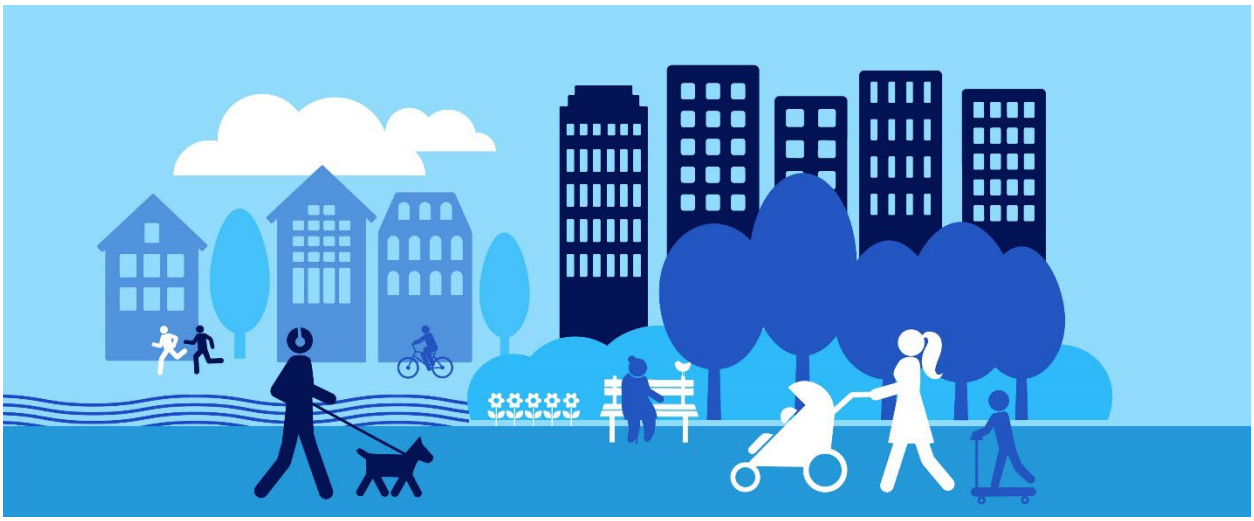
Buildings UP

The Buildings Upgrade Prize

An American-Made Challenges Prize Supported by the U.S. Department of Energy



Phase 2: Plan Phase

OFFICIAL PRIZE RULES

Modification 2 - March 2024

Phase 2 submissions will be reviewed on a quarterly basis beginning in summer 2024 through summer 2025.

Preface

The U.S. Department of Energy (DOE) Buildings Upgrade Prize (Buildings UP) will be governed by 15 U.S.C. §3719 and this Official Rules document. This is not a procurement under the Federal Acquisitions Regulations and will not result in a grant or cooperative agreement under 2 CFR 200. The Prize Administrator reserves the right to modify this Official Rules document if necessary and will publicly post any such notifications as well as notify registered prize participants.

Date	Modification
1/17/2024	**Page 17:** Added clarification that the submission item for review under Buildings UP is a summary of the Community Accountability Plan. A summary template will be provided. **Page 17**: Added details to Affirmation of Engagement, including examples of successful affirmations from community members. **Page 17/18**: Removed Affirmation of Engagement from the list of DOE-provided elective Section 1 submission templates.
3/15/2024	**Page 8, 20-23:** Added option to submit Technology Relevance Report(s) containing information from a relevant prior technology demonstration or three relevant prior installations of minimum technologies and any additional weatherization upgrades planned for the pilot initiative in lieu of completing a technology demonstration. Added table showing two options for demonstrating technology suitability for building types and climate zones and identified required supporting documentation for each option. Clarified that teams must complete a technology demonstration if the technologies planned for the pilot initiative have not been installed or demonstrated in the climate zone and building type in the past. Increased page limit for Technology Demonstration Plan to 15 pages. **Page 8, 10:** Removed statement that 'no upgrades should occur during Phase 2.' Clarified that teams may perform building upgrades during Phase 2 but will not be assessed or evaluated in the Phase 2 submission. Added list of prerequisite items that must be secured in order for such upgrades to be claimed toward achievement in future prize phases (if issued) and received approval of their technology relevance report through the interim submission process. **Page 10:** Added notification of possible 60-day delay in NEPA determination for proposed upgrades to potentially historic buildings. Added information on NEPA considerations for historic buildings. **Page 13**: Updated Table 4 to indicate that portions of the Four Mandatory Phase 2 submission materials may be used to develop publicly available case studies and resources created through the prize. **Page 17, 19:** Added that exemption from installing minimum technologies in building upgrades is not available. **Page 21-22:** Removed requirement to upload NEPA determination documentation and replaced it with the requirement to summarize the

	outcome of the determination and list the NEPA determination number in the Technology Demonstration Plan (applicable only to teams executing a technology demonstration). **Page 26, 36:** Clarified minimum requirement and best practice for gaining Energy Skilled recognition for training and certifications. **Page 27**: Increased slide limit to 20 slides for Pilot Initiative Pitch Deck. **Page 28**: Removed Consumer Protection and Disclosure Template provided by DOE. **Page 30**: Added instructions on how to seek approval for technology relevance on prior installations and technology demonstrations before a full Phase 2 submission. **Page 34:** Updated minimum requirement to include option for submitting a technology relevance report and clarified that technology demonstrations must address minimum technologies and weatherization where needed to minimize increases in energy bills. **Page 36**: Clarified minimum requirement and best practice for adhering to Department of Labor's Good Jobs Principles.

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Overview

The U.S. Department of Energy (DOE) Buildings Upgrade Prize (Buildings UP) is a capacity-building prize focused on reducing greenhouse gas emissions in existing buildings through energy efficiency and efficient electrification. In its first phase, Buildings UP awarded cash prizes and technical assistance to winning teams that developed innovative concepts for leveraging billions in state, local, and federal funding for energy efficiency and efficient electrification to accelerate building upgrades and achieve greenhouse gas reduction, equity, economic development, and health goals.

Buildings UP has four proposed phases, as shown in Figure 1, over approximately five years. This document addresses the rules for Phase 2 only, which is open to Phase 1 winners only. DOE intends to award up to $17.2 million dollars under Phase 2. ***Subsequent phases are envisioned to offer similar prize pools subject to the availability of funds.***

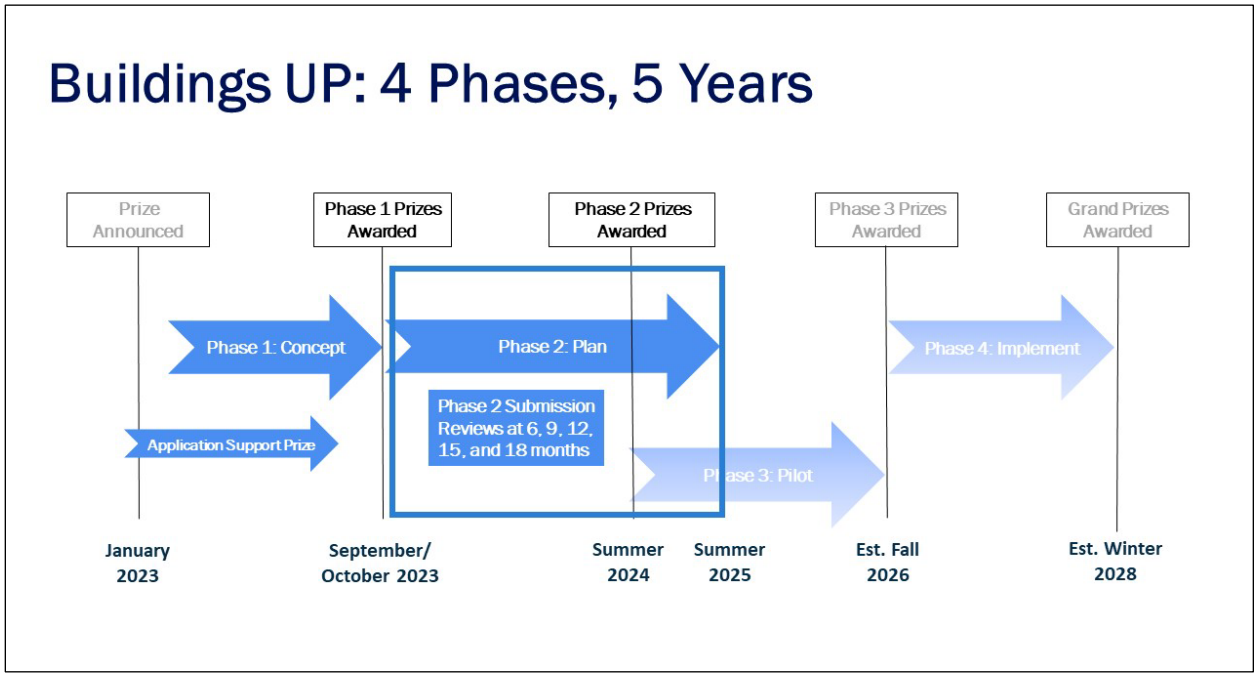

Figure 1. Anticipated Buildings UP phases

Phase 1 winning teams applied to one of two pathways:

1. **Equity-Centered Innovation Pathway** – Teams proposed a new initiative or innovation to an existing initiative for delivering scalable and replicable building upgrades to buildings in disadvantaged communities, low- and moderate-income (LMI) households, and underserved commercial, nonprofit, and public buildings, collectively referred to throughout this document as "equity-eligible" buildings. (See Section 04 for a detailed definition.)
2. **Open Innovation Pathway** – Teams proposed a new initiative or expansion of an existing initiative that can achieve scalability and replicability of building upgrades.

