

#### A M E R I C A N MADE U.S. DEPARTMENT OF ENERGY

# **Energy Storage Innovations Prize Round 2**



# Energy Storage Innovations Prize Round 2 Official Prize Rules

NOVEMBER 2024

# Preface

The U.S. Department of Energy's Energy Storage Innovations Prize Round 2 will be governed by 15 U.S.C. § 3719 and this Official Rules document. This is not a procurement under the Federal Acquisitions Regulation and will not result in a grant or cooperative agreement under 2 C.F.R. Part 200. The Prize Administrator reserves the right to modify this Official Rules document if necessary and will publicly post any such notifications and notify registered prize participants. Prize Administrator means the Alliance for Sustainable Energy operating in its capacity under the Management and Operating Contract for the National Renewable Energy Laboratory (NREL). Ultimate decision-making authority regarding prize matters rests with the Deputy Assistant Secretary for the Energy Storage Division in the U.S. Department of Energy Office of Electricity.

The following table describes changes that may be implemented in this rules document.

Date	Modification

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# **1** Executive Summary

The Energy Storage Innovations Prize (Prize) Round 2 is a call for new, innovative, and promising energy storage solutions to address niche markets and to grow a community of innovators. The Prize places a focus on less conventional use cases (e.g., remote and/or underserved communities, extreme climates) and innovative (less mature) energy storage technology solutions, across all duration scales, to advance the market landscape. The Energy Storage Innovations Prize Round 2 aims to gain insights on innovative, emerging, and next-generation energy storage solutions that address niche markets and inform the U.S. Department of Energy's (DOE) strategy on transformative storage technologies to accelerate grid modernization for all consumers, while achieving needed reliability, affordability, and energy security. This competition focuses only on innovative energy storage solutions for less conventional use cases. Conventional use cases are not of interest for this prize. See Prize Scope and Goals (Section 3.1) and Solutions of Interest (Section 3.6) for detailed descriptions and further explanation.

The Energy Storage Innovations Prize Round 2 offers a total prize pool of \$300,000 in cash prizes. There will be up to 10 winners total, with up to five Storage Innovations Round 2 Champion winners receiving \$50,000 each and up to five Storage Innovations Round 2 Finalist winners receiving \$10,000 each. The Prize awards cash prizes to winning individuals or organizations who provide a technical overview of their new ideas that will help inform DOE's strategy on enabling energy storage technology innovations. Competitors will propose their innovative energy storage solution for a less conventional use case with a 3,000-word technical concept paper, a 500-word description of the team's background, a benefit-cost analysis, an accompanying 90-second video uploaded to a video streaming platform (e.g. YouTube, Vimeo), and a summary slide (see Section 4.24.2.5). DOE will not retain any intellectual property from submissions as part of this prize competition except the rights necessary to administrate this prize competition and a license to display and use public parts of the submission for government purposes as specified in the Appendix. Submissions will be judged on how innovative the solution is, the strength of the plan, and other unique benefits including equity, supply chain considerations, and other factors (see Section 5). Winners will participate in a promotional showcase video created by DOE after awards are provided and may be invited to engage in other future DOE activities (see Section 6.3).

With continued growth across the energy storage sector, both in terms of technology innovations and expanding application opportunities, some less conventional use cases can create niche applications for energy storage. In some cases, these niche applications may require new, transformative approaches to providing needed energy storage. Recognizing the research opportunities that arise through such innovative solutions not only helps develop the skill sets and work environments needed to support these niche markets, but also helps improve the technology solution's competitiveness more broadly and expand the diversity of available energy storage technologies to meet the needs of American consumers, including less conventional use cases.

# 2 Background

The energy system has become increasingly complicated with the proliferation of renewable generation and demand for grid flexibility services. Energy storage has an important role to play as we reevaluate and reengineer how we ensure reliability, resiliency, security, and affordability in this increasingly complex and dynamic environment. DOE is working to advance energy storage technologies for both large- ( $\geq$ 1-MW) and small- (<1-MW) scale applications, and to meet different temporal needs (e.g., short-, medium-, and long-duration).

In January 2020, DOE established the Energy Storage Grand Challenge (ESGC)<sup>1</sup> to accelerate the state of the art in energy storage technologies and establish the United States as the global leader in energy storage development, commercialization, and utilization. DOE has supported over 30 distinct energy storage technologies, including specific methods of storage via electrochemical, electromechanical, thermal, flexible generation, and controllable loads, as well as power electronics.

DOE recognizes the importance of accessible, cost-effective energy storage in the energy transition for our grid and the need to identify and unlock the potential of diverse energy storage use cases to meet the needs of all Americans. Examples of use cases can be found in the 2020 ESGC Roadmap (Table 1 in the Roadmap)<sup>2</sup> and the 2020 ESGC Market Report (Table 2 in the Report).<sup>3</sup> With continued growth across the energy storage sector, both in terms of technology innovations and expanding application opportunities, some less conventional use cases can create niche applications for energy storage. In some cases, these niche applications may require new, transformative approaches to providing needed energy storage.

In 2022, DOE opened the first American-Made Energy Storage Innovations Prize<sup>4</sup> ("Round 1") seeking next-generation energy storage technologies to accelerate grid decarbonization. DOE launched the Round 1 prize to help illustrate nascent and emerging technologies within the energy storage landscape. Building on the success of the Round 1 prize, the DOE Office of Electricity (OE) is launching a second Energy Storage Innovations Prize ("Round 2") with a focus on less conventional use cases (e.g., remote and/or underserved communities, extreme climates) and innovative (less mature) energy storage technology solutions, across all duration scales, to advance the market landscape.

The Energy Storage Innovations Prize Round 2 is part of the American-Made Challenges program, funded by DOE and administered by the National Renewable Energy Laboratory (NREL). The American-Made Challenges program includes prizes, training, teaming, and mentoring to accelerate solutions by lowering the barriers faced by innovators. The goal of this program is to fast-track product development—reducing timelines from years to months, speed innovator progress, and create partnerships that connect entrepreneurs to the private sector and DOE national laboratories.

DOE is committed to investing in innovations that deliver benefits to the American public and lead to commercialization of technologies and products that foster sustainable, resilient, and equitable access to energy. Further, DOE is committed to supporting the development of more diverse, equitable, inclusive, and accessible workplaces to help maintain the Nation's leadership in energy storage technology innovation. Recognizing the research opportunities that arise through such innovative solutions not only helps develop the skillsets and work environments needed to support these niche markets, but also helps improve the technology solution's competitiveness more broadly and expand the diversity of available energy storage technologies to meet the needs of

<sup>&</sup>lt;sup>1</sup> https://www.energy.gov/energy-storage-grand-challenge/energy-storage-grand-challenge

<sup>&</sup>lt;sup>2</sup> https://www.energy.gov/sites/default/files/2020/12/f81/Energy%20Storage%20Grand%20Challenge%20Roadmap.pdf

<sup>&</sup>lt;sup>3</sup> https://www.energy.gov/sites/prod/files/2020/12/f81/Energy%20Storage%20Market%20Report%202020\_0.pdf

<sup>&</sup>lt;sup>4</sup> <u>https://www.herox.com/storageinnovations</u>

American consumers, including less conventional use cases.

