Science Synthesis Prize

Informational Webinar
September 2024

U.S. DEPARTMENT OF ENERGY | OFFICE OF ELECTRICITY

Housekeeping Items

- This webinar is being **recorded** and will be shared on HeroX in the days following.
- You will be **automatically muted** upon joining and throughout the webinar.
- Please use the **Q&A function** to ask questions and ensure your question in answered. You can find this function in your toolbar next to the “Chat” icon.
- Please use the **chat feature** to add comments and share input.
- You can **adjust your audio** through the audio settings. If you are having issues, you can also dial-in and listen by phone, which can be found in your registration confirmation email.

Agenda

1. American-Made Overview
2. Science Synthesis Prize Overview
3. Submitting to the Prize
4. Power Connector (UACI)

American Made Challenges Overview

AMERICAN MADE
U.S. DEPARTMENT OF ENERGY

AMERICAN MADE

U.S. DEPARTMENT OF ENERGY

The American-Made program is your **fast track to the clean energy revolution**. Funded by the U.S. Department of Energy, we incentivize innovation through prizes, training, teaming, and mentoring, connecting the nation's entrepreneurs and innovators to America's national labs and the private sector.

supercharge

A REVOLUTION OF **BOLD IDEAS**

Fast track your ideas for the clean energy revolution

AMERICAN MADE
U.S. DEPARTMENT OF ENERGY

$400M
in cash prizes and support

75+
prizes

450+
Network members

Science Synthesis Prize

Overview

AMERICAN MADE
U.S. DEPARTMENT OF ENERGY

GRIT Prize Series

- The Science Synthesis Prize is a part of the Grid Resource Integration Technologies (GRIT) Prize series!
- The GRIT Prize series will catalyze research and development efforts across multiple offices focused on grid modernization through integration of grid resource technology, including distributed resources, operational tools, planning tools, energy storage, and more.
- More information can be found here: https://www.energy.gov/oe/grid-resource-integration-technologies-grit-prize-series

Prize Goals

This $125,000 prize aims to develop new transdisciplinary knowledge synthesizing the state of the art in renewable integration literature and practice by identifying the opportunities, challenges, and key investment areas that must be addressed to tackle renewable energy integration challenges for grid modernization and decarbonization.

As new renewable energy technologies are developed and integrated into the electric grid, there are new opportunities and challenges that must be addressed.

The Science Synthesis Prize supports competitors as they develop in-depth research papers which unlocks new literature and research areas. In this prize, competitors should synthesize the state of the art in the theory and practice of renewable energy integration; highlight current and future opportunities, challenges, risks, and areas of investment related to integrating large-scale renewable energy; pinpoint how solutions to these efforts could be best communicated to the industry; and describe how the presented opportunities and challenges could be addressed in a way that is informed by decision sciences.

Publications

Competitors may choose to submit their research papers to a peer-reviewed scientific journal. However, competitors must abide by the following:

1. Competitors may not submit their paper to a journal for review until the prize has closed and winners have been announced.

2. Competitors **must** include the following disclaimer in its entirety:

> This work was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third partys use or the results of such use of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof, its contractors or subcontractors.

Round 2
Eligibility

Individuals, teams of individuals, private entities (for-profits and nonprofits), and nonfederal government entities (such as states, counties, tribes, municipalities, and academic institutions) are eligible to compete in this prize.

- A competitor may only submit a single submission.
- Academic institutions must be based in the United States.
- Private entities shall be incorporated and maintain a primary place of business in the United States.
- Individuals competing as part of an incorporated private entity may participate if they are legally allowed to work in the United States.
- An individual prize competitor or group of competitors who are not competing as part of an incorporated private entity must all be United States citizens or legal permanent residents.

Refer to the official rules for the complete eligibility requirements.

Science Synthesis Prize: Identifying Key Barriers to Renewable Integration

Official Rules

MAY 2024

Read the Rules!