The two pathways are compared in Table 1. The pathway awarded in Phase 1 must be maintained in Phase 2. Teams are not allowed to change from the Open Innovation Pathway to the Equity-Centered Innovation Pathway (and vice versa) between Phase 1 and Phase 2.

Table 1. Phase 2 Prize Pathways

	Equity-Centered Innovation Pathway	Open Innovation Pathway
Phase 2 Deliverable	Building Upgrade Phase 2 Submission addressing all critical success factors and supporting documentation for selected pathway.	
Equity Commitment	The team's building upgrade initiative demonstrates a focus on equity-eligible buildings (at least 80% of upgrades take place in equity-eligible buildings). See Section 4.3 for details.	Team is encouraged to include equity-eligible buildings in initiatives, but not required.
Required Team Members	• The team demonstrates at least 1 full-time equivalent (FTE) staff member available for the initiative; may be spread across different people/organizations. • Designated Prize Recipient (up to 2 per team). • Community engagement expertise representing communities to be served (e.g., community-based organization).	• The team demonstrates at least 1 FTE available for the initiative; may be spread across different people/ organizations. • Designated Prize Recipient (1 per team).
Encouraged Team Members	Expertise in accessing and/or combining multiple sources of funding to fully resource building upgrade initiatives.	Community engagement expertise. Expertise in accessing and/or combining multiple sources of funding to fully resource building upgrade initiatives.
Prize Funding	$400,000	$200,000
Technical Assistance*	Up to 140 hours of technical assistance	Up to 100 hours of technical assistance

* Teams will be disqualified if Technical Assistance Providers and/or Regional Navigators write any portion of their Phase 2 narratives or plans.

All teams must include:

1. **A Lead Organization** that commits a lead point of contact/staff person for the duration of their involvement in Buildings UP. The lead point of contact may change during the prize. The team should have at least one FTE dedicated to this effort. The FTE may be spread across multiple organizations on the team or be one employee at one organization.
2. **A Designated Prize Recipient** that is a legal entity and can receive prize funds. The Designated Prize Recipient can be a fiscal sponsor for a participating organization that is not a legal entity and/or be responsible for further distributing funding to other organizations on a team. The Lead Organization may also be the Designated Prize Recipient. More information on payment details is in Section 4.6.2 and 4.6.3.

Additional information can be found in the Buildings UP Frequently Asked Questions (FAQ).

1. Buildings UP Phase 2 Plan: Overview

In Phase 2, Phase 1 winning teams will build on their concepts developed in Phase 1 to develop a plan for piloting a new or expanded building upgrade initiative in the identified building upgrade zone(s). Any building upgrades taking place during Phase 2 will not be considered or assessed as part of the Phase 2 evaluation, although they may be considered in future phases. The Phase 2 submission consists of four required sections and one optional section. Meeting the minimum requirements for each of the four required sections will result in a Phase 2 Plan prize award of $200,000 or $400,000 (depending on pathway) for each team. Teams may complete the optional fifth section to compete for an Innovation Bonus Prize ($80,000 each for up to five prize winners).

The Phase 2 submission must address Sections 1-4. Teams can choose whether to address Section 5 to apply for an additional cash bonus prize.

1) **Section 1: Phase 2 Analysis and Engagement Activities and Outcomes**. Summary of Phase 2 analysis and engagement activities and outcomes that helped shape the Technology Demonstration and Pilot Initiative Implementation Plans.
2) **Section 2: Technology Demonstration Plan (Tech Demo Plan) or Technology Relevance Report.** The Phase 2 submission must include a Tech Demo Plan or a Technology Relevance Report containing information from prior relevant installations, or, if applicable, final report(s) from relevant prior technology demonstration(s) to validate the suitability and effectiveness of the minimum technologies (heat pumps and/or heat pump water heaters and weatherization upgrades where needed to minimize increases in energy bills) in each building type and climate zone planned for the pilot building upgrade initiative.
    a. If technology demonstration(s) will be conducted, teams must be positioned to execute the demonstration(s) at the time of the Phase 2 submission. Meeting all Phase 2 minimum requirements evidences the team is positioned to execute the technology demonstration. Team-executed technology demonstrations should not take place before the Phase 2 submission.
    b. In the alternate, teams have the option to rely on prior technology demonstrations or installations that are relevant to the planned pilot initiative (i.e., a technology relevance report). Teams may rely on prior technology demonstrations and installations conducted and reported by third parties. As discussed in Section 2.2.1, teams may submit a technology relevance report in advance of the Phase 2 submission deadline for a sufficiency review by DOE.
3) **Section 3: Pilot Initiative Implementation Plan**. The Phase 2 submission must include details for scaling from the technology demonstration (may be one building/unit) to the pilot initiative (scaling up to more buildings) including testing all aspects of the pilot initiative (program design, outreach, quality assurance, etc.). Teams must be positioned to execute the pilot initiative soon after the technology demonstration is complete. Meeting all Phase 2 minimum requirements indicates the team is positioned to execute the pilot initiative implementation plan.
4) **Section 4: Full-Scale Building Upgrade Initiative Vision.** The Phase 2 submission must identify initial steps and a high-level budget to transition to a full-scale building upgrade initiative based on the anticipated results of the planned pilot initiative.
5) **Section 5: Innovation Bonus Prize (optional).** Teams are invited to complete the fifth section of the Phase 2 submission to describe any innovative approaches they are using to overcome persistent and difficult challenges to building upgrades.

Table 2 provides *guidance* on the number of building upgrades teams should plan to complete in the technology demonstration, pilot initiative, and full-scale building upgrade initiative. In the event the

recommended number of upgrades provided as guidance in Table 2 appears inapplicable to a team's building upgrade zone, a rationale for exclusion from such element must be provided in Section 1 and uploaded to Section 1 in HeroX. DOE expects such instances to be rare but may consider exclusions where sufficiently justified. DOE will not consider time or budget constraints as a valid reason for not meeting the number of recommended building upgrades.

Table 2. Guidelines for the Number of Building Upgrades in Team Initiatives

Building Initiative Stage	Building Types			
	Single-Family Homes	**Multifamily Buildings**	**Small Commercial** (Under 25K SF)	**Large Commercial** (Over 25K SF)
Tech Demo	At least 1 home	At least 1 unit	At least 1 separately metered space (e.g., retail space)	At least 1 building
Pilot Initiative	At least 10-50 homes	At least 10-50 units	At least 10-50 separately metered spaces (e.g., retail or small office spaces)	At least 2 buildings
Full-Scale Initiative	At least 100-1000+ homes	At least 100-1000+ units	At least 100-1000+ separately metered spaces	At least 10 buildings

Teams addressing a single building type in their building upgrade initiative should follow guidance in the column in the table above for the building type they are addressing. Teams addressing multiple building types must plan to complete upgrades for the technology demonstration, pilot initiative, and full-scale initiative for each building type they intend to address. A technology demonstration completed by the team may count towards the pilot initiative minimums. Table 3 provides guidance for teams that plan to address more than one building type in their building upgrade initiatives.

Table 3. Guidelines for Teams Addressing Multiple Building Types

	Single-Family Homes	**Multifamily Buildings**	**Small Commercial** (Under 25K SF)	**Large Commercial** (Over 25K SF)
Tech Demo	At least 1 home	At least 1 unit	At least 1 separately metered space (e.g., retail or small office space)	At least 1 building
Pilot Initiative	At least 10-50 homes, multifamily units, separately metered small commercial spaces total			At least 2 buildings
Full-Scale Initiative	At least 100-1,000+ homes, multifamily units, separately metered small commercial spaces, and large commercial buildings total			

For example, a team planning to address single-family, multifamily, and large commercial buildings (but not small commercial) in their building upgrade initiative should plan to complete upgrades in a minimum of 1 single-family home, 1 multifamily unit, and 1 large commercial building for their technology demonstration. The team should plan to complete upgrades in at least 10–50 single-family homes and multifamily units and 2 large commercial buildings during the pilot initiative. For the full-scale initiative the team should plan to complete upgrades in at least 100–1,000+ total units or buildings across all building types addressed.

Teams are encouraged to plan for more than the minimum required upgrades and/or more complex upgrades. More complex upgrades may include but are not limited to: upgrades that necessitate prerequisite energy-related health and safety measures before the upgrades can occur, upgrades that include multiple installations (e.g., heat pump and weatherization), and upgrades that include fuel switching or electrical panel improvements.

In developing plans, teams should consider the potential applicability of the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA) to installations. NEPA and NHPA review and determinations are conducted by DOE. Section 4.6.14 provides guidelines on how any such installations could qualify for an expedited NEPA review and determination. Upgrades proposed in buildings that may be eligible for the National Register of Historic Places under the NHPA will require additional evaluation, which may add an additional 60 days (or more) to the review period.

