Energy Storage Innovations Prize

AMERICAN MADE
U.S. DEPARTMENT OF ENERGY

Informational Webinar
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Housekeeping

This webinar is being recorded and will be made available later.

Questions:

- There will be a Q&A session at the end of the presentation
- To submit a question, type it into the “Q&A Box”

Technical Issues:

- If you experience technical issues, please check your audio settings under the “Audio” tab
- A recording will be posted following the webinar

Agenda

1. Overview of American-Made Challenges
2. Introduction to the prize competition
3. Prizes to win
4. Background information
5. Prize eligibility
6. Submission requirements
7. How to compete
8. Timeline
9. Scoring process
10. Supports and resources
11. Next steps + Q&A

Overview of American-Made Challenges and Network

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Your
fast track
to the clean
energy
revolution.
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supercharge

A REVOLUTION OF **BOLD IDEAS**

Fast track your ideas for the clean energy revolution

$100M
in cash prizes and support

30+
prizes

250+
Network members

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The Energy Storage Innovations Prize

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What is the Energy Storage Innovations Prize?

A call for promising, next-generation **solutions to energy storage challenges.**

Innovators with nascent and emerging technology proposals can **compete for a portion of the $300,000 cash prize.**

Competitors will propose their **grid-scale, long duration-capable energy storage innovation.**

Submissions will be judged on the innovation's quality including **2030 levelized cost of storage goals, supply chain considerations, equity, and other strengths.**

Prizes to Win

Up to five *Energy Storage Champions*

- $50,000 each

Up to five *Energy Storage Finalists*

- $10,000 each

Potential opportunity for some or all of the winning teams and their innovations being listed in a future Report to Congress!

Cash prizes are paid to the team captain upon receipt of Internal Revenue Service Form W-9 and Automated Clearing House (ACH) banking information. Team captains are responsible for distributing prize funds to team members.

ENERGY earthshots | Storage™
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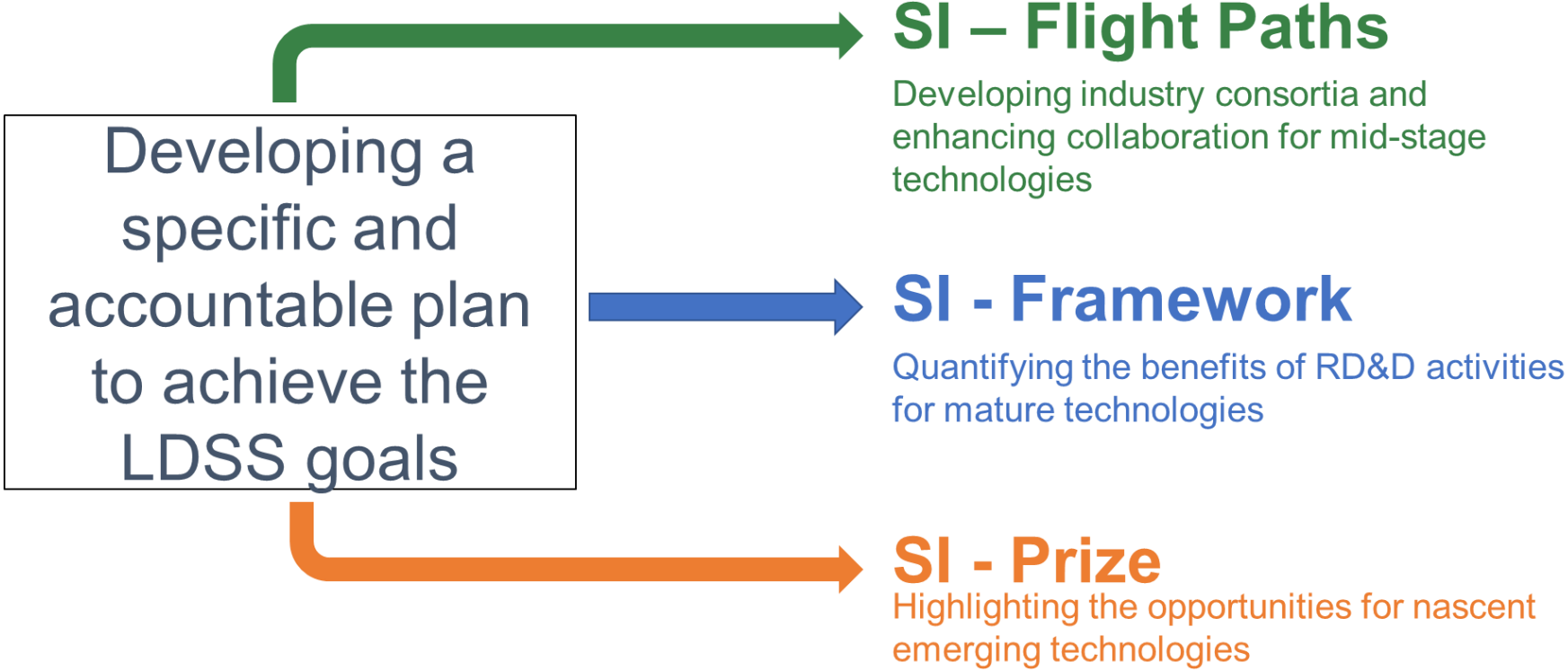
LONG DURATION STORAGE SHOT TARGET

Needed: A specific, actionable roadmap to develop, scale, and deploy the most promising technologies that will meet the 2030 Long Duration Storage Shot goal.