Official Rules for the American-Made Science Synthesis Prize are available on HeroX (under the Resources tab).

https://americanmadechallenges.org/challenges/science-synthesis/docs/Science-Synthesis-Prize-Rules.pdf

Submission Package

What to submit:

1. Author biographies
2. Cover page
3. Research paper that addresses 4 key points

Biographies & Cover Page

Biography

Half-page summary per author highlighting:

- Current & previous contributions to the energy industry
- Any additional professional background information that would help highlight their experience and knowledge

Cover Page

Must include:

- Research paper title
- Team name
- Project members (names, contacts, and links to their professional online profiles)
- Other partners (if any)
- Your city, state, and nine-digit ZIP code.

Research Paper

1. Current Industry Outlook

What is the state of the art in the science and practice of renewable energy integration?

2. Opportunities & Challenges

What opportunities and challenges exist currently and in the near future for accelerated integration of large-scale renewables?

TIPS and TRICKS

- Remember your audience
- Be specific (this portion isn't public)
- Pay attention to the word count

3. Interventions & Investments

What interventions and investments are needed to meaningfully leverage the opportunities and address challenges and blind spots?

4. Industry Impact

How can the presented opportunities and challenges be addressed in a way that is informed by decision sciences and communicated to the stakeholders?

Word Limit: 6,000 words

Research Paper (Cont.)

1. Stakeholder Engagement *(Optional)*

What stakeholders from within the renewable energy industry and from other industries need to collaborate to bring about the greatest impact?

2. Key Innovations *(Optional)*

What key technologies or innovations are still needed for large-scale integration of renewable energy resources?

3. Long-Term Version *(Optional)*

What is the long-term vision of renewable energy integration in the United States?

Word Limit: 6,000 words

Research Paper (Cont.)

Formatting

Papers should be:

- Double spaced
- 1-inch margins
- Headings, subheadings, & sub-subheadings should be formatted according to the following example:

3. FURTHER DISCUSSIONS
3.1. Challenges
3.1.1. *Emerging Risks*
3.1.2. *Epistemic Uncertainties*
3.2. Opportunities

Plagiarism

The submitted papers may be screened for plagiarism against previously published works, with significant consequences for the cases where plagiarism is detected.

Ethics

Teams should transparently disclose ***any*** use of artificial intelligence (AI) tools such as:

- ChatGPT
- Gemeni
- Large Language Models
- Etc.

Science Synthesis Prize

Generate new and comprehensive knowledge on the current state of science in renewable integration with the $125,000 Science Synthesis Prize

Energy, Environment & Resources | Science

Stage: **Submissions Open**

Prize: **$125,000**

SOLVE THIS CHALLENGE

HeroX Submission

- Your Submission is due by November 12, 2024, at 5 PM ET.
- Late submissions will not be accepted.
- Submissions can be entered on HeroX: https://www.herox.com/ScienceSynthesis

Power Connector

Power Connector

THE UNIVERSITY OF ARIZONA
CENTER FOR INNOVATION

Application Assistance is Available!