# **3 Overview of Prize**

### 3.1 Prize Scope and Goals

The Energy Storage Innovations Prize Round 2 is a call for new, innovative, and promising energy storage solutions which address niche markets and to grow a community of innovators. The Prize focuses on less conventional use cases (e.g., remote and/or underserved communities, extreme climates) and innovative (less mature) energy storage technology solutions, across all duration scales, to advance the market landscape. The Prize aims to gain insights on niche markets and inform DOE's strategy on transformative energy storage technologies to accelerate grid modernization for all consumers, while achieving needed reliability, affordability, and energy security. Conventional use cases are not of interest for this prize. The subsections that follow provide additional details and further information about the Prize.

#### 3.2 Prize Award Pool

The Round 2 prize offers a total prize pool of \$300,000 in cash prizes. As described in Table 1 below, there will be up to 10 winners total, with up to five Round 2 Champion winners receiving \$50,000 each and up to five Round 2 Finalist winners receiving \$10,000 each, in addition to the winning teams and their innovations being featured by DOE on the DOE website and in other DOE highlights (e.g., news items, meeting discussions). Winners will be required to participate in a promotional showcase video created by DOE after awards are provided (see Section 6.3). Winners may also be invited to engage in other future DOE activities. The prize money is cash with no restrictions on its use. Winners will be announced publicly.

#### Table 1. Winners and Prizes

	Winners		Prizes
• Up Ch	to 5 "Storage Innovations Round 2 ampion" Winners	•	\$50,000 each (\$250,000 total prize pool)
• Up Fin	to 5 "Storage Innovations Round 2 alist" Winners	•	\$10,000 each (\$50,000 total prize pool)

#### 3.3 Process Overview

The Prize process comprises four stages from submission through award and the development of a promotional video by DOE with the winning teams. As a precursor to submission, competitors must register for access to the HeroX platform (see Section 4.1).

The Round 2 prize consists of the following steps:

- 1. **Submission** Competitors complete their submission packages and submit online through HeroX before the submission deadline. For more information about submission requirements, see Section 4.
- 2. Eligibility Screening and Submission Review The Prize Administrator screens submissions for competitor eligibility. Eligible submissions will be reviewed based on the Reviewer Scoring Rubric. For more information about the review process, see Section 5.
- 3. Selection and Announcement Prize winners will be selected by DOE and announcements will be coordinated by the Prize Administrator. For more information about selection and announcement, see Section 6.

4. **Promotional Video** – Winners will be required to participate in a promotional showcase video created by DOE after awards are distributed. For more information about the promotional video, see Section 6.3.

## 3.4 HeroX Prize Page

Competitors can follow this challenge from the HeroX Energy Storage Innovations Prize Round 2 Page: <u>https://www.herox.com/storageinnovationsround2</u>.

### 3.5 Key Dates

Refer to the timeline on the HeroX Prize Page for relevant dates.

### **3.6 Solutions of Interest**

The Round 2 Prize aims to gain insights into innovative, emerging, and next-generation energy storage solutions that address niche markets and inform DOE's strategy on transformative energy storage technologies to accelerate grid modernization for all consumers, while achieving needed reliability, affordability, and energy security. The Prize places a focus on less conventional use cases (e.g., remote and/or underserved communities, extreme climates) and innovative (less mature) energy storage technology solutions, across all duration scales, to advance the market landscape.

DOE is not providing a list of less conventional use cases that are eligible for this prize. **The prize submission must demonstrate that the use case is less conventional** and clearly differentiate how the innovative technology solution solves a problem for a market, community, sector, or other group that is significantly different from conventional applications of that technology. Examples of conventional use cases include applications of energy storage technologies that, as of the date of this Prize announcement, are commonly deployed in the U.S.; have been deployed under commercial terms without project-specific or other research and development-type support (e.g., not as a demonstration or pilot); would derive value solely from currently available market or regulatory mechanisms (e.g., established market without the opportunity to expand into other application-technology solutions).

The energy storage technologies eligible for consideration in a solution are not limited but must discharge electricity. The table below lists examples of eligible energy storage technologies. **However, other technologies beyond those listed are also of interest.** 

Туре	Technology
Other	Other technologies beyond those listed below are also of interest
	Lithium-ion
	Redox flow
	Lead-acid
	Sodium-ion
Flootrophomioal	Zinc-ion
Electrochemical	Lithium-metal
	Sodium-metal
	Other metals (e.g., magnesium, aluminum)
	Reversible fuel cells
	Supercapacitors
	Liquid air energy storage
	Flywheels
Flootromochanical	Geomechanical
Electromechanical	Pumped storage hydropower
	Compressed-air energy storage
	Gravitational
	Phase change
Thermal	Low-temperature storage
mermai	High-temperature sensible heat
	Thermal-photovoltaic
Chemical	Chemical carriers (e.g., ammonia)
Chemical	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
I IEVINIE BEITELOUI	Behind-the-meter hybrids

Table 2. Non-Exhaustive List of Example Energy Storage Technologies

#### 3.7 Benefit-Cost Analysis

This Prize requires competitors to submit a benefit-cost analysis (BCA) of their energy storage solution. BCA (also known as cost-benefit analysis, or CBA) is an analytical tool that can be used to compare the benefits and costs of policies, programs, and investments to support decisions in the energy sector. A comprehensive BCA identifies, quantifies, and compares the expected benefits and costs of an initiative or project over the lifetime of the initiative or project. The dollar value of benefits and costs can be estimated as the net present value (NPV) after considering the lifetime of the project and choosing an appropriate discount rate. Estimates for the NPV can be calculated using a variety of methods and sources, including the results of distributions of a parameter that changes over time, probabilistic statistical techniques, model outputs, demonstration studies, and research findings in the literature.

A variety of benefits and costs can be considered, and it is up to the competitor to describe and

explain their reasoning for what they choose to include and exclude. Because determining a point estimate for values can be challenging, competitors can design a BCA to report a range of potential benefits and costs. BCAs for engineering projects typically include technical and engineering benefits and costs but can also include benefits and costs related to economic, social, environmental, public health, Tribal, community, and environmental justice factors. A BCA may also include a qualitative discussion of benefits and costs that are difficult to quantify. Competitors are expected to address any qualitative discussion of benefits and costs in their technical concept paper submission. To assist competitors, a sample BCA template has been made available to illustrate the types of information needed to evaluate the BCA. See Section 4.2.4 for more information about submitting the BCA.

## **3.8 Eligibility and Competitors**

The competition is open to individuals, academia, non-federal government entities, small businesses, start-ups, entrepreneurs, and other inventors who are working on nascent or emerging energy storage innovations that address less conventional use cases (e.g., remote and/or underserved communities, extreme climates). Competitors may be individuals or teams. DOE encourages all teams to consider diversity, equity, and inclusion initiatives and applications as they form their teams and submissions.

