

This webinar will be recorded.

American-Made Challenges

Wind Turbine Materials Recycling Prize

Phase 1: Informational Webinar



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Agenda

- 1 American-Made Overview
- 2 Prize Overview
- 3 Submission Elements Overview
- 4 How We Score
- 5 Apply on the HeroX Prize Platform
- 6 Next Steps

Housekeeping

This webinar is being recorded and will be available on HeroX.

Questions?

- To submit a question, please type it into the **Q&A box on the right-hand side of your screen next to the chat box.**
- We will post responses to your questions on HeroX.

Technical Issues:

- If you experience technical issues, **please check your audio settings under the “Audio” tab.**
- If you continue experiencing issues, direct message the host.



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Prizes

American-Made Overview

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what

IS AMERICAN-MADE ALL ABOUT?

AMERICAN MADE

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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

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\$200M
in cash prizes
and support



55+
prizes



400+
Network
members

Grants vs. Prizes



Financial Award Process

Write and submit concept papers

Review concept papers

Write and submit full applications

Review full applications

Select and negotiate projects

Perform

Prepare and submit reimbursement requests

Review requests and issue reimbursement

Prize Award Process

Participants begin performing

Participants achieve predefined goal

Participants submit package

Judges score submissions

Winners receive payment



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Phase 1

Prize Overview

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Wind Turbine Materials Recycling Prize Timeline



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Phase 1 *Initiate!*

Submissions Open: **July 12, 2023**
Informational Webinar: **Aug. 3, 2023**
Submissions Close: **Sept. 29, 2023**

- Up to 20 winners
- Prize: \$75,000 cash

Phase 2 *Accelerate!*

Submissions Open: **December 2023***
Submissions Close: **July 2024***

- Up to 6 winners
- Prize: \$500,000 cash,
\$100,000 technical vouchers

*Anticipated

Moving Toward a Circular Economy

- The United States has a goal of 100% energy sector decarbonization by 2035.
- Decarbonization is likely to require rapid deployment of clean energy technologies—as much as 10 times current deployment!
- Industry is seeking to move towards zero-waste business practices.



Most wind turbine materials can be economically recycled today* ...

Steel, cast iron, and concrete comprise the bulk of a wind turbine's mass and all have existing commercial recycling pathways

Commercial scale, self-sustaining recycling solutions for *fiber-reinforced composites* and critical minerals like *rare earth elements* are extremely limited or non-existent

...but not all of them

*Roughly 90% of wind turbine materials by mass have economical recycling solutions available today.

Goal of the Prize

The goal of the prize is to award funding to designers of novel technologies and highly capable commercial entities to help develop a cost-effective and sustainable recycling industry for two high-impact categories of wind energy materials: fiber-reinforced composites and rare earth elements.

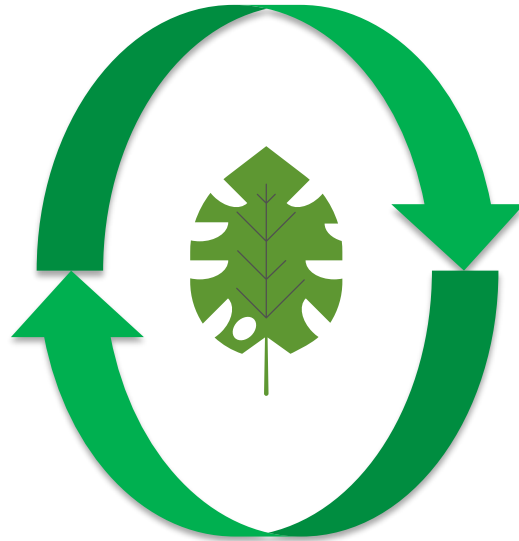
Technologies of Interest

This prize is explicitly focused on technologies that *enhance the ability to recycle materials* when wind energy technologies are decommissioned. If the proposed process has broader applications, such as accepting and recycling waste from manufacturing or other waste streams, this attribute will benefit the submission but should not be the primary driver.