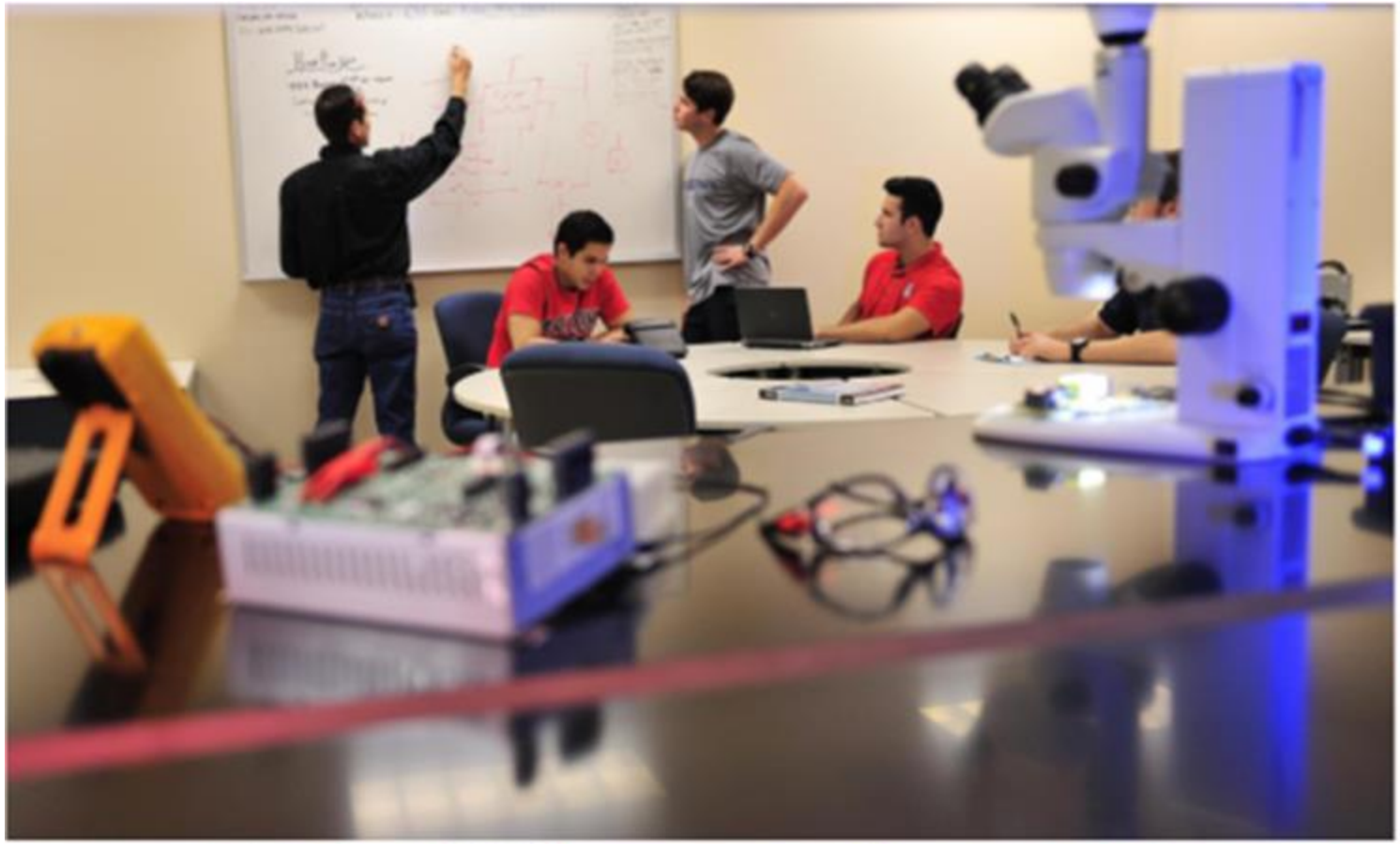
- See the HeroX updates page for links to monthly office hours from UACI.
- You can also schedule 1:1 meetings with a UACI Mentor or Program Manager.