National Register of Historic Places eligibility evaluations are based on the quality of significance in American history, architecture, archaeology, engineering, and culture present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

a. are associated with events that have made a significant contribution to the broad patterns of our history; or
b. are associated with the lives of significant persons in or past; or
c. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
d. have yielded or may be likely to yield, information important in history or prehistory.[1]

As stated above, any building upgrades performed during Phase 2 will not be considered or evaluated under Phase 2. If a team completes an upgrade during Phase 2 that it may want considered under future phases of the prize (if issued), the team must obtain the following:

- NEPA determination (which includes NHPA review). DOE does not guarantee that it will conclude the specified reviews in the Phase 2 time period.
- Consumer Disclosure Form (signed by Subscriber and person paying energy bills, if different)
- Energy Cost Estimate for proposed upgrade
- Completed Final Quality Assurance Inspection
- All required local permitting and approvals to which the upgrade is subject.

1.1. Resources to Support Teams

Phase 1 winning teams competing in Phase 2 have access to an online Team Collaboration Platform, the Buildings UP Community Site, technical assistance from a variety of providers, and Regional Navigators.[2] Each Phase 2 team will be assigned to a Regional Navigator to help identify local and regional resources to plan the technology demonstration(s) and pilot initiative, and to connect teams to Technical Assistance Providers.[3] Technical Assistance Providers offer teams support in the areas of identifying funding and financing for building upgrades, building stock and energy modeling analysis, programmatic design,

[1] How to Apply the National Register Criteria for Evaluation (nps.gov)
[2] See glossary for definition.
[3] See glossary for definition.

workforce development and economic inclusion strategies, achieving equitable outcomes, and other relevant areas. Regional Navigators and Technical Assistance Providers cannot serve as a team member[4] or team partner.[5] Technical Assistance Providers and Regional Navigators are not permitted to provide direct application support (e.g., a Technical Assistance Provider or Regional Navigator must not write or edit any portion of a team's plans or narratives). Such participation by a Technical Assistance Provider or Regional Navigator will result in disqualification of a team. Unused technical assistance hours awarded to Phase 1 winners (140 hours for Equity-Centered Innovation pathway teams and 100 hours for Open Innovation Pathway teams) may be used throughout the duration of the Prize. Teams will also have access to a series of online training webinars beginning in January 2024.

1.2. Phase 2 Submission Timeline

There will be quarterly opportunities for teams to submit their Phase 2 submission packages (at 6, 9, 12, 15, and 18 months after Phase 2 opening). This submission schedule allows Buildings UP teams to move through Phase 2 at a pace that best meets the needs of their initiative. Teams may resubmit their Phase 2 submission package once during Phase 2. (See timeline in Figure 2.)

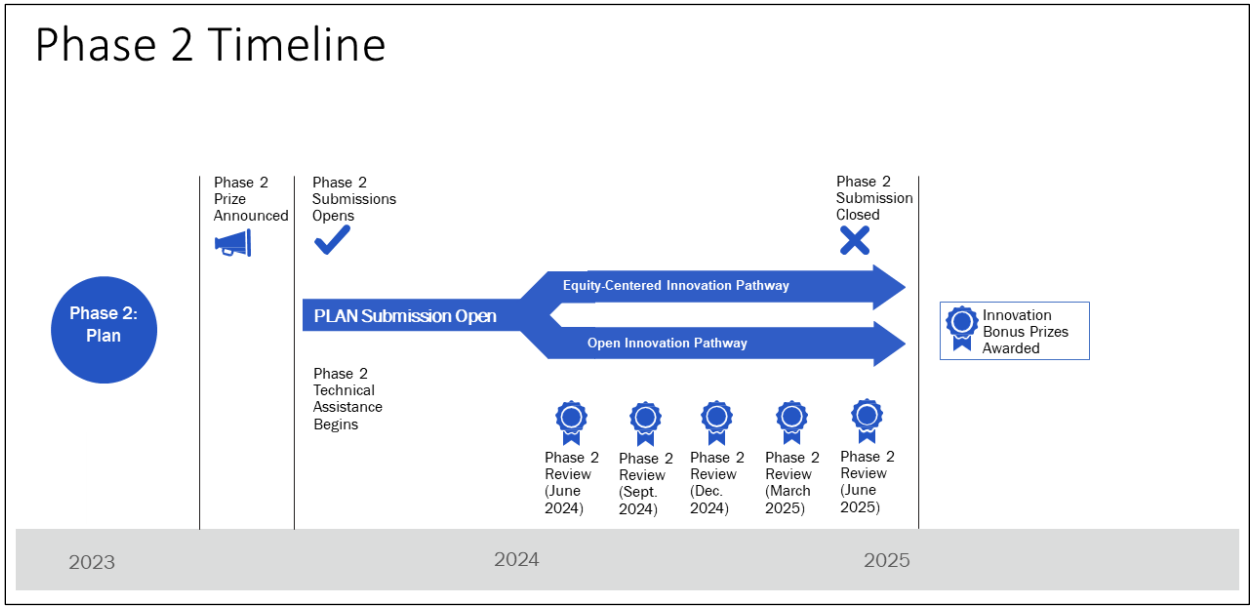

Figure 2. Phase 2 timeline

[4] See glossary for definition.
[5] See glossary for definition.

1.3. Submissions Not of Interest

Applications that do not present strategies that address one or more of the goals specified in Section 4.2, or that do not include the minimum technologies and strategies as specified in Section 4.3 are not of interest and will not be considered. Additionally, applications that do not include plans striving for at least the recommended number of upgrades for the technology demonstration, pilot implementation, and full-scale initiative in Tables 2 and 3, or do not provide substantive justification for why they cannot meet the guidelines will not be considered.

1.4. Prizes To Win

Teams have the opportunity to win a Phase 2 Plan Prize and an Innovation Bonus Prize.

Phase 2 Plan Phase Prize Awards

Teams that meet the minimum requirements in all 10 critical success factors will receive $200,000 or $400,000, depending on their pathway (Open Innovation or Equity-Centered Innovation Pathways, respectively). Winning teams will also be awarded 100 or 140 hours of technical assistance (Open-Innovation or Equity-Centered Innovation Pathways, respectively).

Phase 2 Innovation Bonus Prize Awards

Buildings UP will award up to five bonus prizes from a total Innovation Bonus Prize pool of $400,000 ($80,000 each) at the conclusion of Phase 2. Teams may submit up to two Innovation Bonus Prize submissions.

1.5. Key Dates

- **Phase 2 announcement and rules posted:** December 2023
- **Phase 2 Plan Prize submission period:** June 2024 through June 2025- Quarterly submission deadlines are June 17, 2024; September 16, 2024; December 16, 2024; March 17, 2025; and June 16; 2025 at 5 PM Eastern Time. Submissions must be received no later than Jun 16, 2025, at 5 PM Eastern Time.
- **Phase 2 Plan Prize winning teams announced, prizes awarded:** Quarterly during the Phase 2 submission period beginning in June 2024. Prizes are awarded approximately 30 to 60 days after the Phase 2 submission is received.
- **Phase 2 Innovation Bonus Prize winners announced, prizes awarded:** Phase 2 concludes when all teams have won a Phase 2 Plan award or 18 months have passed since the Phase 2 announcement and rules posting, whichever occurs first. Winner announcements are estimated for summer/fall 2025. Prizes are awarded approximately 30 to 60 days after the Phase 2 submission period closes.
- **Access to technical assistance and Regional Navigators begins for winning teams** in November 2023 and continues through Phase 2.
- **Team webinar trainings** begin in January 2024.

2. Phase 2 Submission Package and Evaluation Overview

Competitors applying for Phase 2 prizes must complete the Phase 2 submission items on the HeroX platform. The submission package sections are described in Table 4. All items listed are mandatory unless specifically labeled as optional.

Table 4. Submission Items for Phase 2 Plan Prize

Section	Will Be Made Public[6]	Scored Item
Eligibility Information	No	No
Team & General Information	Partial	No
Four Mandatory Sections**	Partial	Yes
One Optional Section	No	Yes
Uploaded Items	No	Yes
Pilot Initiative Pitch Deck*	Yes	No

* Each participating team is invited to present their Pilot Implementation Plan Pitch Deck at a hybrid event planned for late 2024 or early 2025 (in-person attendance encouraged but not required). The pitch will not be scored. The event will provide an opportunity for further technical assistance and an opportunity to learn and share information between teams. Participating teams may be advised on Pilot Initiative Pitch Deck content by Technical Assistance Providers. Additional funds for travel will not be provided. A virtual option will be available.

**Information submitted in the four mandatory sections may be utilized for development of publicly available case studies and resources created through the prize.

Phase 2 Critical Success Factors: The four mandatory sections and the associated uploaded documentation will be evaluated against 10 factors deemed critical for the success of a pilot building upgrade initiative. Teams must meet the minimum requirements in each critical success factor to win a Phase 2 Plan Prize award.