Impact on the Domestic Wind Energy Industry

The prize will:

- Extend the economic value of wind energy materials.
- Accelerate development of a domestic recycling industry for key materials necessary for the clean energy transition.
- Reduce waste from the wind energy industry.
- Develop a recycling industry and workforce in an equitable and sustainable way.



Phase 1

In Phase 1, participants will submit:

- Identification of industry need.
- A technology description and development plan.
- An initial market ecosystem and risk assessment.
- A Community Benefits Plan.
- An initial life cycle assessment.





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Phase 1

Submission Elements Overview

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Read the Rules

WIND TURBINE MATERIALS RECYCLING PRIZE

OFFICIAL PRIZE
RULES

JULY 2023



Official rules for the
Wind Turbine Materials Recycling
Prize are available online.

[Prize HeroX Page](#) → Resources Tab

<https://www.herox.com/wind-turbine-materials-recycling>

Eligibility

The competition is open to the following entities:

- ✓ **Individuals** (legally authorized to work in the United States.)
- ✓ **Private entities** (for-profits and nonprofits)
 - If a lead competitor is a private entity, it must be incorporated in and maintain a primary place of business in the United States.
- ✓ **Nonfederal government entities** (such as states, counties, tribes, and municipalities)
- ✓ **Academic institutions** (based in the United States).

Ineligibility

- Federal entities and federal employees are not eligible to win any prize phases in this program.
- Employees of an organization that co-sponsors this program with the U.S. Department of Energy (DOE) are not eligible to participate in any prize phases in this program.
- Individuals who worked at DOE within 6 months prior to the submission deadline of any phase are not eligible to participate in any prize phases in this program.
 - Additionally, members of their immediate families (i.e., spouses, children, siblings, or parents) and anyone who lives in their household, regardless of relation, are not eligible to participate in the prize.
- Entities cannot propose a concept that is already receiving DOE funding.
- National laboratory employees are not eligible to participate in any prize phase.
- Entities and individuals publicly banned from doing business with the U.S. government, such as entities and individuals debarred, suspended, or otherwise excluded from or ineligible for participating in federal programs, are not eligible to compete.
- Individuals participating in a foreign government talent recruitment program (refer to the prize rules document) sponsored by a country of risk (see the list in the prize rules document) and teams that include such individuals are not eligible to compete.
- Entities owned by, controlled by, or subject to the jurisdiction or direction of a government of a country of risk.

Important Dates

Phase 1 (~2.5-month duration)

- July 12, 2023: Phase 1: Initiate! Launched
- **Sept. 29, 2023: Phase 1: Submission Deadline**
- November 2023: Phase 1 Winners Announced and Phase 2 Begins



Important Dates (Continued)

Phase 2

- **December 2023:** Phase 2: Accelerate! Opens
- **July 2024:** Phase 2 Closes
- **September 2024:** Phase Two Winners Announced



Submission Package

Participants need to submit a:

- Cover Page
- Summary Slide (public)
- 90-Second Video, answering “What is your innovation?” (public)
- Concept Narrative
- Letters of Commitment (optional, will be scored)
- Life Cycle Assessment Data Form (optional, will not be scored)
- Outside the United States Waiver

Required	<input checked="" type="checkbox"/>
Scored	<input checked="" type="checkbox"/>
Public	<input type="checkbox"/>

Cover Page

List basic information about your submission, including:

- Project name
- Innovation tagline (e.g., your mission in a few words)
- Key project members
- Keywords that best describe your solution
- Your city, state, and nine-digit zip code
- Link to public video.

The Cover Page must be uploaded to [HeroX](#) as a PDF file.

Required	<input checked="" type="checkbox"/>
Scored	<input checked="" type="checkbox"/>
Public	<input checked="" type="checkbox"/>

Summary Slide (Public)

This one-slide summary contains technically specific details but can be understood by most people.

There is no template; please present the information as you see fit.

Please make any text readable in a standard printout and on a conference room projection.

Summary Slide must be uploaded to [HeroX](#) as a PowerPoint file.