U.S. DEPARTMENT OF ENERGY
OFFICE OF ELECTRICITY

How to navigate the prize and utilize Power Connector support

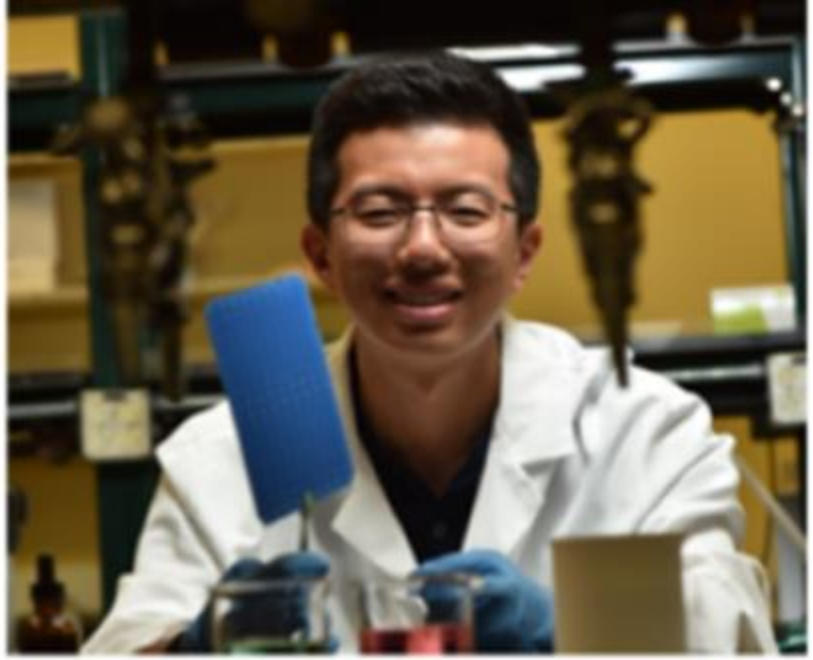
Hosted by UACI

THE UNIVERSITY OF ARIZONA CENTER FOR INNOVATION

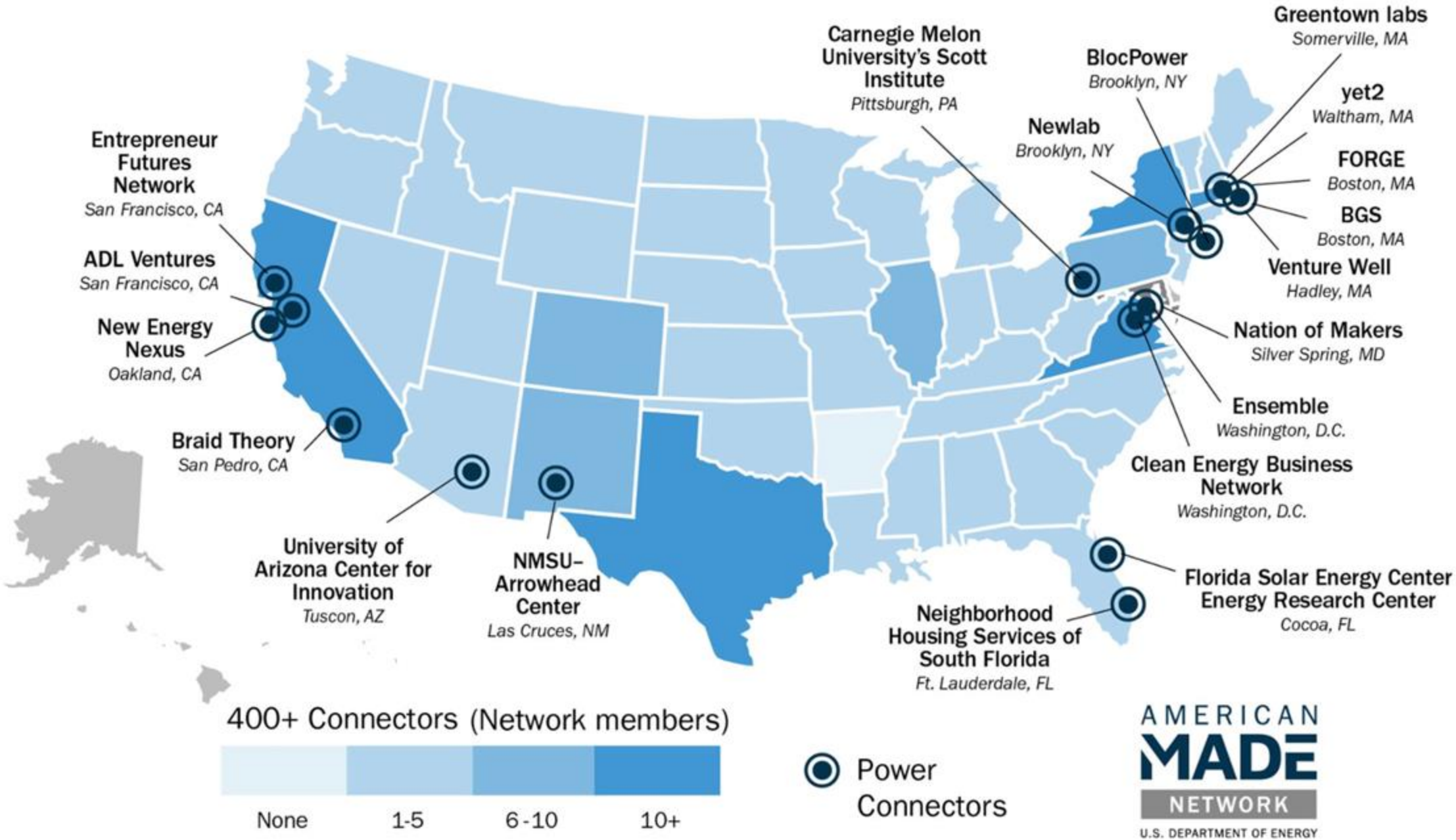



OTOTYPING LAB
ONA CENTER FOR INNOVATION


THE UNIVERSITY OF ARIZONA
CENTER FOR
INNOVATION
FUELING SOUTHERN ARIZONA'S
INNOVATION ECOSYSTEM



SOLAR ZONE


Greentown labs
Somerville, MA
Carnegie Melon University's Scott Institute
Pittsburgh, PA
BlocPower
Brooklyn, NY
yet2
Waltham, MA
Newlab
Brooklyn, NY
FORGE
Boston, MA
BGS
Boston, MA
Entrepreneur Futures Network
San Francisco, CA
Venture Well
Hadley, MA
ADL Ventures
San Francisco, CA
New Energy Nexus
Oakland, CA
Nation of Makers
Silver Spring, MD
Ensemble
Washington, D.C.
Braid Theory
San Pedro, CA
Clean Energy Business Network
Washington, D.C.
University of Arizona Center for Innovation
Tuscon, AZ
NMSU–Arrowhead Center
Las Cruces, NM
Florida Solar Energy Center Energy Research Center
Cocoa, FL
Neighborhood Housing Services of South Florida
Ft. Lauderdale, FL
400+ Connectors (Network members)
None
1-5
6-10
10+
Power Connectors
AMERICAN MADE NETWORK
U.S. DEPARTMENT OF ENERGY

PRIZE

Due Date
November 12, 2024
5 pm MST

1.1 Prize

The Science Synthesis Prize: Identifying Key Barriers to Renewable Integration offers a total prize pool of $125,000.