Affordable grid storage for clean power – any time, anywhere

Storage Innovations (SI) 2030



Type	Technology
Electrochemical	Li-metal
	Na-metal
	Other metals (e.g., Mg, Al)
	Reversible fuel cells
Electromechanical	Liquid air energy storage
	Flywheels
	Geomechanical
	Pumped storage hydropower
	Gravitational
Thermal	Phase change
	Low-temperature storage
	High-temperature sensible heat
	Thermal-photovoltaic
Chemical	Chemical carriers (e.g., ammonia)
	Hydrogen
Flexible buildings	Thermostatically controlled loads
	Building mass
	Ice and chilled water
	Organic phase change material
	Salt hydrate
	Thermochemical
	Desiccant
Flexible generation	Front-of-the-meter flexibility and hybrids
	Behind-the-meter hybrids

SI 2030 Prize: Example Technologies of Interest

- Private entities, non-federal government entities, academic institutions, and individuals are invited to submit their innovative energy storage ideas.
- A non-exhaustive list of emerging technology areas includes those listed.

Rules document, Page 5
Table 1

Technology Categories Not of Interest

- DOE recognizes the many exciting innovations around established technologies
- SI Framework and SI Flight Paths will feature extensive analysis and industry collaboration around a set of developed & mature technologies

Table 2: Storage Innovations Framework Technology Categories of Focus

(Technologies Not of Interest for This Prize)

Lithium-ion batteries	Lead batteries
Sodium-ion batteries	Flow batteries
Zinc batteries	Compressed-air energy storage
Supercapacitors	

Eligibility

The competition is open to:

- Private entities
- Non-federal government entities
- Academic institutions
- Individuals

Private entities must be incorporated and maintain a primary place of business in the United States.

Academic institutions must be based in the United States.

Individuals not part of a private entity must be US citizens or legal permanent residents.

What You'll Submit

Video: a 90-second video introducing your team and your innovation (public)

Narrative: a 3,000-word maximum paper answering four questions (NDA-protected)

1. What is your storage technology innovation?
2. How does your technology support DOE's goals for cost-effective long-duration energy storage?
3. What challenges are associated with the development and deployment of your technology?
4. How do you plan to further develop or commercialize your technology?

Summary Slide: a one-slide summary of your team, mission, and innovation (public)

Narrative Breakdown: Question #1

Question 1: What is your storage technology innovation?	
Suggested Content • Provide a thorough **technical** description of your technology with detailed diagrams and schematics, as appropriate. • Provide information and performance data from previous simulations, lab-scale tests, or demonstrations. • Include a description of how this technology moves beyond the state of the art and is better than existing solutions.	**Two scores are provided, each on a scale of 1–6.** • Score #1: The technology description clearly shows how the technology works or is intended to work, including technical feasibility backed up with robust tests/demonstrations/simulations. • Score #2: The technology described is an innovative and compelling solution that moves the energy storage sector beyond the state of the art.

Narrative Breakdown: Question #2

Question 2: How does your technology support DOE's goal for cost-effective long-duration energy storage?[8] What other DOE priorities (e.g., sustainable supply chain, energy equity, enhanced resilience) or innovative storage use cases will your technology meet?	
Suggested Content • Provide a current and 2030 LCOS estimation. For more information on LCOS calculation, please reference the LCOS methodology from DOE's Advanced Research Projects Agency–Energy (ARPA-E).[9] • Include details about anticipated power ratings and durations for given cost. • Relate LCOS estimations to the Long Duration Storage Shot goal.[10] • Provide a clear description of your innovation's value proposition and other technology benefits and how they align with DOE priorities (e.g., creating a sustainable supply chain, providing energy equity, enhancing resilience).	**Two scores are provided, each on a scale of 1–6.** • Score #1: Based on included descriptions, calculations, and projections, the technology has a pathway to reach the Long Duration Storage Shot goal with feasible and realistic estimates. • Score #2: The technology clearly and robustly benefits DOE priorities such as creating a sustainable supply chain, providing energy equity, enhancing resilience, and others.

Narrative Breakdown: Question #3

Question 3: What challenges are associated with the development and deployment of your technology?	
Suggested Content • Provide a list of technical barriers and challenges that additional RD&D is needed to address. • Provide a list of key technology and commercialization risks related to scale-up and further demonstration.	**A single score on a scale of 1–6 is provided, taking the following statements into consideration:** • A realistic and well-thought-out description of barriers and challenges is provided, including potential solutions and RD&D areas of consideration. • Competitor gives thoughtful consideration to risks related to scale-up and further demonstration.