In keeping with the goal of growing a community of innovators, competitors are encouraged to form multidisciplinary teams while developing their concept. The HeroX platform provides a space where parties interested in collaboration can post information about themselves and learn about others who are also interested in competing in this contest.

#### Competitors are subject to the following requirements:

- An individual prize competitor or a team may only submit a single submission.
- An individual prize competitor (who is not competing as a member of a group) must be a U.S. citizen or permanent resident.
- A group of individuals competing as one team may win, provided that the online account holder of the submission is a U.S. citizen or permanent resident.
- Private entities must be incorporated in and maintain a primary place of business in the U.S.
- Academic institutions must be based in the U.S.

#### **Competitor Restrictions:**

- DOE employees, employees of sponsoring organizations, DOE support service contractors, members of their immediate families (e.g., spouses, children, siblings, or parents), and persons living in the same household as such persons, whether or not related, are not eligible to participate in the prize.
- Individuals who worked at DOE (federal employees or support service contractors) within six months prior to the submission deadline of this contest are not eligible to participate in this competition.
- Federal entities and federal employees are not eligible to compete in the prize.
- Former federal employees should ensure that their participation complies with the postgovernment employment rules. Please contact the appropriate general counsel's office with

any questions.

- DOE national laboratory employees cannot compete in the prize.
- Entities and individuals 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<sup>5</sup> sponsored by a country of risk<sup>6</sup> and teams that include such individuals are not eligible to compete.<sup>7</sup>
- Entities owned by, controlled by, or subject to the jurisdiction or direction of a government of a country of risk are not eligible to compete.

Additionally, to be eligible, an individual authorized to represent the competitor must agree to and sign the following statement upon registration with HeroX:

I am providing this submission package as part of my participation in this prize. I understand that the information contained in this submission will be relied on by the federal government to determine whether to issue a prize to the named competitor. I certify under penalty of perjury that the named competitor meets the eligibility requirements for this prize competition and complies with all other rules contained in the Official Rules document. I further represent that the information contained in the submission is true and contains no misrepresentations. I understand false statements or misrepresentations to the federal government may result in civil and/or criminal penalties under 18 U.S.C. § 1001 and § 287, and 31 U.S.C. §§ 3729-3733 and 3801-3812.

## 3.9 Intellectual Property

DOE will not retain any intellectual property from submissions as part of this prize competition except the rights necessary to administrate this prize competition and a license to display and use public parts of the submission for government purposes as specified in the Appendix. All prize judges and reviewers sign nondisclosure and conflict of interest agreements (NDA/COI) ahead of reviewing any submitted materials. See Appendix A.4 for additional submission rights.

## 3.10 Find Help – The American-Made Network

The American-Made Network cultivates resources and builds connections that enhance, accelerate, and amplify competitors' efforts. The Network links participants with the people, resources, financing, perspectives, and industry expertise necessary for long-term success. The Network comprises the following elements:

<sup>&</sup>lt;sup>5</sup> Foreign Government-Sponsored Talent Recruitment Program is defined as an effort directly or indirectly organized, managed, or funded by a foreign government, or a foreign government instrumentality or entity, to recruit science and technology professionals or students (regardless of citizenship or national origin, or whether having a full-time or part-time position). Some foreign government-sponsored talent recruitment programs operate with the intent to import or otherwise acquire from abroad, sometimes through illicit means, proprietary technology or software, unpublished data and methods, and intellectual property to further the military modernization goals and/or economic goals of a foreign government. Many, but not all, programs aim to incentivize the targeted individual to relocate physically to the foreign state for the above purpose. Some programs allow for or encourage continued employment at United States research facilities or receipt of federal research funds while concurrently working at and/or receiving compensation from a foreign institution, and some direct participants not to disclose their participation to U.S. entities. Compensation could take many forms including cash, research funding, complimentary foreign travel, honorific titles, career advancement opportunities, promised future compensation, or other types of remuneration or consideration, including in-kind compensation.

<sup>&</sup>lt;sup>6</sup> DOE has designated the following countries as foreign countries of risk: Iran, North Korea, Russia, and China. This list is subject to change.

<sup>&</sup>lt;sup>7</sup> See 42 U.S.C.A. § 19231; Office of Science and Technology Policy Memorandum for the Heads of Federal Research Agencies, Guidelines for Federal Research Agencies Regarding Foreign Talent Recruit Programs (Feb. 14, 2024), available at <a href="https://www.whitehouse.gov/wp-content/uploads/2024/02/OSTP-Foreign-Talent-Recruitment-Program-Guidelines.pdf">https://www.whitehouse.gov/wp-content/uploads/2024/02/OSTP-Foreign-Talent-Recruitment-Program-Guidelines.pdf</a>.

- 1. **Prize and Network Administrator**: As the Prize Administrator, NREL will host a Prize informational webinar, monitor the Prize HeroX forum page, and be available to competitors through the Prize email.
- 2. **Power Connectors**: Power Connectors are organizations who play a more substantial role in the competition and receive funds to expand and amplify DOE and NREL's efforts. They are deeply involved with prize program execution, recruitment, and support. These organizations are contracted by NREL to perform a variety of tasks for specific prizes that advance program successes, including extending the reach and improving the diversity and inclusivity of the Network overall.

# **4** Submission Process

### 4.1 How To Enter the Competition: HeroX Registration

Competitors must be registered on the HeroX platform to submit their solutions.<sup>8</sup> All required materials must be submitted through the HeroX platform before the submission deadline. All submissions are final once submitted. If a competitor makes multiple submissions, only the most recent submission before the deadline will be reviewed as the final submission. No changes may be made to a submitted submission. The Prize Administrator, when feasible, may give competitors an opportunity to fix non-substantive mistakes or errors in their submission packages. See Appendix A.1 and Appendix A.4 for more details.

### 4.2 What To Submit

A complete submission package must include the following elements described in Section 4.2.1 through 4.2.6. The list below identifies the file types for each submission component:

- PDF document #1:
  - Cover page (Section 4.2.1)
  - Competitor background (Section 4.2.2)
  - Technical concept paper (Section 4.2.3)
  - Full URL to 90-second video (public) (Section 4.2.6)
- Microsoft Excel (.xls or .xlsx) document: Completed Benefit-Cost Analysis (BCA) Worksheet (Section 4.2.4)
- PDF document #2: Summary slide (public) (Section 4.2.5)

To assist competitors, DOE is providing sample templates to illustrate the types of information needed to evaluate whether competitors meet minimum requirements in the associated critical success factors. Competitors are not required to use these templates and may submit using any document layout of their choosing, consistent with the file formats prescribed by this subsection and any confidentiality markings as denoted in Appendix A.4. If a competitor's submission includes confidential information, the competitors must submit two versions of the Technical Concept Paper and the BCA Worksheet, consistent with the guidance in Appendix A.4. All submissions should address the substantive measures outlined in the templates and described in this Rules document.