Competitors will form robust teams to develop an in-depth and cohesive research paper that highlights the state of the art in renewable energy technologies, addresses the current and projected challenges associated with such technologies, and identifies the renewable integration gaps throughout the industry that could be addressed with greater investment, research, development and/or awareness. Up to 10 teams will each receive $10,000, and up to 5 teams may be awarded an additional $5,000 each for exceptional submissions.

Winners	Prizes
Up to 10 winners	$10,000 ($100,000 total prize pool)
Up to 5 winners	$5,000 bonus ($25,000 total prize pool)

ELIGIBILITY

United States Based - 1 Submission:

- Individuals
- Private Entities
- Academic Institutions
- For Profits
- Non Profits
- Tribes
- Municipalities

Multidisciplinary Teams Consisting of:

- Students
- Researchers
- Scholars
- Scientists
- Engineers
- Stakeholders

The Science Synthesis Prize: Identifying Key Barriers to Renewable Integration

Incentivize competitors to analyze the renewable energy industry to highlight **opportunities** and **challenges** for large scale integration of renewables that could be addressed with greater awareness and more effective investments.

Competitors should:

- synthesize the state of the art in the theory and practice of renewable energy integration
- highlight current and future opportunities, challenges, risks, and areas of investment related to integrating large-scale renewable energy
- pinpoint how solutions to these efforts could be best communicated to the industry
- describe how the presented opportunities and challenges could be addressed in a way that is informed by decision sciences.