The 10 critical success factors are:

1. Team and Pilot Initiative Administrative Budget and Staffing
2. Community Engagement, Stakeholder Engagement, and Community Benefits
3. Technology Suitability for the Building Upgrade Zone(s)
4. Pilot Initiative Technologies, Metrics, and Goals
5. Funding and Financing Building Upgrades
6. Workforce and Supply Chain Capacity
7. Subscriber Strategy and Approval Process
8. Quality Assurance and Consumer Protections
9. Risk Assessment and Mitigation Strategies
10. Scaling and Replicability

[6] Competitors who do not want their submission elements or other documents to be made public will need to mark them according to the instructions in the Appendix (Section 4.6.10).

Each of the critical success factors will be evaluated on a pass/fail basis. The minimum requirements for passing are outlined for each critical success factor in Section 3.1. Suggested best practices are also provided for each critical success factor, and while not required, best practices are intended to offer helpful guidance. Buildings UP Technical Assistance Providers are available as awarded under Phase 1 to assist teams with each critical success factor topic. Teams must meet the minimum requirements in all 10 critical success factors to receive the Phase 2 Plan award of $200,000 or $400,000 depending on pathway.

In the event a minimum requirement or number of upgrades provided as guidance in Table 2 appears inapplicable to a team's Phase 2 submission, a rationale for exclusion from such element must be provided in Section 1 and uploaded to Section 1 in HeroX. DOE expects such instances to be rare but may consider exclusions where sufficiently justified. DOE will not consider time or budget constraints as a valid reason for not meeting a minimum requirement.

Phase 2 Optional Innovation Bonus Prize

Buildings UP will award up to five bonus prizes from a total Innovation Bonus Prize pool of $400,000 ($80,000 each) at the conclusion of Phase 2 (est. Fall 2025). Awards may be made for innovations in the following categories:

1. Energy-Related Health and Safety Measures
2. Finance and Funding
3. Workforce Development
4. Community Engagement
5. Wild Card (open to any innovation)

The optional Innovation Bonus Prize section will be evaluated against four criteria with one scored statement each. The statements will be scored on a scale of 1 to 6 based on the degree to which the reviewer agrees or disagrees that the statement meets the specified criteria.

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

Criteria	Weighting	Possible Points
Novelty	25%	6
Replicability	25%	6
Level of Challenge	25%	6
Approach	25%	6
Totals	**100%**	**24**

2.1. Submission Package Instructions and Details

Team information, general questions, and the five sections of the Phase 2 submission package are described below. To assist teams, DOE is providing elective templates to illustrate the types of information needed to evaluate whether teams meet minimum requirements in the associated critical success factors. Teams are not required to use these templates, but submissions should address the substantive measures in the template outlines and described in this Rules document. All submission items are mandatory unless specifically identified as optional. Please follow page limits and formatting guidelines for all uploaded documents. All uploaded items should be converted into pdf files. Please

adhere to page limits specified for each uploaded item using 11-point Calibri (or similar) font for text and tables with 1" page margins.

Team and General Information

List basic information about your team. Responses to questions with an asterisk (*) may be made public.

- Team name*
- Team image (optional)*
- Team location(s)* (city and/or state where building upgrade initiative is anticipated to take place)
- Lead Organization name*
- Team Member Organizations* (as known at time of submission) include organization name, website (optional), and point of contact name/email/phone number from each Team Member Organization.
- Designated Prize Recipient(s) (legal entity that can receive prize funds; may be different from the Lead Organization and may be a fiscal sponsor): up to two Prize Recipients may be identified for Equity-Centered Innovation Pathway teams and one Prize Recipient may be specified for Open Innovation Pathway teams. More information on the distribution of prize funds can be found in Sections 4.6.2 and 4.6.3.
- Prize Pathway* (Equity-Centered Innovation Pathway OR Open Innovation Pathway)
- Which technologies does your pilot building upgrade initiative include? (See Section 4.3 for technology requirements)
    - Efficient electric heating and cooling equipment (i.e., heat pumps and/or heat pump water heaters, geothermal heat pumps) (required)
    - Weatherization and envelope improvements (e.g., insulation, air sealing, window improvements) where needed to reduce energy costs (required)
    - Energy-related health and safety measures (to the extent relevant and necessary)
    - Efficient electric appliances (optional)
    - Electric vehicle chargers (optional)
    - On-site and/or community solar (optional)
    - Electric panel upgrades (optional)
    - Building controls (optional)
    - Energy storage (optional)
    - Other (optional) write in_____

- Indicate the building types to be addressed during the **technology demonstration and if a new demonstration will be completed or if a report from a prior demonstration will be used**. Select all building types that apply:

  Single Family
  1) new demonstration 2) existing demonstration report

  Multifamily
  1) new demonstration 2) existing demonstration report

  Small Commercial (less than 25,000 SF)
  1) new demonstration 2) existing demonstration report

  Large Commercial (25,000 SF or greater)
  1) new demonstration 2) existing demonstration report

- Indicate the number of upgrades planned during the (~12 month) pilot building upgrade initiative. Select all building types that apply:

  Single Family – Choose the number of homes:
  1) 1-9 2) 10-50 3) 50+

  Multifamily – Choose the number of units:
  1) 1-9 units 2) 10-49 units 4) 50+

  Small Commercial (less than 25,000 SF) – Choose the number of separately metered spaces:
  1) 1-9 2) 10-49 3) 50+

  Large Commercial (25,000 SF or greater) – Choose the number of buildings:
  1) 1 2) 2-9 3) 10-99 4) 100+

- As part of the team's vision for the **full-scale building upgrade initiative**, provide an estimate of the number of buildings/units targeted for full-scale implementation. Select all building types that apply:

  Single Family – Choose the number of homes:
  1) 100-500 2) 501-999 3) 1000+

  Multifamily – Choose the number of units:
  1) 100-500 2) 501-999 3) 1000+

  Small Commercial (less than 25,000 SF) – Choose the number of separately metered spaces:
  1) 100-500 2) 501-999 3) 1000+

  Large Commercial (25,000 SF or greater) – Choose the number of buildings:
  1) 10-100 2) 101-500 3) 500+

- **Is the pilot fully defined at this point (i.e., all technology demonstration and pilot sites and activities are known)?**
  Yes ☐ | No ☐

- **Do the planned projects fit within the parameters listed in Appendix 4.6.14?**
  Yes ☐ | No ☐

For Innovation Bonus Prize Applicants only (optional):

- With which category does your innovation(s) most align? (Choose up to two)
  - Energy-Related Health and Safety Measures
  - Finance and Funding
  - Workforce Development
  - Community Engagement
  - Wild Card (open to any innovation)

- Which building type(s) does your innovation(s) address? (Choose all that apply)
  - Single-family residences

- Multifamily residences
- Small commercial buildings (≤25,000 square feet)
- Large commercial buildings (>25,000 square feet)

- What building occupant types does your innovation(s) address? (Choose all that apply)

  - Owner-occupied
  - Renter

- Which Building America climate zone(s) is/are applicable for your innovation(s)? (Choose all that apply)

  - Hot Humid
  - Hot Dry
  - Mixed Humid
  - Mixed Dry
  - Marine
  - Cold
  - Very Cold
  - Subarctic

More information and the Building America Climate Zone Map available at: https://www.energy.gov/eere/buildings/articles/building-science-based-climate-maps-building-america-top-innovation.

Section 1: Analysis and Engagement Activities and Outcomes

In Phase 2, teams engage in planning activities to shape their Technology Demonstration and Pilot Initiative Implementation Plans. In Section 1, upload documentation to summarize your team's analysis and engagement activities. The Analysis and Engagement Report should summarize your Phase 2 activities in all areas as described in the outline below. Additional supporting documentation will provide further details about your process and results that shaped the Technology Demonstration and Pilot Initiative Implementation Plans. Reviewers will evaluate this information to determine whether your team has met the applicable minimum criteria. Teams should identify where each critical success factor and minimum criteria and/or best practices are addressed in each section of the submission package in the Critical Success Factor Checklist, to be uploaded in Section 1. If applicable as discussed below, upload a request for exemption from a minimum requirement and/or number of upgrades must be uploaded in Section 1. Exemptions are not available for Critical Success Factor 3a, which states that teams must propose to install at least a heat pump or heat pump water heater as part of every upgrade.

Uploaded Items

All uploaded items are mandatory unless specifically noted as optional.

1. *Critical Success Factor Checklist*: Indicate which minimum requirements are addressed in each area of your Phase 2 submission by identifying the critical success factor number and minimum requirement letter and associating that with the portion of your submission reviewers shall evaluate to determine whether that minimum requirement has been met.