#### 4.2.1 Cover Page Content

List basic information about your submission, consistent with the guidance below, including:

- Project title
- Individual competitor or team name
- Short project description (3 sentences maximum)
- Full URL to 90-second video
- Project member(s) (names, contacts, affiliations, and links to their professional online

<sup>8 &</sup>lt;u>https://www.herox.com/storageinnovationsround2</u>

profiles)

- Other partners, if any, such as advisors (names, contacts, affiliations, and links to their professional online profiles)
- Individual competitor's or team's city, state, and nine-digit ZIP/area code
- Word Count of Competitor Background (500 words maximum including headers but not including the cover page, captions, tables, figures/graphs, and references)
- Word Count of Technical Concept Paper (3,000 words maximum including headers but not including the cover page, captions, tables, figures/graphs, and references)
- Number of tables and figures/graphs (Up to 5 allowed across both the Team Background and Technical Concept Paper sections)

To assist competitors, a sample cover page template has been provided (<u>submission template</u><sup>9</sup>) consistent with the above-listed guidance.

#### 4.2.2 Competitor Background

This section should provide reviewers with information about the individual competitor's or the team's familiarity and experience with similar projects and provide context about their organization and what resources were available. The aggregate response to this section **must not exceed 500 words** including section headers, but not including the captions, tables, and figures/graphs. You must include **a word count for this section** on the Cover Page. Including the contents of the Technical Concept section, you may include **up to five supporting images, tables, or figures/graphs**. DOE encourages all teams to consider diversity, equity, and inclusion initiatives and applications as they form their teams and submissions; however, this will not be scored in the submission review.

#### Suggested content:

- Describe the individual competitor's or team's relevant background.
- Highlight relevant past experiences with projects similar to this prize.
- Provide information about the individual competitor's or team's organization(s).
- Identify resources available to support the proposed technology solution.

#### 4.2.3 Technical Concept Paper

The Technical Concept Paper should answer each of the four questions listed below. If a competitor's submission includes confidential information, the competitors must submit two versions of the Technical Concept Paper and the BCA Worksheet, consistent with the guidance in Appendix A.4. The content bullets below are suggestions to guide responses. Competitors may decide how to focus their answers. The individual answers to the questions do not have a word limit; however, the aggregate response to these questions, including section headers, must not exceed 3,000 words, not including captions, tables, figures/graphs, or references. A word count for this section must be included on the Cover Page. The Technical Concept Paper may include up to five supporting images, tables, or figures/graphs, including the contents of the Competitor Background section. To assist competitors, a sample technical concept paper template has been provided (submission template) consistent with the below-listed questions and suggested content.

<sup>&</sup>lt;sup>9</sup> <u>https://www.herox.com/storageinnovationsround2/resource/2117</u>

#### Question 1: What is your innovative solution and its less conventional use case?

#### Suggested content:

- A thorough technical description of the energy storage problem/opportunity, the use case, and the solution.
- A description of how the solution addresses a less conventional use case and a characterization of the market, community, sector, or other group that the solution addresses.
- A description of the technology and use case(s) with detailed diagrams and schematics, as appropriate.
- Details such as required operational characteristics, devices, power ratings, project lifetime, information and performance data from previous simulations, lab-scale tests, or demonstrations.

**Question 2**: What are the expected benefits and costs of your solution and how does your solution support DOE's goals for providing affordable, equitable, resilient, and reliable energy or other DOE priorities (e.g., sustainable domestic supply chain)?

#### Suggested content:

- A discussion of the benefits and the costs of your energy storage solution over the lifetime of the solution.
- Social, economic, and technical considerations including a levelized cost of storage (LCOS) estimation. For more information on LCOS calculation, please reference the LCOS methodology from DOE's Advanced Research Projects Agency–Energy (ARPA-E).<sup>10</sup>
- An estimate of the total addressable market for your solution.
- Discussion of the overall approach to determining benefits and costs.
- Discussion of any qualitative benefits and costs for which you are unable to estimate dollar values.
- A description of your solution's value proposition and other benefits and how they align with DOE priorities.

**Question 3**: What challenges are associated with the development and execution of your solution?

#### Suggested Content:

- Analysis of technical, social, policy, and other barriers and challenges.
- Proposed activities including additional research, development, and demonstration (RD&D) to address the challenges.
- Description of key risks related to the development and execution of your solution, along with approaches to mitigate the risk.

*Question 4*: How would you further develop or commercialize your solution?

<sup>&</sup>lt;sup>10</sup> <u>https://arpa-e.energy.gov/sites/default/files/documents/files/DAYS\_ProgramOverview\_FINAL.pdf</u>

#### Suggested Content:

- Highlight how anticipated next steps will build upon progress made so far.
- Description of the types of project partners needed to continue technology development and demonstration.
- Highlight how additional investment would help further development.

#### 4.2.4 Benefit-Cost Analysis (BCA) Worksheet

Submit a completed BCA of your energy storage solution to organize the detailed benefits and costs of your energy storage solution over the solution's lifetime. Because a competitor BCA worksheet is likely to contain confidential information, competitors should submit two copies of the BCA Worksheet, with one copy being completely redacted and the second copy protected with the appropriate confidentiality markings (see Appendix A.4). The file format must be a Microsoft Excel document (.xls or .xlsx). To assist competitors, two sample BCA templates have been included (non-confidential BCA submission template<sup>11</sup>, confidential BCA submission template<sup>12</sup>) to illustrate the types of information needed to evaluate the BCA and how to protect them. The contents of the BCA Worksheet must be accessible to the reviewers to evaluate (e.g., any protections applied should not impede the reviewers from evaluating the approach and following the calculations using any Microsoft Excel formulas).

Prize submissions will not necessarily be scored negatively if costs outweigh benefits. Rather, each competitor's approach and reasoning will be evaluated. Competitors should use positive NPVs for benefits, negative NPVs for costs, and provide clear and complete details so reviewers can easily follow their method and reasoning. Competitors may use, with appropriate citations, the results of models, demonstrations, or studies from the literature to inform their analysis. Competitors should discuss their overall approach to determining benefits and costs in the Technical Concept Paper as part of the prize submission. Competitors should also use the Technical Concept Paper to discuss any qualitative benefits and costs for which they were unable to estimate dollar values.

Competitors are welcome to use any resource to aid them in completing the BCA. This includes the BCA resource for storage projects created by the Electric Power Research Institute (EPRI): *Guidebook for Cost/Benefit Analysis of Smart Grid Demonstration Projects*.<sup>13</sup> For more information on LCOS calculations, please reference the LCOS methodology from DOE's ARPA-E.<sup>14</sup> Competitors must include citations for all resources they use.

#### Suggested content:

- Provide estimates of the NPVs of engineering and technical benefits and costs over the lifetime of the solution with positive dollar values for benefits and negative dollar values for costs.
- Provide estimates of the NPVs of benefits and costs that may be difficult to quantify (e.g., economic and social impacts, public health impacts, environmental justice impacts, community and Tribal considerations).
- Provide clear and complete details for assumptions and calculations for all included benefit and cost estimates.