SUBMISSION

- Author Biographies
- Cover Page
- Research Paper Addressing 4 Key Points - 6,000 words

Submission

Biography

Half page summary per author highlighting:

Current & previous contributions to the energy industry

Any additional professional background information that would help highlight their experience and knowledge

Cover Page

Must include:

Research paper title

Team name

Project members

Other partners (if any)

City, State, 9 digit ZIP code

SUBMISSION - Research Paper

1. **Current Industry Outlook**

What is the state of the art in the science and practice of renewable energy integration?

1. **Opportunities & Challenges**

What opportunities and challenges exist currently and in the near future for accelerated integration of large scale renewables?

3. **Interventions & Investments**

What interventions and investments are needed to meaningfully leverage the opportunities and address challenges and blind spots?

3. **Industry Impact**

How can the presented opportunities and challenges be addressed in a way that is informed by decision sciences and communicated to the stakeholders?

Word Limit: 6,000 words

SUBMISSION - Research Paper (Cont.)

1. **Stakeholder Engagement (Optional)**

What stakeholders from within the renewable energy industry and from other industries need to collaborate to bring about the greatest impact?

1. **Key Innovations (Optional)**

What key technologies or innovations are still needed for large-scale integration of renewable energy resources

3. **Long-Term Version (Optional)**

What is the long-term vision of renewable energy integration in the United States?

Word Limit: 6,000 words

AMERICAN-MADE NETWORK

Power Connectors

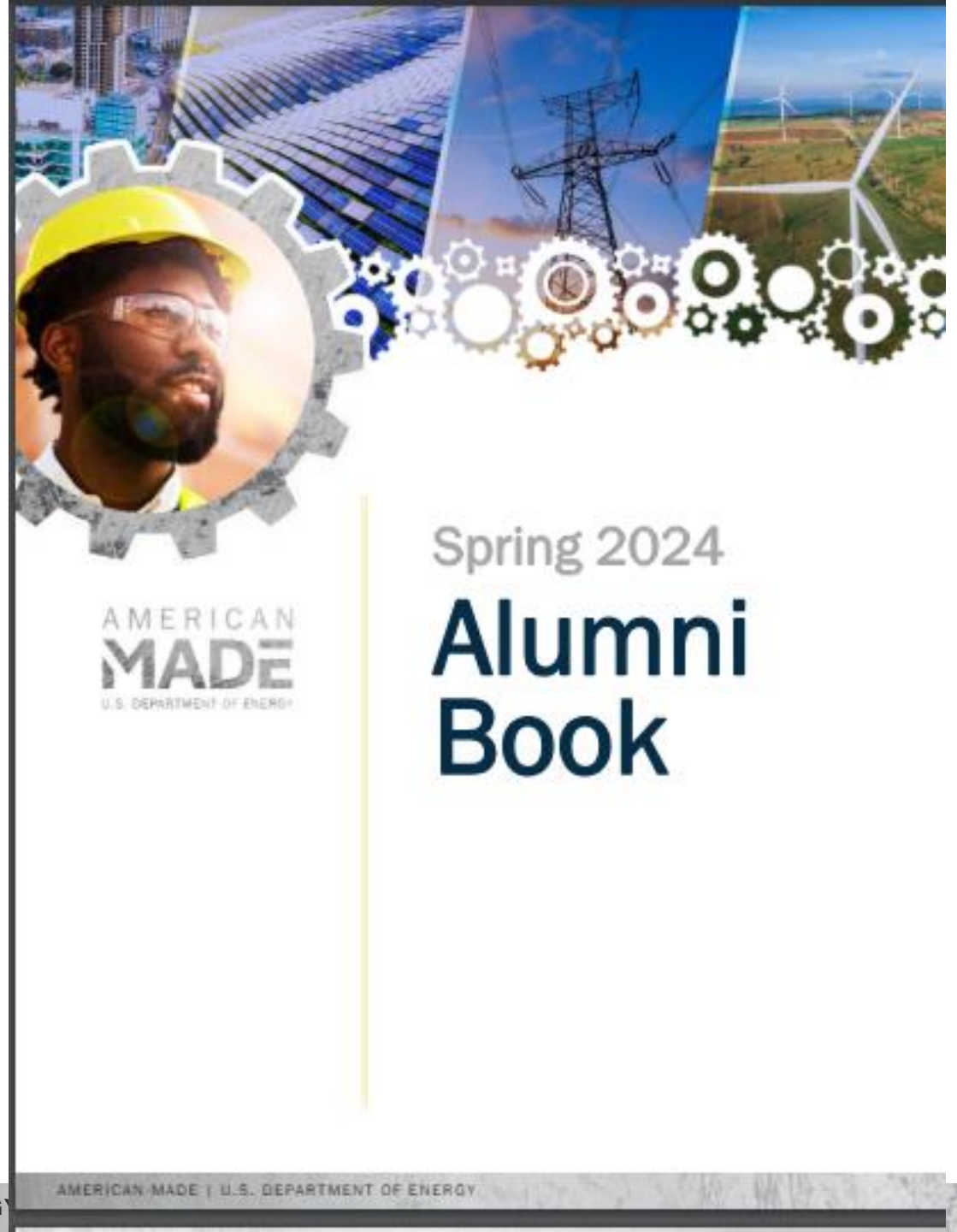
Organizations contracted to help with specific tasks for specific prizes. They partner with the National Renewable Energy Laboratory to envision and execute a sustainable growth strategy for the American-Made Challenges program and help teams achieve project success. Tactically,

