages National Laboratory-developed or other emerging energy technologies developed by students, faculty, or industry.

EnergyTech UP awards more than \$400,000 in cash prizes to teams that successfully identify an emerging energy technology, assess its commercialization potential, and develop a business plan that leverages that technology.

- 1 Follow the Prize**
Create a HeroX account and follow the prize to get updates about deadlines, events, and updates: HeroX.com/EnergyTechUP
- 2 Explore Emerging Technology Opportunities**
See what inspires you to develop a business plan: EnergyTechUP.LabPartnering.org
- 3 Develop Your Business Plan**
Start crafting your business plan with your team.
- 4 Plan to Participate**
Prepare to present at a regional event in February.

Submit a brief 200-word summary by Feb. 1, 2024, to register your team: HeroX.com/EnergyTechUP

AMERICAN MADE
U.S. DEPARTMENT OF ENERGY

<https://www.herox.com/EnergyTechUP/resources>

Ideas for Securing Support

- Ask your regional convener about other colleges, universities, or entrepreneurship centers in your area.
- Contact your school's technology transfer office, business school, entrepreneurship program, sustainability or energy institutes.
- Discuss with other students at your institution in different majors.



Join us!

Faculty submit by January 5 to be considered for Faculty Explorer prizes and by April 5 for national prizes.

Students submit by February 1 to be invited to regional Explore Events.

[I learned how] Working with people of different technical skill sets really gave a different feel to the project. I like that it gives less focus to the technical side, but emphasizes practicality in implementation. It really gives people who aren't specialized in engineering or scientific topics a chance to make an impact and learn more about sustainability.

-Student Participant

OTT.EnergyTechUP@nrel.gov

[I learned] How to be more optimistic about global warming - it can be an opportunity to create a more sustainable and equitable future.

-Student Participant