<sup>&</sup>lt;sup>11</sup> <u>https://www.herox.com/storageinnovationsround2/resource/2116</u>

<sup>&</sup>lt;sup>12</sup> <u>https://www.herox.com/storageinnovationsround2/resource/2115</u>

<sup>&</sup>lt;sup>13</sup> https://www.energy.gov/sites/prod/files/2017/01/f34/Guidebook-Cost-Benefit-Analysis-Smart-Grid-Demonstration-Projects.pdf

<sup>&</sup>lt;sup>14</sup> https://arpa-e.energy.gov/sites/default/files/documents/files/DAYS\_ProgramOverview\_FINAL.pdf

- Document intermediate analysis/equations/calculation steps (e.g., the average of upper and lower bounds of a given parameter, the levelized cost of storage (LCOS), probability distribution functions, or other statistical techniques) and variables (e.g., discount rate, project lifetime, or total addressable market).
- Include citations to all resources used.

### 4.2.5 Summary Slide (Will Be Made Public) (Not Scored)

Develop and submit a public-facing, one-slide submission summary that introduces the individual or team competitor and/or organization and mission. There is no template, so competitors are free to present the information in any layout. Any text must be readable on a standard printed page and a conference room projection and should be at least 14-point font. The summary slide is a required element of the submission but will not be scored individually. However, the summary slide will be taken into account during submission reviews.

### 4.2.6 Introduction Video (Public) (Not Scored)

Post your publicly-accessible video to an online video streaming platform (e.g., YouTube, Vimeo) and include a link (showing the full URL) to your video in the Technical Concept Paper. Be creative and produce a video that conveys an overview of your solution and the project team/individual in exciting and interesting ways to the reviewers and the public. Assistance from others with experience in this area may be helpful. Members of the American-Made Network may be able to help you create your video.<sup>15</sup> The video is a required element of the submission but will not be scored individually. However, the video will be taken into account during submission reviews.

#### Suggested content:

- Describe your solution, including the energy storage use case and why it is less conventional.
- Identify the market, community, sector, or other group your solution will impact.
- Indicate who you are (your organization and key team members) and why you have a competitive edge.

### 4.3 Other Submission Requirements

#### 4.3.1 Relevance to the U.S. Energy Storage Sector

The Prize Administrator must conclude that all the following statements are true when applied to your submission:

- The proposed solution is related to the energy storage industry.
- The majority of activities that are described in and support the submission package are performed in the U.S. and have the potential to benefit U.S. markets.
- The proposed solution does not involve the lobbying of any federal, state, or local government office.
- The proposed solution is based on fundamental technical principles and is consistent with a

<sup>&</sup>lt;sup>15</sup> The American-Made Network is a group of public and private sector entities recruited by NREL to provide mentoring, tools, resources, and support to accelerate the transition of clean energy ideas into real-world solutions. Members may make themselves available to help competitors develop their videos for this prize. Visit <u>https://network.americanmadechallenges.org/</u> for more info.

basic understanding of the U.S. market economy.

• The proposed solution is based on the innovative application of energy storage technologies for less conventional or niche use cases.

#### 4.3.2 Additional Terms and Conditions

Please read and comply with all terms and conditions in the Appendix. **COMPETITORS WHO DO NOT COMPLY WITH THESE REQUIREMENTS MAY BE DISQUALIFIED.** 

# **5 Review Process**

The Prize Administrator screens all completed submissions and ensures that the competitors are eligible. Then the Prize Administrator, in consultation with DOE, assigns subject-matter expert reviewers to independently score the content of each submission. At DOE's request, the Prize Administrator may facilitate interviews of specific competitors to clarify potential questions reviewers have and to help reviewers better understand submissions. Participating in interviews is not required, and **an interview request is not a favorable indication of a competitor's likelihood of winning**. The Prize Administrator will provide DOE with the reviewer scores and feedback. DOE's designated federal employee, who will act as the DOE judge and final selecting official, will use this information for the final determination of the winners.

The following subsections provide additional details about the reviewer criteria and scoring rubric, potential interviews, and final determination.

#### **5.1 Submission Scoring**

The scoring of submissions will proceed as follows:

- 1. Reviewers will review each submission individually, assess the response from the competitor in each section of the rubric (see Section 5.2), and assign criteria scores as part of the reviewer recommendation.
- 2. Where applicable, reviewers will score each section of the rubric on a scale of 0 (non-responsive) to 6 (strongly agree), depending on the degree to which the reviewer agrees that the submission reflects the statements for consideration.
- 3. For each reviewer, each section score will be summed together to generate a total score for the submission.
- 4. The total scores from all reviewers will be averaged to produce a final score for each competitor. This score will inform the DOE judge's decisions on prize awards.

## 5.2 Reviewer Criteria and Scoring Rubric

The reviewers will be comprised of federal and non-federal subject-matter experts in areas relevant to the competition. The reviewers will broadly assess the following criteria through a scoring rubric:

- **Problem-Solution Fit** Develop an innovative energy storage solution for a less conventional use case that addresses niche markets and informs DOE's strategy on transformative energy storage technologies to accelerate grid modernization for all consumers, while achieving needed reliability, affordability, and energy security.
- **Benefit-cost analysis** Perform a rigorous benefit-cost analysis and validate that the proposed solution addresses a real-world problem and is technically and economically feasible.
- **Competitor Capabilities** Individual competitors or competitor teams must be committed to accomplishing the stated goals of the proposed solution and are qualified to do so.
- **Future Development** Thoroughly analyze the challenges associated with the development and execution of your solution. Additionally, highlight the commercialization steps and partnership types needed to successfully commercialize your innovation.

Table 3 below contains the scoring rubric for reviewers. Reviewers will evaluate submissions by assigning a single score for each scored criterion, as described in the Table 4.

Table 3. Scoring Rubric for Reviewer	s of Prize Submission Packages
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0	1	2	3	4	5	6
Non- Responsive	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