- Recruitment
- Mentorship
- Networking
- Application Support

Connectors

Professionals from national laboratories, accelerators, incubators, universities, facilities, and industry who support competitors through the development and launch process.

- Industry Experts
- Past Competitors
- National Laboratories
- Accelerators and Incubators
- Universities
- Facilities - Research, Testing and Demonstration



Prizes

Award

Teams

Technology

Community

Companies (90)

Search Competitors

Finalist

All Competitors | Winner | Finalist | Competing

Challenge

CABLE Prize

Technology Readiness Level

- CABLE Prize
- Community Power Accelerator Prize
- Digitizing Utilities Prize
- E-ROBOT Prize
- EAS-E Prize
- EPIC Prize Start-Up Pitch Competition
- Energizing Rural Communities Prize
- Energy Storage Innovations
- FLOWIN Prize
- Geothermal Geophone Prize
- Geothermal Manufacturing Prize
- HVDC Prize
- Hydrogen Shot Incubator Prize
- Perovskite Startup Prize
- Soalr Prize Round 6
- Solar Forecasting Prize
- Solar Prize Round 1
- Solar Prize Round 2
- Solar Prize Round 3
- Solar Prize Round 4

SI	Solar Inventions LLC		*technology readiness level* **TRL 8**
TC	TS Conductor, Inc.		*technology readiness level* **TRL 4**
EA	Energy Allies		*technology readiness level* **TRL 3**
LS	Legacy Solar Co-op Wisconsin	**Community Power Accelerator Prize**	*technology readiness level* **TRL 8**
MP	Mana Pacific	*Challenge* **Community Power Accelerator Prize**	*technology readiness level* **TRL 8**

COMMUNITY FOCUS

- Solve It Prize
- Energizing Rural Communities
- Community Energy Innovation Prize
- Inclusive Energy Innovation Prize

NEXT STEPS

1. Register on HeroX - https://www.herox.com/ScienceSynthesis
2. Watch NREL Informational Webinar - https://youtu.be/aC1S3MpwCf4?si=4NtYaNn00IuXWwsi
3. Gather team members
4. Assess the network - https://network.americanmadechallenges.org/
5. Reach out to connectors and power connector

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Contact Us

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U.S. DEPARTMENT OF ENERGY

Should you have any questions or need further clarification, please contact us at: ScienceSynthesisPrize@nrel.gov