2. *Phase 2 Analysis and Engagement Report:* (Limit 5 pages)

i. Community Engagement and Benefits[7]*:* Describe how your team and any engagement partners designed a strategy for meaningfully involving the communities in which building upgrades are planned to take place, and others that may otherwise be impacted, in the planning process. Describe community engagement activities and discussions that helped shape the Technology Demonstration and/or Pilot Initiative Implementation Plans. Discuss any major course corrections or shifts that occurred in Phase 2 and identify the reason(s) for the team's change in direction. Describe the process your team undertook during Phase 2 to identify community priorities and needs in the building upgrade zone(s) and explain how they were incorporated into the Tech Demo and Pilot Initiative Implementation Plans. Indicate what community partnerships, roles, benefits, resources, approaches, and/or solutions were developed in collaboration with community(ies) during Phase 2. For Equity-Centered Innovation teams (optional for Open Innovation teams), specifically describe engagement with marginalized communities in your building upgrade zone and how that engagement and ongoing community leadership in your initiative have been incorporated into the Tech Demo and Pilot Initiative Implementation Plans.

ii. Stakeholder Engagement and Benefits[8]*:* Describe any stakeholder partnership or engagement activities and discussions that helped shape the Technology Demonstration and/or Pilot Initiative Implementation Plans during Phase 2. Discuss any major course corrections or shifts that occurred in Phase 2 and identify the reason(s) for the team's change in direction. Describe the process your team undertook in Phase 2 to identify stakeholder priorities and needs in the building upgrade zone(s) and explain how they were incorporated into the Tech Demo and Pilot Initiative Implementation Plans. Indicate what stakeholder benefits, approaches, and/or solutions were developed in collaboration with stakeholders during Phase 2. Teams focusing on any type of affordable housing are highly encouraged to conduct robust stakeholder engagement with affordable housing stakeholders such as Housing Finance Agencies and affordable housing owners/providers, and to indicate how that engagement has been incorporated into the Tech Demo and Pilot Initiative Implementation Plans.

iii. Financial Offering Analysis: Describe the analysis done to determine how much total financing/funding is needed to meet the demand of the pilot initiative and how much of the upfront cost should be covered by available financing and funding programs and why this is sufficient for the intended subscriber audience in the pilot building upgrade initiative building upgrade zone(s). Equity-Centered Innovation Pathway teams should also discuss compatibility with other subsidies and how the team confirmed the initiative's financial offerings are compatible with other subsidies offered for affordable housing or underserved commercial buildings, as applicable.

iv. Workforce and Supply Chain Analysis: Describe the approach your team took to determine whether there is an adequate volume of qualified local installers and/or contractors and equipment available to fulfill the demand you anticipate in the Technology Demonstration Plan and/or Pilot Initiative Implementation Plan. Summarize the results and indicate whether deficiencies are addressed in the Tech Demo and/or Pilot Initiative Implementation Plan. Describe the extent to which the local workforce and contractor business community are reflective of the communities being served, and if not, how deficiencies will be addressed in the Tech Demo and Pilot Initiative Implementation Plans.

[7] See glossary for definition.
[8] See glossary for definition.

v. Building Stock Analysis and Technology Offerings*:* Describe the approach your team took to determine the appropriate technologies and installation goals for the various building types in the planned pilot building upgrade initiative building upgrade zone(s). This analysis should cover all technologies planned in the Pilot Initiative Implementation Plan and address climate zone, building type, and existing building system conversions where applicable. The analysis should also indicate which envelope upgrades or weatherization measures are needed to maintain or reduce energy bill costs. Teams should evaluate the building upgrade zone(s). and the specific sites where technology demonstrations will take place.

*3. Community Accountability Plan Summary: (*Limit 5 pages) Summarize your initiative's plan for being accountable to the community being served. Identify multiple benefits to the community (e.g., workforce opportunities, reducing energy burden) and how you will measure progress on delivering benefits though the pilot building upgrade initiative. Indicate where and how your team will communicate important information and opportunities for engagement with the community

4. Affirmations of Engagement from community members: Please include all affirmations in one uploaded PDF file document in Section 1. No page limit. Include at least one letter affirming the level and type of engagement from a community member where building upgrades are expected to take place. Examples of affirmation of engagement may include attestation from a homeowner or tenant, document from a housing authority or other legal entity with newly formed policies or bi-laws to formalize community and/or tenant engagement and acceptance prior to building upgrades taking place, etc. Affirmations of engagement demonstrate how the community member was engaged, whether that engagement was tailored to meet their needs, whether at least one community member was invited to participate in planning and decision-making activities, and whether the community's input was taken into consideration during the planning and decision-making process.

5. Letter(s) of Support from stakeholders (Optional): Please include all affirmations in one uploaded PDF file document in Section 1. No page limit.

6. Building Stock Analyses/Technology Selection Report(s): ResStock™, ComStock™, or other analyses to demonstrate that the planned technologies and strategies included in the Tech Demo and/or Pilot Initiative Implementation Plan are appropriate for the building upgrade zone(s) and likely to result in bill savings and/or other benefits for building upgrade recipients. No page limit. Please compile all documentation into one PDF file.

7. Request for Exemption from a Minimum Requirement and/or Number of Upgrades Guidelines (Optional): Limit 3 pages. In the event a minimum requirement or suggested number of initiative upgrades appears inapplicable to a team's Phase 2 submission, a rationale for exclusion from such element must be uploaded in Section 1. DOE expects such instances to be rare but may consider exclusions where sufficiently justified. DOE will not consider time, budget constraints, or inability to install the minimum technologies as a valid reason for not meeting a minimum requirement. Please identify which guideline(s) or minimum requirement(s) should not apply and provide a rationale for each.

DOE will provide the following elective Section 1 submission templates on the Buildings UP Community Site as part of the training webinars beginning in January. The templates are provided for the administrative convenience of the Teams. Use of the templates is not required.

- Critical Success Factor Checklist
- Phase 2 Analysis and Engagement Report
- Community Accountability Plan Summary

Section 2: Technology Demonstration Plan or Technology Relevance Report(s)

Teams must plan to demonstrate each of the minimum technologies that will be offered in the pilot initiative in at least one of each building type that will be upgraded in the building upgrade zone(s). Teams have two options for demonstrating the minimum technologies included in their Pilot Initiatives that are suitable for the building type(s) and climate zone(s) they plan to target. (See minimum requirements in Critical Success Factor 3.) They either must (1) execute a technology demonstration and submit a Tech Demo Plan and associated supporting documentation or (2) reference prior relevant technology demonstrations or a minimum of three prior relevant installations in a Technology Relevance Report and include associated supporting documentation. Teams may utilize both options to address all minimum technologies planned for their pilot initiatives.

Option 1: Technology Demonstration Plan. Teams must complete a technology demonstration if the technologies planned for the pilot initiative have not been demonstrated or successfully installed three times in the climate zone and building type in the past. The building upgrade technologies and strategies offered in the Technology Demonstration Plan must be based on analysis of the building stock in the building upgrade zone(s) to ensure the offered upgrades are appropriate for the building type and climate zone. The analysis must include evaluation of energy bill impacts and indicate whether envelope upgrades and weatherization measures must be included to maintain or reduce energy bill costs. Teams are encouraged to include weatherization in the tech demo if anticipated to be needed in the pilot initiative to reduce energy costs for subscribers. See Section 4.6.14 regarding the applicability of the NEPA to technology demonstrations.

Option 2: Technology Relevance Report. Teams may alternatively reference an existing report from a prior technology demonstration or submit a report based on a minimum of three prior relevant installations of each of the minimum technologies offered in the Pilot Initiative to demonstrate technology suitability for the building type and climate zone.

Table 5. Table Showing Two Options for Demonstrating Technology Suitability for Climate Zone(s) and Building Type(s)

	Option 1: Tech Demo Plan	**Option 2: Technology Relevance Report**	
What is it?	Document describing a future installation that is studied to demonstrate the tech is suitable for the climate zone and building types in the planned Pilot Initiative. (Limit 15 pages)	Document comparing one prior technology demonstration or three prior installations with the offerings in the planned Pilot Initiative for every climate zone and building type included in the Pilot Initiative. (Limit 15 pages)	
When am I required to use it?	If the minimum technologies planned for the Pilot Initiative (i.e. heat pumps and/or heat pump water heaters and weatherization upgrades where needed) have not been successfully deployed in the climate zone and/or building type.	Optional to use. Teams may choose this option if they can demonstrate through prior installations or tech demos that the minimum technologies work in their planned Pilot Initiative building types and climate zones.	
What supporting documentation is required for my Tech Demo Plan or Technology Relevance Report?	• Letters or Support / Commitment • Technical Specifications of Equipment / Cut Sheets	If referencing prior tech demos: • Full Tech Demo Report	If referencing prior installations: • Letters of Confirmation

Teams can utilize Buildings UP Technical Assistance[9] awarded under Phase 1 and engage Technical Assistance Providers to support an analysis to verify whether the technologies planned are appropriate for the climate zone and building type(s) in the building upgrade zone(s) during Phase 2. TA Providers can also help locate a report from a reputable third party or help identify relevant prior installations.

Teams must demonstrate that at the time of the Phase 2 submission they are positioned to execute the technology demonstration(s) unless a technology relevance report and associated required supporting documentation that demonstrate the suitability of the technology(ies) are submitted. Any information submitted about prior technology demonstrations or installations should include a description of how they are relevant to the planned pilot initiative.

Uploaded Items:

1. ***Option 1. Technology Demonstration Plan***: Teams executing technology demonstrations must upload a Technology Demonstration Plan (Limit 15 pages) and associated supporting documentation.