Table 4. Scoring Criteria for Reviewers of Prize Submission Packages

Required, but not a scored component.         Competitor Background (see Section 4.2.2)         Reviewers provide a single score on a scale of 0 - 6:         The competitor's background clearly describes and demonstrates that the competitor has sufficient experience relevant to their solution.         Technical Concept Paper (see Section 4.2.3)         Solution Description: What is your innovative solution and less conventional use case?         Reviewers provide two scores, each on a scale of 0 - 6:         • Score #1: The technical description clearly explains how the energy storage use case and solution works or is intended to work, including technical feasibility backed up with robust tests/demonstrations/simulations.         • Score #2: The solution described is an innovative and compelling solution for a less conventional use case.         Solution Analysis: What are the expected benefits and costs of your solution and how does your solution support DOE's goals for providing affordable, equitable, resilient, and reliable energy or other DOE priorities (e.g., sustainable supply chain)?         Reviewers provide two scores, each on a scale of 0 - 6:         • Score #1: Based on the included descriptions, calculations, and projections, the benefits and costs of the solution have been comprehensively considered and characterized for a plausible market.         • Score #2: The technology clearly and robustly benefits DOE priorities such as creating a sustainable supply chain, providing energy equity, and enhancing resilience and reliability.		Cover Page (see Section 4.2.1)	
Competitor Background (see Section 4.2.2)         Reviewers provide a single score on a scale of 0 – 6:         The competitor's background clearly describes and demonstrates that the competitor has sufficient experience relevant to their solution.         Technical Concept Paper (see Section 4.2.3)         Solution Description: What is your innovative solution and less conventional use case?         Reviewers provide two scores, each on a scale of 0 – 6:         Score #1: The technical description clearly explains how the energy storage use case and solution works or is intended to work, including technical feasibility backed up with robust tests/demonstrations/simulations.         Score #2: The solution described is an innovative and compelling solution for a less conventional use case.         Solution Analysis: What are the expected benefits and costs of your solution and how does your solution support DOE's goals for providing affordable, equitable, resilient, and reliable energy or other DOE priorities (e.g., sustainable supply chain)?         Reviewers provide two scores, each on a scale of 0 – 6:         Score #1: Based on the included descriptions, calculations, and projections, the benefits and costs of your solution and how does your solution support DOE's goals for providing affordable, equitable, resilient, and reliable energy or other DOE priorities (e.g., sustainable supply chain)?         Reviewers provide two scores, each on a scale of 0 – 6: <td and="" been="" char<="" comprehensively="" considered="" costs="" have="" of="" solution="" td="" the=""><td>Require</td><td>ed, but not a scored component.</td></td>	<td>Require</td> <td>ed, but not a scored component.</td>	Require	ed, but not a scored component.
<ul> <li>Reviewers provide a single score on a scale of 0 - 6:         <ul> <li>The competitor's background clearly describes and demonstrates that the competitor has sufficient experience relevant to their solution.</li> </ul> </li> <li>Technical Concept Paper (see Section 4.2.3)</li> <li>Solution Description: What is your innovative solution and less conventional use case?</li> <li>Reviewers provide two scores, each on a scale of 0 - 6:         <ul> <li>Score #1: The technical description clearly explains how the energy storage use case and solution works or is intended to work, including technical feasibility backed up with robust tests/demonstrations/simulations.</li> <li>Score #2: The solution described is an innovative and compelling solution for a less conventional use case.</li> </ul> </li> <li>Solution Analysis: What are the expected benefits and costs of your solution and how does your solution support DOE's goals for providing affordable, equitable, resilient, and reliable energy or other DOE priorities (e.g., sustainable supply chain)?</li> <li>Reviewers provide two scores, each on a scale of 0 - 6:             <ul> <li>Score #1: Based on the included descriptions, calculations, and projections, the benefits and costs of the solution have been comprehensively considered and characterized for a plausible market.</li> <li>Score #2: The technology clearly and robustly benefits DOE priorities such as creating a sustainable supply chain, providing energy equity, and enhancing resilience and reliability.</li> </ul> </li> <li>Challenges: What challenges are associated with the development and execution of your solution?</li> <li>Reviewers provide a single score on a scale of 0 - 6, taking the following statements into consideration:</li> </ul>		Competitor Background (see Section 4.2.2)	
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<ul> <li>Score #1: Based on the included descriptions, calculations, and projections, the benefits and costs of the solution have been comprehensively considered and characterized for a plausible market.</li> <li>Score #2: The technology clearly and robustly benefits DOE priorities such as creating a sustainable supply chain, providing energy equity, and enhancing resilience and reliability.</li> <li>Challenges: What challenges are associated with the development and execution of your solution?</li> <li>Reviewers provide a single score on a scale of 0 – 6, taking the following statements into consideration:</li> </ul>	Review	vers provide two scores, each on a scale of $0 - 6$ :	
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Challenges: What challenges are associated with the development and execution of your solution? Reviewers provide a single score on a scale of 0 – 6, taking the following statements into consideration:	• So su	core #2: The technology clearly and robustly benefits DOE priorities such as creating a ustainable supply chain, providing energy equity, and enhancing resilience and reliability.	
Reviewers provide a single score on a scale of $0 - 6$ , taking the following statements into consideration:	Challenge	es: What challenges are associated with the development and execution of your solution?	
	Review conside	vers provide a single score on a scale of $0 - 6$ , taking the following statements into eration:	
<ul> <li>A realistic and well-thought-out analysis of barriers and challenges is provided, including potential solutions and RD&amp;D areas of consideration.</li> </ul>	• A po	realistic and well-thought-out analysis of barriers and challenges is provided, including otential solutions and RD&D areas of consideration.	
<ul> <li>The competitor provides a clear list of future activities, including RD&amp;D, to further develop the solution.</li> </ul>	• Th so	he competitor provides a clear list of future activities, including RD&D, to further develop the olution.	
<ul> <li>The competitor provides a clear description of risks to development and execution of the solution, along with mitigation approaches.</li> </ul>	• Th so	he competitor provides a clear description of risks to development and execution of the olution, along with mitigation approaches.	

Comm	ercialization: How would you further develop or commercialize your solution?
Revie cons	ewers provide a single score on a scale of $0 - 6$ , taking the following statements into ideration:
•	Clear links are established between the current state of the problem or opportunity, the solution, and the areas of development needed to reach future goals.
•	Thorough descriptions of the types of essential project partners are included.
•	The competitor includes compelling evidence of how additional funding could help advance the development of the solution.
	BCA Worksheet (see Section 4.2.4)
Revie cons	ewers provide a single score on a scale of $0 - 6$ , taking the following statements into ideration:
•	The competitor provides a thorough assessment of technical and non-technical benefits and costs using the estimated NPV.
•	The competitor clearly explains their approach and reasoning for determining estimates for each benefit and cost, including intermediate analysis, equations, or calculation steps.
	Introduction Video (see Section 4.2.6)
Requ	ired, but not a scored component.
	Slide Summary (see Section 4.2.5)
Requ	ired, but not a scored component.
	Reviewer Technical Recommendation
Revie into d	ewers provide an additional single score on a scale of $0 - 6$ , taking the following statement consideration:
•	In the opinion of the reviewer, the entire submission is a meritorious submission that achieves the goals of the prize.

• The solution, team, and plan should be strongly considered for a prize.

# 5.3 Interviews

DOE may request to interview specific competitors to clarify potential reviewer questions and help them better understand submissions. Potential interviews would be held prior to the conclusion of the submission scoring and may help with final prize determinations. Participating in interviews is not required, and **an interview request is not a favorable indication of a competitor's likelihood of winning.** 

# **5.4 Final Determination**

Final determination of the winners will take into account the reviewers' feedback and scores, the application of program policy factors, and the interview findings (if applicable). The DOE judge will make the final determination of the winners.

# **6** Selection and Announcement

Prize winners will be selected by DOE and announcements will be coordinated by the Prize Administrator. After the winners are publicly announced, the Prize Administrator will distribute cash prizes.