Required	<input checked="" type="checkbox"/>
Scored	<input checked="" type="checkbox"/>
Public	<input checked="" type="checkbox"/>

90-Second Video (public)



TIP

The content, not the production quality, will be considered for scoring.

Answer “What is your innovation?” Suggested content includes:

- The concept you are developing.
- Why your innovation has potential to be transformational and achieve the Prize goal of developing an economically self-sustaining recycling industry for wind materials.
- Your team, facilities and your ability to safely carry out this project.
- The required information in exciting and interesting ways.

Video file must be posted online (e.g., YouTube, Vimeo).

Required	✓
Scored	✓
Public	✗

Concept Narrative

Must answer four questions:

1. Innovation – What is the innovation and what is its potential to enhance the recyclability of wind energy materials?
2. Potential – Why will your innovation be successful?
3. Accomplishments and Team – What have you done to date, and what qualities give you a competitive edge?
4. Community Benefits Plan (CBP) – What are the goals of the team with respect to each of the three CBP elements (refer to the prize rules document)?

Concept Narrative must be submitted as a PDF file.

The aggregate response must not exceed 2,500 words.



TIP

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

Required	<input type="checkbox"/>
Scored	<input checked="" type="checkbox"/>
Public	<input type="checkbox"/>

Letters of Commitment (Optional)

Attach one-page letters (of support, intent, or commitment) from other relevant entities.

Letters of support from partners or others that are critical to the success of your proposed innovation will likely increase your score.

General letters of support from parties that are not critical to the execution of your solution will likely not factor into your score.

Please do not submit multipage letters.

These must be uploaded to [HeroX](#) as PDF files.

Required	<input checked="" type="checkbox"/>
Scored	<input checked="" type="checkbox"/>
Public	<input checked="" type="checkbox"/>

Life Cycle Assessment Data Form (Optional)

Reference the form in the appendix of the prize rules document.

Will be utilized by national lab experts to perform initial life cycle assessment on the proposed concept.

The results of the life cycle assessment will ***not be assessed*** in either prize phase.

Competitors who receive an award in Phase 1 and choose to submit data will be able to spend 2 hours discussing results with national lab experts.

Competitors may choose to leverage these results in the Phase 2 submission or perform their own using guidance in the prize rules document appendix.

Required	<input checked="" type="checkbox"/>
Scored	<input checked="" type="checkbox"/>
Public	<input type="checkbox"/>

Outside the United States Waiver

Describe the work or sourced material(s) from outside the United States, and justify why this cannot be done inside the United States.

The waiver must be submitted to [HeroX](#) as a PDF file.



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Phase 1

How We Score



Expert Reviewers and Scoring

Scoring

- The reviewers read, score, and comment on the content from each submission based on the following scale.

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

Expert Reviewers and Scoring

Scoring

- The final score from an individual reviewer for a submission package equals the total weighted sum of the scores for all the sections.
- The weighting for Phase 1 *Initiate!* can be found in this table, which is taken from the prize rules.

Section	Weight
Pitch and Demo Video	Not Scored
Narrative Question 1 – Innovation	20%
Narrative Question 2 – Potential	30%
Narrative Question 3 – Accomplishments and Team	20%
Narrative Question 4 – Community Benefits Plan	25%
Reviewer Recommendations	5%

Expert Reviewers and Scoring

Final Determination

- All reviewers' scores are then averaged for a final reviewer score for the submission package.
- The final prize judge considers reviewer scores when deciding the winners.
- DOE, in consultation with the Prize Administrator, considers reviewer scores, program policy factors outlined in Appendix 1 of the prize rules, and interviews (*if applicable*) when selecting Initiate! phase winners.
- DOE is the judge and final decision maker and may elect to award all, none, or some of the prize funds to competitors at each submission deadline.