   Technology Demonstration Plan Template (outline)

   i. Demonstration Project Summary: Summarize the objectives of the technology demonstration to validate the applicability and effectiveness of the technologies included in the Pilot Initiative Implementation Plan.

   ii. NEPA Determination Number: include the NEPA determination number and summarize the outcome of the NEPA determination received for the technology demonstration site.

   iii. Demonstration Summary Table: Provide the planned technology demonstration site characteristics including building type, general location, existing fuel type of any equipment to be replaced, technologies planned (brands, sizes, model numbers), anticipated installation date, duration of tech demo (from breaking ground to end of data collection), and installation company/contractor.

   iv. Demonstration Project Budget Table: Provide the anticipated installation costs and funding/financing source for the tech demo(s).

   v. Data Collection Plan: Provide details of who will install and monitor the technology demonstration, what data will be collected, how it will be collected, and over what timeframe. Indicate the items you are testing prior to the pilot building upgrade initiative rollout.

   vi. Quality Assurance/Quality Control: Describe how the team will ensure installations are of high quality and performed by trained installers/contractors with minimal disruption to occupants, and other quality considerations.

   vii. Anticipated Outcomes from the Tech Demonstration(s).

   viii. Risk Assessment and Mitigation Plan: Describe all potential risks to the technology demonstration plan and strategies for how they will be mitigated (e.g., having backup sites ready if needed, timeframes for securing qualified installers/contractors, risks to occupants).

[9] Note that technical assistance hours are limited to 140 total hours per Equity-Centered Innovation Pathway team and 100 total hours per Open Innovation Pathway team.

Technology Demonstration Plan Supporting Documentation for Option 1:

Letters of Support or Commitment from tech demo partners including tech demo site owners (and renters where applicable), contractors and financiers/funders (if applicable) confirming their involvement/contributions to the project. No page limit. Please compile all letters of support and commitment into one uploaded file.

Cut Sheets or Technical Specs for each technology included in the technology demonstration plan. No page limit. Please compile all specs and cut sheets into one uploaded file.

2. ***Option 2. Technology Relevance Report*** (Limit 15 pages): Compare one relevant prior technology demonstration or a minimum of three relevant prior installations of each type offered in your planned pilot initiative. Complete a table and summary of how the prior demonstration(s) and/or installations are applicable to the planned pilot upgrade scenarios. Each building type and climate zone included in your pilot initiative must be compared to a minimum of one prior relevant technology demonstration or three prior relevant installations to meet minimum requirements in Critical Success Factor 3.

   Technology Relevance Report Template (outline)
   Compare the prior tech demo(s) or prior installation(s) and the proposed pilot initiative upgrades in each of the areas listed below in a side-by-side table format for items i- vi. Item vii does not need to be submitted in table format. Note that each prior installation must be compared on a separate table, so teams referring to prior installations will upload a Technology Relevance Report with three repeating tables and summary (items i-vii will be included for each of the three prior installations, in one Technology Relevance Report). Indicate 'NA' if the information is not applicable or 'NR' if not relevant:

   i. Overview:
      a. Description: Describe the space and/or water heating and/or cooling loads and proportion of those loads that the heat pump and/or heat pump water heater is expected to serve. Indicate what proportion of this service a backup fuel system is expected to provide (if applicable) and identify whether the backup system is an existing or new system. Include any other information your team deems important to explain the context of this technology demonstration.
      b. Zip code where installation took place
      c. Year installation took place
      d. Climate zone
      e. Utility service provider
      f. Building type
      g. Building size
      h. Household size/Building occupancy
      i. Primary use of residence/building
      j. Equity-eligible building (Y/N)

   ii. Pre-upgrade Information and Building Characteristics
      a. What was installed prior to the retrofit/what is getting replaced?
      b. Building HVAC distribution system type (ducted, central, distributed, etc.)
      c. Pre-retrofit fuel source
      d. Energy-related pre-retrofit upgrades needed (e.g., health and safety measures, panel upgrade, weatherization)
      e. Equipment installation location/constraints (e.g., in-unit, closet, mechanical room)

f. Condition of the equipment location (e.g., conditioned, unconditioned, semi-conditioned space), indoor and/or outdoor units.
g. Was cooling provided prior to the upgrade?
h. Was advanced metering or smart thermostat control available pre-upgrade?
i. Rough size of the area/room/closet where indoor equipment is/will be installed.

iii. Design Considerations
a. Did/will the system include back up/dual fuel? If so, was/will the backup fuel system (be) new or existing?
b. Was/is the equipment intended to provide all heating for the home/unit/building or partial? What are the expected scenarios for the pilot initiative?
c. Was/is the new equipment intended to provide all space cooling for the home/unit/building or partial? What are the expected scenarios for the pilot initiative?
d. What load calculations were/will be done (e.g., heating, cooling, and latent loads) in the tech demo and pilot initiative?
e. How was/will humidity be monitored and managed?
f. How was/will noise level be monitored and managed?
g. How was/will airflow be monitored and managed?
h. Describe other design considerations involved with the prior tech demo and considerations you expect to see in the pilot initiative.

iv. Post-Upgrade Information
a. Equipment type (e.g., air-source heat pump, heat pump water heater)
b. Equipment model name and number
c. Equipment capacity/tank size/voltage rating
d. Equipment efficiency rating(s) (e.g., Heating Seasonal Performance Factor [HSPF2], Seasonal Energy Efficiency Ratio [SEER2])
e. Compressor type (e.g., variable speed)
f. Sound level/performance (dBA)
g. Post-retrofit fuel source
h. Backup fuel type (if applicable)
i. List any pre-retrofit upgrades needed (e.g., health and safety measures, panel upgrade)
j. Equipment installation location/constraints (e.g., in-unit, closet, mechanical room)
k. Condition of the equipment location (e.g., conditioned, unconditioned, semi-conditioned space)
l. Installation challenges and/or adjustments made to alter the location to accommodate the equipment

v. Data Collection and Results
a. Data collection timeframe (i.e., period for which the information is relevant)
b. Data collected
c. Data Collection methodology (e.g., collected through interviews, summarized from tech demo report)

vi. Financial Impacts: Teams may work with TA Providers to extrapolate future pilot initiative financials based on prior tech demo or prior installation equipment performance using current costs, incentives and utility rates.
a. Installed cost
b. Incentives, rebates applied
c. Net cost to customer

d. Annual pre-retrofit energy bill (e.g. electricity, gas, heating oil, etc.)
e. Annual post-retrofit energy bill (e.g. electricity, gas, heating oil, etc.)
f. Energy rates per kWh, therm, etc. (for prior installation/Tech Demo and current)
g. First year energy bill impacts (anticipated savings or increase)- Use prior installation/Tech Demo energy performance and calculate energy bill impacts using current energy rates.

vii. Summary of Results, Relevance, and Lessons Learned: Teams will summarize the results of the tech demo or prior install, how the tech demo or prior installation is relevant to their pilot initiative, what lessons were learned to how they plan to apply those lessons to their pilot initiative.

a. Summarize performance results
b. Summarize occupant feedback
c. Identify any other challenges or items your team considered in selecting this tech demo.
d. Summarize how the team will mitigate any negative experiences from this technology demonstration in the pilot initiative.
e. Team Summary of Tech Demo / prior installation results and relevance to their pilot initiative.

Technology Relevance Report Supporting Documentation for Option 2:

Technology Demonstration Report: Teams referencing prior technology demonstrations should upload the full report(s). (Applicable for Technology Relevance Reports referencing prior tech demos.) No page limit. Please compile all reports into one uploaded file.

Letters of Confirmation: Verify information from prior installations from contractors, customers (e.g., homeowners, renters, building tenants where the equipment is installed), or program administrators overseeing installations. (Applicable for Technology Relevance Reports referencing prior installations.) No page limit. Please compile all pages into one uploaded file.

Cut Sheets or Technical Specs for each technology included in the technology demonstration plan. (Optional.) No page limit. Please compile all specs and cut sheets into one uploaded file.

DOE will provide the following elective Section 2 submission templates:

- Technology Demonstration Plan
- Technology Relevance Report- Prior Tech Demo
- Technology Relevance Report – Three Prior Installations

The templates are provided for the administrative convenience of the Teams. Use of the template is not required.

Section 3: Pilot Initiative Implementation Plan

The building upgrade zone(s) represented in the Pilot Initiative Implementation Plan must include installations of the minimum technologies as described in Section 4.3 in at least 10–50 homes (single family)/units (multifamily)/separately metered spaces (small commercial), and/or at least 2 buildings (large commercial) (see Tables 2 and 3). The Pilot Initiative Implementation Plan must address the items to be tested during the pilot initiative period that will inform a full-scale building upgrade initiative (e.g., attracting subscribers, quality installation assurance, financing and funding packages, technology performance). Multiple benefits may be incorporated into the Pilot Initiative Implementation Plan (e.g.,

reducing energy burdens, achieving long-term housing affordability and stability, reducing pollution, building local workforce, incorporating economic inclusion strategies).

Teams can engage Buildings UP Technical Assistance Providers and Regional Navigators to assist with each topic included in the Pilot Initiative Implementation Plan during Phase 2. Technical Assistance Providers and Regional Navigators are prohibited from writing any portion of a team's Pilot Initiative Implementation Plan. Teams will be disqualified if Technical Assistance Providers and/or Regional Navigators write any portion of their Phase 2 narratives or plans.