## 6.1 Selection Notification

Approximately 60 days after the contest closes, the Prize Administrator will notify the winners and request the necessary information to distribute the prizes.

### 6.2 Winner Announcement

The Prize Administrator, in coordination with DOE, will publicly announce the winners.

### 6.3 Promotional Video

After awards are provided, winners must participate in a promotional showcase video created by DOE. The promotional video may be used by DOE for, e.g., news items, social media posts, showcases at the annual ESGC Summit or other relevant events. DOE will initiate communications regarding the video after awards are distributed.

# **Appendix: Additional Terms and Conditions**

#### A.1 Terms and Conditions of Submissions

Your submission for the Energy Storage Innovations Prize Round 2 is subject to the following terms and conditions:

- You must post the final content of your submission or upload the submission form online by 5 p.m. ET on the prize deadline date, before the prize's phase submission period closes. Late submissions or any other form of submission will be rejected.
- You must include all the required elements in your submission. The Prize Administrator may disqualify your submission after an initial screening if you fail to provide all required submission elements. Competitors may be given an opportunity to rectify submission errors due to technical challenges and errors relating to confidentiality markings (see Appendix A.4).
- Your submission must be in English and in a format readable by Adobe PDF and Microsoft Excel, as described in Section 4.2. Scanned hand-written submissions will be disqualified.
- Submissions will be disqualified if they contain any matter that, in the sole discretion of the U.S. Department of Energy or the National Renewable Energy Laboratory (NREL), is indecent, obscene, defamatory, libelous, and/or lacking in professionalism, or demonstrates a lack of respect for people or life on this planet.

Your use of the HeroX platform is subject to the following terms and conditions:

- If you click "Accept" on the HeroX platform and proceed to register for any of the prizes described in this document, these rules will form a valid and binding agreement between you and DOE. These rules are in addition to the existing HeroX Terms of Use for all purposes relating to this contest. You should print and keep a copy of these rules. These rules only apply to the prize described here and no other prize on the HeroX platform or anywhere else.
- As part of your submission to this prize, you will be required to sign the following statement in HeroX:

I am providing this submission package as part of my participation in this prize. I understand that the information contained in this submission will be relied on by the federal government to determine whether to issue a prize to the named competitor. I certify under penalty of perjury that the named competitor meets the eligibility requirements for this prize competition and complies with all other rules contained in the Official Rules document. I further represent that the information contained in the submission is true and contains no misrepresentations. I understand false statements or misrepresentations to the federal government may result in civil and/or criminal penalties under 18 U.S.C. § 1001 and § 287, and 31 U.S.C. §§ 3729-3733 and 3801-3812.

## A.2 Verification for Payments

The Prize Administrator will verify the identity and affiliation of all competitors before distributing any prizes. Receiving a prize payment is contingent upon fulfilling all requirements contained herein. The Prize Administrator will notify winning competitors using provided email contact information for the individual or entity that was responsible for the submission. Each competitor will be required to sign

and return to the Prize Administrator, within 30 days of the date on the notice, a completed NREL Request for ACH Banking Information form and a completed W-9 form (<u>https://www.irs.gov/pub/irs-pdf/fw9.pdf</u>). In the sole discretion of the Prize Administrator, a winning competitor will be disqualified from the competition and receive no prize funds if: (i) the person/entity does not respond to notifications; (ii) the person/entity fails to sign and return the required documentation within the required time period; (iii) the notification is returned as undeliverable; (iv) the submission or person/entity is disqualified for any other reason.

In the event of a dispute as to any registration, the authorized account holder of the email address used to register will be deemed to be the competitor. The "authorized account holder" is the natural person or legal entity assigned an email address by an internet access provider, online service provider, or other organization responsible for assigning email addresses for the domain associated with the submitted address. All competitors may be required to show proof of being the authorized account holder.

## A.3 Teams and Single-Entity Awards

The Prize Administrator will award a single dollar amount to the designated primary submitter, whether consisting of a single or multiple entities. The primary submitter is solely responsible for allocating any prize funds among its member competitors or teammates as they deem appropriate. The Prize Administrator will not arbitrate, intervene, advise on, or resolve any matters or disputes between team members or competitors. ALL DECISIONS BY DOE ARE FINAL AND BINDING IN ALL MATTERS RELATED TO THE PRIZE.

### A.4 Treatment of Submission Materials

Competitors should not include trade secrets or business sensitive proprietary, or otherwise confidential information in their submission unless such information is necessary to convey an understanding of the project or to comply with a requirement in the Rules. Competitors are advised to not include any critically sensitive proprietary detail.

If an application includes trade secrets or business sensitive, proprietary, or otherwise confidential information, it is furnished to the Federal Government in confidence with the understanding that the information shall be used or disclosed only for evaluation of the submission. Such information will be withheld from public disclosure to the extent permitted by law, including the Freedom of Information Act. Without assuming any liability for inadvertent disclosure, DOE will seek to limit disclosure of such information to its employees and to outside reviewers when necessary for review of the submission or as otherwise authorized by law.

Submissions containing business sensitive, trade secrets, proprietary, or otherwise confidential information, must be marked as described below. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the Freedom of Information Act or otherwise. The U.S. Government is not liable for the disclosure or use of unmarked information and may use or disclose such information for any purpose as authorized by law.

If a competitor's submission includes confidential information, the applicant must provide two copies of the submission components that include the confidential information. The first copy should be marked, "non-confidential" with the information believed to be confidential deleted. The second copy should be marked "confidential" and must clearly and conspicuously identify the business sensitive, trade secrets, proprietary, or otherwise confidential information and must be marked as described below. The submission components must be marked as follows and must identify the specific pages containing business sensitive, trade secrets, proprietary, or otherwise confidential, or otherwise confidential information and must identify the specific pages containing business sensitive, trade secrets, proprietary, or otherwise confidential information.

Notice of Restriction on Disclosure and Use of Data: Pages [list applicable pages] of this document may contain business sensitive, trade secrets, proprietary, or otherwise confidential information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source. [End of Notice]

In addition, (1) the header and footer of every page that contains business sensitive, trade secrets, proprietary, or otherwise confidential information must be marked as follows: "Contains Business Sensitive, Trade Secrets, Proprietary, or Otherwise Confidential Information Exempt from Public Disclosure," and (2) every line or paragraph containing such information must be clearly marked with double brackets or highlighting. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

DOE, the Prize Administrator, and any other third-party supporting DOE in the contest assume no liability for the public disclosure of any information.