Narrative Breakdown: Question #4

Question 4: How do you plan to further develop or commercialize your technology?	
Suggested Content • Include the RD&D activities needed to further develop this technology. • Highlight how anticipated next steps will build upon progress made so far. • List which types of project partners are needed to continue technology development and demonstration. • Highlight how additional investment would help further technology development.	**A single score on a scale of 1–6 is provided, taking the following statements into consideration:** • Competitor provides a clear list of future RD&D activities to further develop the technology. • Clear links are established between the current state of the technology and the areas of development needed to reach future goals. • Thorough descriptions of the types of essential project partners are included. • Competitor includes compelling evidence of how additional funding could help progress the development of the technology.

Summary Timeline

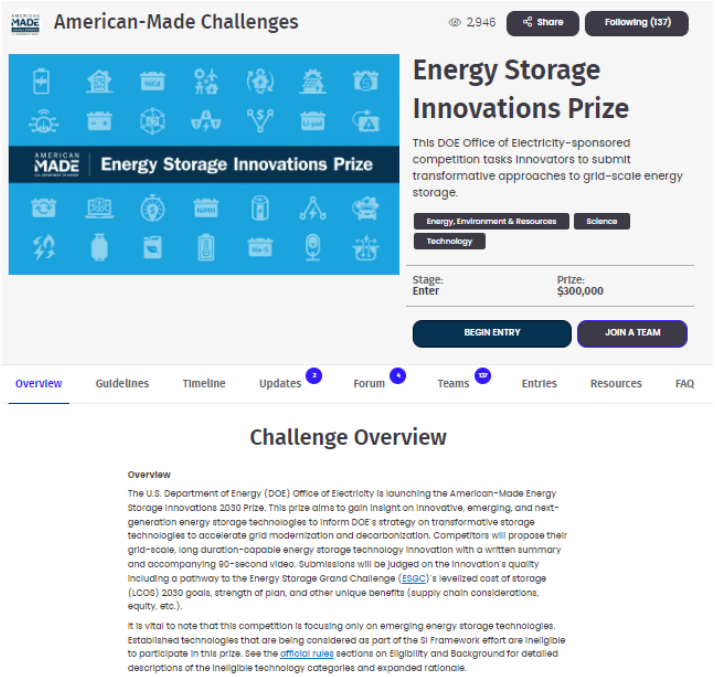
- **October 17**: prize begins
- **December 16**: submissions due
- **December & January 2023**: evaluation of submissions
- **February 2023**: announcement of winners

How to Register and Compete

- Go to the HeroX prize page:
- https://www.herox.com/storageinnovations

- Choose “Solve this Challenge” or “Begin Entry.” This indicates your interest in competing; it is not a commitment (yet).
- Sign in or create a HeroX account
- Agree to the Terms of Use
- Confirm your email address
- Accept the Challenge-Specific Agreement
- Indicate “Would you like to compete as a team?”

- Submit Final Submission materials prior to December 16 at 5pm EST



Judging and Scoring Process

1. A qualified panel of judges, comprising subject matter experts from energy storage industries, score final submissions

2. The Rules Document provides details on the scoring statements that judges will evaluate

3. Judges use a 6-point scale to evaluate each statement, from “strongly disagree” to “strongly agree”

4. The score from an individual judge is the summed total of the scores for all the evaluation statements. All judge scores are then averaged for a preliminary score for each submission

5. The preliminary scores for all teams yield a preliminary ranking of teams

6. The judging panel convenes to review preliminary scores, discuss and agree upon final scores, and recommend the winners of the Prize to DOE

DOE will make the final determination of the winners.

Support: Power Connectors

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Entrepreneur Futures Network

EFN's role: to provide free and equal support to interested prize competitors

Contact information located on HeroX (Resources tab)

Email, phone, and 1:1 office hours

Virtual networking event November 16 @ 12pm EST

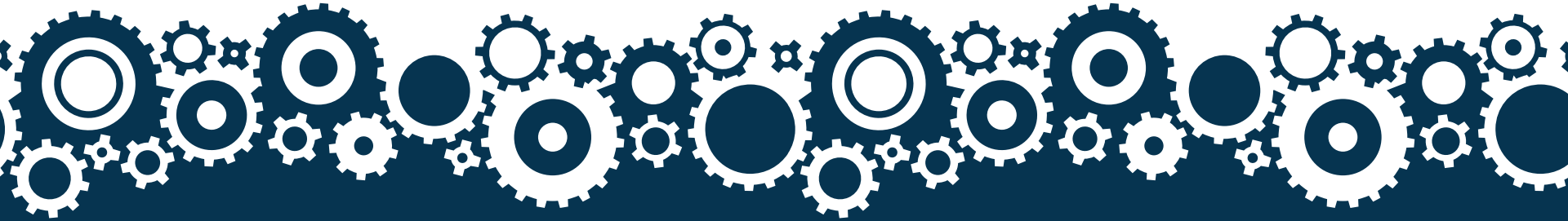
Next Steps

Recruit
Team members, community partners, local organizations

Register
Your team on HeroX

Read
The rules, plan your participation, leverage support resources

Design
Your plan and submission materials by Dec. 16, 2022



Q&A

Thank you for your participation!