Program Policy Factors

While scores of the expert reviewers will be carefully considered, it is the role of the Prize Administrator to maximize the impact of prize funds. DOE may need to consider some factors outside the control of competitors and beyond the independent expert reviewer's scope to accomplish this goal. The following is a list of such factors. In addition to the reviewers' scores, these program policy factors may be considered in determining phase competitors:

- Geographic diversity and potential economic impact of projects in various regions.
- Whether the use of additional DOE funds and provided resources are non-duplicative and compatible with the stated goals of this program and the DOE mission generally.
- Whether the project promotes increased coordination with nongovernmental entities for the demonstration of technologies and research applications to facilitate technology transfer.
- The level of industry involvement and demonstrated ability to accelerate commercialization and overcome key market barriers.

The degree to which the submission:

- Exhibits team member diversity and the inclusion of underrepresented groups.
- Exhibits technological or programmatic diversity when compared to the existing DOE project portfolio and other competitors.
- Is likely to lead to increased employment and manufacturing in the United States or provide economic and other benefits to U.S. taxpayers.
- Will accelerate transformational technological, financial, or workforce advances in areas that industry by itself is not likely to undertake because of technical or financial uncertainty.
- Expands DOE's funding to new competitors and recipients that have not been supported by DOE in the past.
- Describes a novel technology, component, or integration that has not been funded by the DOE in the past.
- Enables new and expanding market segments.



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Phase 1

Apply on the HeroX Prize Platform



HeroX Prize Platform

<https://www.herox.com/wind-turbine-materials-recycling>

American-Made Challenges

Wind Turbine Materials Recycling Prize

Developing a cost-effective and sustainable recycling industry for fiber-reinforced composites and rare earth elements in wind turbines

Energy, Environment & Resources Government Technology

Stage: Enter Prize: \$5,100,000

SOLVE THIS CHALLENGE

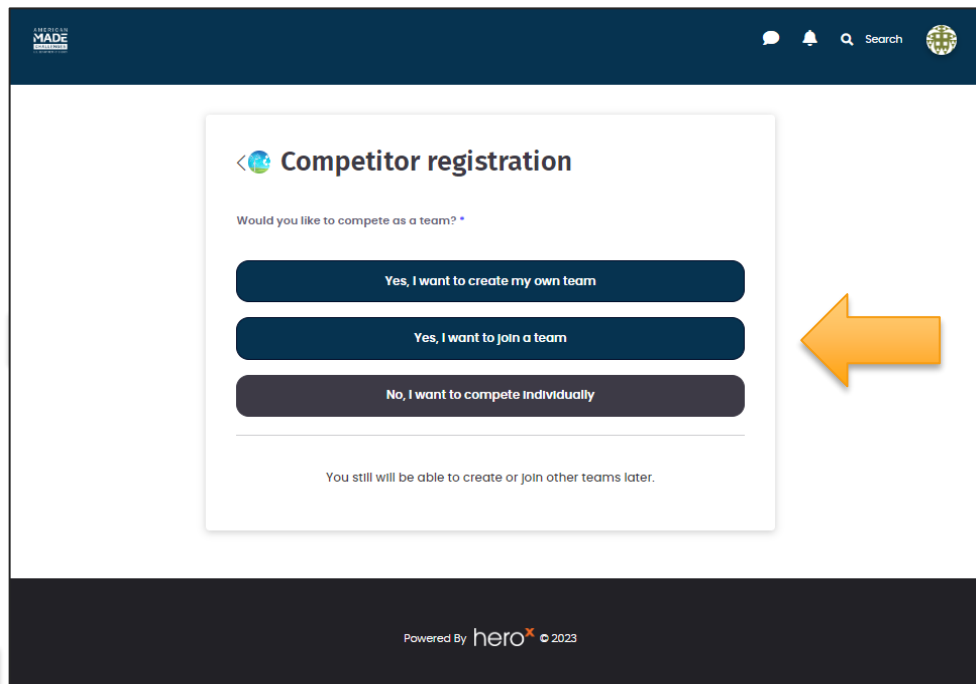
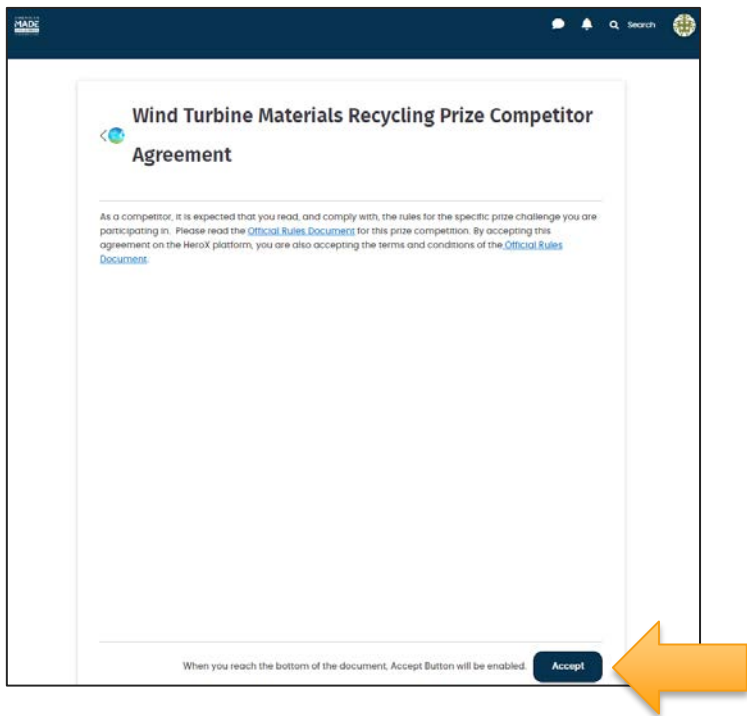
Summary Timeline Updates 1 Forum 2 Teams 16 Resources FAQ