The templates are provided for the administrative convenience of the Teams. Use of the templates is not required.

Uploaded Items:

1. *Pilot Initiative Implementation Plan* (Limit 25 pages)

    i. Pilot Initiative summary: Summarize the planned pilot building upgrade initiative including anticipated volume of upgrades, general description of the building upgrade zone(s), building types, technologies offered, and how long the pilot initiative is expected to last before scaling up to a full-scale building upgrade initiative.

    ii. Provide a summary table listing the technologies and funding services offered through your pilot initiative. Include the intended subscriber audience and eligibility criteria or qualifiers (e.g. energy efficiency rating of the equipment to be installed, income qualifications of the subscriber, working with an approved contractor, etc.) for obtaining financial support to implement the building upgrade(s).

    iii. Team Capabilities, Roles and Responsibilities*:* Describe each team member organization's capabilities and why they are qualified to carry out the activities and areas of responsibility assigned in the Pilot Initiative Administrative Budget and Staffing tables (separately uploaded document) Indicate which organizations have decision-making power and responsibilities over what areas of the planned pilot building upgrade initiative. Indicate whether there are handoffs between team members and how this coordination will be managed. Describe any community leadership and participation in initiative decision-making. Please describe any staffing or team member changes during Phase 2.

    iv. Pilot Initiative Technologies, Metrics, and Goals: Describe the technologies being offered, the metrics your team plans to measure to test building upgrade scenarios and track progress throughout the pilot building upgrade initiative. Identify the elements of the pilot initiative that you will track and evaluate prior to planning a full-scale building upgrade initiative. Potential items to consider may include but are not limited to: subscriber satisfaction, occupant comfort, training accessibility, financial offering uptake, outreach effectiveness, etc. Identify the key questions to be considered in the pilot initiative and hypothesize how your full-scale initiative may change based on the results of the pilot initiative.

    v. Subscriber Strategy: Describe the intended subscriber audience (demographics), eligibility criteria, intended approach for attracting subscribers, and process for subscribers to participate in the pilot building upgrade initiative. Describe how your strategy and pilot design features (e.g. initiative program model) will overcome common barriers to upgrades for your intended subscriber audience.

    vi. Approval Processes: Identify the approvals needed to enable building upgrades and describe the steps a subscriber must take to obtain approvals (e.g., historic preservation,

building permits). See Section 4.6.14 regarding the applicability of NEPA (42 U.S.C. § 4321, et seq.).

vii. Funding and/or Financing Options: Describe the funding and financial offerings to support building upgrades in the pilot building upgrade initiative. Include information regarding the total amount of funding available for the pilot initiative from each source for building upgrades and how many upgrades that funding is anticipated to support. Discuss the proportion of costs the financial offering is expected to cover, for whom (building owners, renters, etc.), and what change in cost, if any, building occupants will experience. Describe how your strategy is appropriate to the specific contexts and constraints of the building type(s) that you are working with.

viii. Workforce and Supply Chain Capacity: Indicate whether there are enough qualified local installers/contractors available to support the pilot and describe their capacity to perform the work necessary to enable pilot building upgrade initiative success. If applicable, describe your plan for expanding the workforce to build the capacity of installers/contractors. Identify the type of training and/or certifications needed to support all technologies offered in the pilot initiative and identify training partners if training programs are needed. Indicate how your pilot initiative will help companies take steps to ensure jobs supported by the initiatives adhere to the Department of Labor's Good Jobs Principles[10] Confirm whether residential workforce credentials earned through or in connection with the pilot initiative have or will achieve DOE Energy Skilled recognition.[11] Identify what equipment is needed to support the pilot building upgrade initiative and discuss any supply chain deficiencies and plans to remedy those deficiencies. Describe any strategies you will use to enable economic opportunities and provide multiple benefits for installers/contractors through your initiative.

ix. Quality Assurance: Describe the elements of your pilot initiative that will ensure installations are of high quality and that subscribers have a positive experience. Include any other quality assurance aspects of your pilot initiative. Describe your plan to address grievances from unsatisfied subscribers, including renters/tenants, as well as nonfunctioning equipment or equipment malfunctions.

x. Risk Assessment and Mitigation Strategies: Describe potential risks and mitigation strategies to ensure a successful pilot building upgrade initiative. Include information about approaches that have not been successful in the past and how the plan rectifies such shortcomings.

   a. Include risks to implementation of the pilot building upgrade initiative (e.g., changes in key personnel or organizations on the team, pilot building upgrade sites that become unavailable or unsuitable, workforce and supply chain capacity, financing and funding availability, permitting and approval processes, participation rates, community acceptance).
   b. Include risks to subscribers and others from building upgrades (e.g., risks that building upgrades may lead to rent or utility bill increases, occupant displacement, gentrification, and lack of community decision-making power and influence). Specify mitigation strategies for any risk deemed significant or likely to occur.

[10] https://www.dol.gov/general/good-jobs/principles
[11] Submit for Recognition | DOE Energy Skilled (energy.gov)

2. *Pilot Initiative Administrative Budget and Staffing Tables* - Include three tables (1) Pilot Initiative Funding Table listing all funding sources (prize and non-prize funding) and budget needs to administer the pilot initiative plan; (2) a budget and staffing table that includes team member organizations, the percentage of full time equivalent staff dedicated to the Pilot Buildings Upgrade Initiative, the associated budget and which areas each organization is leading and supporting; and (3) a table denoting a budget by activity and roles per organization showing leading and supporting roles and overarching areas of responsibility.
3. *Affirmations of Team Involvement* from team members[12] verifying their involvement, budget, and roles as stated in the Pilot Initiative Implementation Plan. No page limit. Please compile all documents into one uploaded file.
4. *Letters of support* from partners[13] who are supportive of the initiative described in the Pilot Initiative Implementation Plan. (No page limit. Please compile all letters of support and agreements into one uploaded file.
5. *Communications and Outreach Materials*: Draft or final materials to be used to enlist subscribers (e.g., newsletters, flyers, social media campaigns). No page limit. Please compile all materials into one uploaded file.
6. *Consumer Protection and Disclosure Form*: DOE will not evaluate the legal sufficiency of the disclosure and it is the Team's responsibility to ensure that any consumer protection and disclosure complies with any legal requirements of the applicable jurisdiction. The team's protection and disclosure document should address documentation to ensure subscribers and renters (if not the subscriber) are aware of the work to be conducted, the costs and savings associated with the upgrade(s), required access to conduct the work, the process for identifying and addressing energy-related health and safety measures (where applicable), any warranties, and the process for filing and addressing complaints. No page limit.
7. *Pilot Initiative Pitch Deck:* To assist teams, DOE is providing a template deck, but teams may create their own slide deck addressing all information requested in the template to describe their pilot initiative. (Limit: up to 20 slides)

DOE will provide the following elective Section 3 submission templates:

- Pilot Initiative Implementation Plan
- Pilot Initiative Budget and Staffing Workbook
- Pilot Pitch Deck

The template is provided for the administrative convenience of the Teams. Use of the template is not required.

[12] See the glossary for definitions.
[13] See the glossary for definitions.

Section 4: Full-Scale Building Upgrade Initiative Vision

The full-scale building upgrade initiative vision should include initial steps anticipated to transition to a full-scale building upgrade initiative in the building upgrade zone, including a high-level budget. Describe the team's anticipated approach to scaling up and replicating from the pilot scale to a full-scale initiative (see Tables 2 and 3 for guidelines). Identify what areas of the pilot initiative you will test prior to scaling.

To assist teams, DOE is providing an optional template to illustrate the types of information needed to evaluate whether teams meet minimum requirements in the associated critical success factors. Teams are not required to use this template, but submissions should address the substantive measures in the template outline.

Uploaded Items:

1. Full-scale building upgrade initiative vision (Limit: 2 pages)

i. *Overview Vision*: include information about the envisioned scale (number of buildings, building types) within the building upgrade zone, replicability in other locations or building types as applicable, and your approach to scaling up and replicating strategies detailed in the pilot initiative plan.

ii. *High-level Full-Scale Building Upgrade Initiative Administrative Budget and Staffing table*: using a similar structure to the Pilot Initiative Administrative Budget and Staffing table, revise the three tables with high-level budgetary information regarding the level of funding, staff and team member organizations needed to scale to your full-scale initiative. The three tables include- (1) Full-Scale Initiative Funding Table listing anticipated funding needs to administer a full-scale initiative; (2) a budget and staffing table that includes team member organizations, the percentage of full time equivalent staff needed to support a full-scale initiative, the associated budget for each team member organization and additional organizations that may need to be added to the team to support a full-scale initiative; and (3) a table denoting a budget by activity including additional activities that may be needed to support a full-scale initiative.

DOE will provide the following optional Section 4 submission template:

- Full-Scale Building Upgrade Initiative Administrative Budget and Staffing Workbook

The template is provided for the administrative convenience of the Teams. Use of the template is not required.

Section 5: Innovation Bonus Prize (Optional)

Teams competing for the Innovation Bonus Prize should describe their innovative approach(es) to overcoming persistent challenges to building upgrades in their building upgrade zone(s) and articulate how the approach(es) could be applicable in other communities or for other building types. Application of novel technologies is not the aim of the innovation bonus prize.