#### A.5 Representation and Warranties

By entering, the competitor represents and warrants that:

- 1. The competitor's entire submission is an original work by the competitor and the competitor has not included third-party content (such as writing, text, graphics, artwork, logos, photographs, likeness of any third party, musical recordings, clips of videos, television programs or motion pictures) in or in connection with the submission, unless (i) otherwise requested by the Prize Administrator or disclosed by the competitor in the submission, and (ii) the competitor acquired the necessary rights to use and to authorize others, including DOE, to use the submission, as specified throughout the rules.
- 2. To the best of the competitor's knowledge, the use of the submission in the prize, including any use by DOE or the Prize Administrator, does not and will not infringe or violate any rights of any third party or entity, including, without limitation, patent, copyright, trademark, trade secret, defamation, privacy, publicity, false light, misappropriation, intentional or negligent infliction of emotional distress, confidentiality, or any contractual or other rights.
- 3. All persons who were engaged by the competitor to work on the submission or who appear in the submission in any manner have:
  - a. Given the competitor their express written consent to submit the submission for exhibition and other exploitation in any manner and in any and all media, whether now existing or hereafter discovered, throughout the world;
  - b. Provided written permission to include their name, image, or pictures in or with the submission (or, if a minor who is not the competitor's child, competitor must have the permission of the minor's parent or legal guardian) and the competitor may be asked by the prize administrator to provide permission in writing; and
  - c. Not been and are not currently under any union or guild agreement that results in any ongoing obligations resulting from the use, exhibition, or other exploitation of the submission.
- 4. The submission is free of malware.

## A.6 Contest Subject to Applicable Law

All contests are subject to all applicable federal laws and regulations. Participation constitutes each participant's full and unconditional agreement to these Official Rules and administrative decisions, which are final and binding in all matters related to the contest. This notice is not an obligation of funds; the final award is contingent upon the availability of appropriations.

## A.7 Resolution of Disputes

DOE is solely responsible for administrative decisions, which are final and binding in all matters related to the contest.

Neither DOE nor the Prize Administrator will arbitrate, intervene, advise on, or resolve any matters between team members or among competitors.

## A.8 Publicity

The winners of these prizes (collectively, "winners") will be featured on DOE and NREL websites. Except where prohibited, participation in the contest constitutes each winner's consent to DOE's and its agents' use of each winner's name, likeness, photograph, voice, opinions, and/or hometown and state information for promotional purposes through any form of media worldwide, without further permission, payment, or consideration.

# A.9 Liability

Upon registration, all participants agree to assume any and all risks of injury or loss in connection with or in any way arising from participation in this contest. Upon registration, except in the case of willful misconduct, all participants agree to and, thereby, do waive and release any and all claims or causes of action against the federal government and its officers, employees, and agents for any and all injury and damage of any nature whatsoever (whether existing or thereafter arising, whether direct, indirect, or consequential, and whether foreseeable or not), arising from their participation in the contest, whether the claim or cause of action arises under contract or tort.

In accordance with the delegation of authority to run this contest delegated to the judge responsible for this prize, the judge has determined that no liability insurance naming DOE as an insured will be required of competitors to compete in this competition per 15 U.S.C. § 3719(i)(2). Competitors should assess the risks associated with their proposed activities and adequately insure themselves against possible losses.

#### A.10 Records Retention and Freedom of Information Act

All materials submitted to DOE as part of a submission become DOE records and are subject to the Freedom of Information Act. Where necessary, materials should be marked as noted in Section A.4. Such information will be withheld from public disclosure to the extent permitted by law. Without assuming any liability for inadvertent disclosure, DOE will seek to limit disclosure of such information to its employees and to outside reviewers when necessary for review of the application or as otherwise authorized by law. This restriction does not limit the Government's right to use the information if it is obtained from another source.

Competitors will be notified of any Freedom of Information Act requests for their submissions in accordance with 29 C.F.R. § 70.26. Competitors may then have the opportunity to review materials and work with a Freedom of Information Act representative prior to the release of materials.

## A.11 Privacy

If you choose to provide HeroX with personal information by registering or completing the submission package through the contest website, you understand that such information will be transmitted to DOE and may be kept in a system of records. Such information, except as noted in the Rules above, will be used only to respond to you in matters regarding your submission and/or the contest unless you choose to receive updates or notifications about other contests or programs from DOE on an opt-in basis. DOE and NREL are not collecting any information for commercial marketing.

## A.12 General Conditions

DOE reserves the right to cancel, suspend, and/or modify the prize, or any part of it, at any time. If any fraud, technical failure, or any other factor beyond DOE's reasonable control impairs the integrity or proper functioning of the prize, as determined by DOE in its sole discretion, DOE may cancel the prize. Any performance toward prize goals is conducted entirely at the risk of the competitor, and DOE shall not compensate any competitors for any activities performed in furtherance of this prize.

Although DOE may indicate that it will select up to several winners for each prize, DOE reserves the right to only select competitors that are likely to achieve the goals of the program. If, in DOE's determination, no competitors are likely to achieve the goals of the program, DOE will select no competitors to be winners and will award no prize money.

DOE may conduct a risk review, using Government resources, of the competitor and project personnel for potential risks of foreign interference. The outcomes of the risk review may result in the submission being eliminated from the prize competition. This risk review, and potential elimination, can occur at any time during the prize competition. An elimination based on a risk review is not appealable.

## A.13 Program Policy Factors

While the scores of the expert reviewers will be carefully considered, it is the role of the prize judge to maximize the impact of prize funds. Some factors outside the control of competitors and beyond the independent expert reviewer scope of review may need to be considered to accomplish this goal. The following is a list of such factors. In addition to the reviewers' scores, the below program policy factors may be considered in determining winners:

- It may be desirable to select for award a project or group of projects that represent a diversity of technical approaches and methods under this competition or the overall program.
- Geographic diversity and potential economic impact of projects.
- 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.
- The degree to which the submission exhibits technological or programmatic diversity when compared to the existing DOE project portfolio and other competitors.
- The degree to which the submission is likely to lead to increased employment and manufacturing in the United States or provide other economic benefits to U.S. taxpayers.
- The degree to which the submission 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.
- The degree to which the submission supports complementary DOE-funded efforts or projects, which, when taken together, will best achieve the goals and objectives of DOE.

- The degree to which the submission expands DOE's funding to new competitors and recipients who have not been supported by DOE in the past.
- The degree to which the submission enables new and expanding market segments.
- Whether the project promotes increased coordination with nongovernmental entities toward enabling a just and equitable clean energy economy in their region and/or community.

#### A.14 National Environmental Policy Act Compliance

This prize is subject to the National Environmental Policy Act (NEPA) (42 U.S.C. § 4321, et seq.). NEPA requires federal agencies to integrate environmental values into their decision-making processes by considering the potential environmental impacts of their proposed actions. For additional background on NEPA, please see DOE's NEPA website at http://nepa.energy.gov/.

While NEPA compliance is a federal agency responsibility and the ultimate decisions remain with the federal agency, all participants in the Energy Storage Innovations Prize Round 2will be required to assist in the timely and effective completion of the NEPA process in the manner most pertinent to their participation in the prize competition. Participants may be asked to provide DOE with information on fabrication and testing of their device such that DOE can conduct a meaningful evaluation of the potential environmental impacts.

### A.15 Return of Funds

As a condition of receiving a prize, competitors agree that if the prize was made based on fraudulent or inaccurate information provided by the competitor to DOE, DOE has the right to demand that any prize funds or the value of other non-cash prizes be returned to the government.