Overview Prize Goals Prize Structure Guidelines

Overview

Wind energy deployment in the United States is projected to see significant growth to meet the nation's decarbonization goals by 2050. As wind turbine manufacturing accelerates, the U.S. Department of Energy (DOE) is proactively considering [the life cycle of wind turbines](#), specifically after they are eventually decommissioned.

HeroX Prize Platform



HeroX Prize Platform

The screenshot displays the HeroX Prize Platform interface for the "American-Made Challenges" section. At the top, the "AMERICAN MADE CHALLENGES" logo is visible on the left, and the challenge title "American-Made Challenges" is centered. On the right, there are icons for "678" views, a "Share" button, and a "Following (15)" button. The main content area features a large banner image on the left with the text "Wind Turbine Materials Recycling Prize" and a graphic of a wind turbine and a recycling symbol. To the right of the banner, the challenge title "Wind Turbine Materials Recycling Prize" is displayed in large, bold text. Below the title, a description reads: "Developing a cost-effective and sustainable recycling industry for fiber-reinforced composites and rare earth elements in wind turbines". Underneath the description are three category tags: "Energy, Environment & Resources", "Government", and "Technology". A table below the categories shows the "Stage: Enter" and "Prize: \$5,100,000". At the bottom of the main content area, there are two prominent buttons: "BEGIN ENTRY" and "JOIN A TEAM". A large orange arrow points from the "BEGIN ENTRY" button towards the navigation tabs. The navigation tabs at the bottom include "Summary", "Timeline", "Updates" (with a blue circle containing the number "1"), "Forum" (with a blue circle containing the number "2"), "Teams" (with a blue circle containing the number "15"), "Resources", and "FAQ". Below these tabs, a secondary navigation bar contains links for "Overview", "Prize Goals", "Prize Structure", and "Guidelines".



next steps

What's Next?

1. Follow the challenge on HeroX Prize Platform

<https://www.herox.com/wind-turbine-materials-recycling>

2. Read the rules:

HeroX → Resources Tab

3. Start innovating!

4. Apply by **Sept. 29, 2023.**

Looking for Application Support?

Submit application questions to

WindTurbineMaterialsRecycling.Prize@nrel.gov.

You may receive a response and support from Power Connectors.



Matt Paul

<https://adlventures.com/>



Hongyi Zhang

<https://yet2.com>



thank you

NREL/PR-6A50-87108