Innovation Bonus Prize categories are:

1. Energy-Related Health and Safety Measures
2. Finance and Funding
3. Workforce Development
4. Community Engagement

5. Wild Card (open to any innovation)

Examples of innovation may include items such as:

- A new approach for overcoming a persistent challenge in implementing building upgrades.
- An expansion of an existing approach to a new audience or building type that is likely to overcome persistent challenges.
- A novel way to ensure installers are trained and installations are high quality or to conduct quality assessments.
- A new approach to creating job and economic opportunities for disadvantaged communities.
- Use of a novel approach to installations.
- Innovative funding combinations and financing to reduce upfront costs of equipment and installation, such as leveraging multiple sources of funding (e.g., combining federal rebates, state and local funding sources, and philanthropic funds to reduce the direct cost of upgrades to building owners).
- Novel approaches to reduce soft costs (e.g., subscribers and maintenance, permitting, labor, quality assurance).
- Scalable and replicable initiative models that streamline the implementation of energy efficiency and efficient electrification upgrades (e.g., streamlined audits, permitting, contractor engagement, and installation).
- Attractive business models or novel approaches that incentivize manufacturers and contractors to produce and install heat pumps, insulation, and other products that enable energy efficiency and efficient electrification upgrades.
- Implementation of energy efficiency and efficient electrification solutions among a broader range of stakeholders through robust stakeholder engagement, community participation in planning and implementation, communications campaigns, setting public goals and maintaining accountability to goals and community priorities, and promoting initiative successes.
- High-quality installations and upgrades for optimal performance through streamlined quality assurance/quality control and workforce training support.
- Innovation in community engagement, leadership structures, and shared decision-making.
- Innovation in providing multiple types of benefits to communities (e.g., workforce and contractor development, renter protections, improvements to energy-related health and safety measures, housing affordability, integration with solar).
- Innovation in program design (e.g., overcoming high transaction costs and limited subscriber bandwidth).
- Innovation in partnership (e.g., partnering with key stakeholders who hold key relationships but are not traditionally involved in energy-focused building upgrade initiatives such as the state housing finance agency or local housing trust funds).
- Innovation in subscriber acquisition strategies that maintain quality (e.g., streamlined methods for effectively recruiting subscribers).

A. **Narrative: (up to 2,500 words)** Describe the elements of your Pilot Initiative Implementation Plan that represent an innovative approach in the building upgrade zone(s), the community, or in the industry more broadly. There are four criteria to be addressed in the narrative. Each is scored on a scale from 1 to 6, explained in Section 3.2. The narrative must address:
    a. The challenge or barrier the innovation addresses and why it is a novel approach to overcoming the challenge.
    b. The elements of your innovation that make it applicable to other regions, communities, or building types.

c. The challenge and the steps it took to understand it. Include information to help reviewers determine how prevalent, persistent, or difficult the challenge is to address.
d. Your team's capabilities related to implementing the innovation.

B. Supporting Documentation

a. (Optional) Letters of support to support the narratives in each criterion. No page limit. Please put all letters of support in one uploaded file.

b. (Optional) One page of graphics, photos or other information to support your submission.

2.2. How To Enter

Sufficiency Determination for a Technology Relevance Report

Teams utilizing a technology relevancy report to demonstrate technology suitability for the climate zone and building type may seek a determination of the sufficiency of the report from prior to submitting a full Phase 2 submission package by emailing buildingsUP@nrel.gov with the subject line: "TEAM NAME - Review Request - Technology Relevance Report". DOE will review only complete reports with all information from the Technology Relevance Report outline in Section 2.1.3. Reports must include three prior installations or one prior technology demonstration for each of the minimum technologies and building types for each climate zone included in the pilot initiative. If referring to a technology demonstration, teams must also include the full technology demonstration report in the email as an attachment. If referencing prior installations, teams must also include letters of confirmation from the building upgrade customer or contractor to confirm the information in the report.

DOE will evaluate the following questions to determine whether the prior tech demo and/or installations are relevant to the planned pilot initiative:

1. Is the team testing building upgrade scenarios in the same building type with similar usage patterns and weather/climate zone/seasonal conditions as the planned pilot initiative?

2. Is the team comparing similar equipment, with similar outputs and efficiency levels, in similar design and installation conditions?

3. Do the extrapolated financial estimates and occupant experience from past installations and/or tech demos indicate that the pilot upgrades can be anticipated to save pilot initiative subscribers money on energy bills or provide an added benefit such as cooling and improved comfort to occupants?

Phase 2 Submission

Phase 1 winning teams interested in competing under Phase 2 of Buildings UP should go to HeroX and follow the instructions for submitting all required materials before the specified Phase 2 submission deadline. There will be a quarterly opportunity for teams to submit their Phase 2 submission package (at 6, 9, 12, 15, and 18 months after Phase 2 opening). Teams with applications not receiving a passing score will be permitted to re-submit a revised application once during the 18-month period. All applications (i.e., initial submissions and re-submissions) must be received by the end of the 18-month period.

Innovation Bonus Prize Submission

Applications must be submitted with the Phase 2 submission. Innovation Bonus Prize submissions will be evaluated at the conclusion of Phase 2.

3. How Phase 2 Submissions Are Evaluated

This section explains how the Phase 2 Plan Prize awards and Phase 2 Innovation Bonus Prize awards are determined.

3.1. Phase 2: Plan Prize Evaluation Criteria

Recognizing that each team will be navigating a different set of challenges, the critical success factors are intended to ensure teams have thoughtfully considered each area vital for a successful pilot building upgrade initiative rather than to prescribe a certain solution or approach. Teams must meet all minimum requirements in all critical success factors in their submission materials to be awarded a Phase 2 Plan prize.

3.1.1. Critical Success Factor 1: Team and Pilot Initiative Administrative Budget and Staffing

Minimum Requirements	Best Practices
Both Pathways a. At least one FTE is dedicated to the pilot initiative (may be spread across multiple people/organizations). b. Team members reflect the capabilities necessary to successfully implement the tech demo and pilot Initiative. c. Team provides supporting documentation verifying each team member's involvement in the effort. d. Budget is adequate for each team member to carry out their tasks. *Equity-Centered Innovation Pathway* e. Team includes a community-based organization (CBO)[14] or entity representing the community being served that has a lead role in, or significantly contributes to decision-making in multiple critical success factors and is consulted on decision-making for all critical success factors. f. Budget is adequate for the CBO or entity representing the community/communities being served.	*Both Pathways* a. More than one FTE is dedicated to the pilot initiative who may be spread across multiple people/organizations. (Note that this may require leveraging additional funding, over the prize award amount.) b. Team has a financing expert or organization on the team or is partnered with one who provided a letter of support to finance/fund upgrades during the pilot initiative. c. Team includes member(s) with experience completing building upgrade technology field validations and/or pilot projects. *Equity-Centered Innovation Pathway* d. Team includes one or more CBOs or entities representing the community being served that have a lead role in decision-making in most or all critical success factors.

[14] See the glossary for definitions.

Critical Success Factor 2: Community Engagement, Stakeholder Engagement, and Community Benefits

Minimum Requirements	Best Practices
Both Pathways a. Team describes a meaningful community engagement[15] process undertaken in Phase 2. b. Team describes a meaningful stakeholder engagement[16] process undertaken in Phase 2. c. Team demonstrates meaningful engagement with building owners and occupants in the building upgrade zone(s), during the Phase 2 period. d. Teams have completed or plan to complete direct engagement with occupants of technology demonstration or pilot initiative building sites. e. Team provided translation to non-English-speaking populations and to those with limited access to digital communications, and other groups that are typically neglected, where applicable. f. Inputs from the community and stakeholders were incorporated into the tech demo and/or pilot initiative design in demonstrable ways. g. Teams offered engagement sessions in different locations and different times of day to expand accessibility to engagement opportunities. h. Team describes a comprehensive and tailored stakeholder engagement process that included the following: • CBOs or entity(ies) representing the community being served • Affordable housing and tenant organizations (if focused on affordable or rental housing) • Economic and workforce development organizations • Health and safety professionals • Financing organizations	*Both Pathways* a. Team provided numerous ways to meaningfully engage with building owners and occupants in the building upgrade zone. b. Team provided a detailed description of how community input affirmed and/or shifted their initiative scope and/or design. c. The team describes opportunities for ongoing stakeholder and community engagement. d. The team describes plans to transparently share information with the communities that were engaged and to remain accountable to those communities. e. The team meaningfully engaged with a CBO and/or representatives of the building upgrade zone(s) community. f. The initiative incorporates more than one additional benefit (beyond upgrade and expected energy cost reduction) for impacted communities (e.g., training local workforce, increased housing stability). *Equity-Centered Innovation Pathway* g. Team demonstrates partnership with trusted community leaders and/or organizations to design the engagement process, to reach wide networks, and to create positive engagement experiences for historically marginalized community members. h. The budget incorporates line items for food, transportation, childcare, language interpretation, and compensation for the expertise and time shared by community members, or other means to create accessible and welcoming engagement opportunities.

[15] See the glossary for definitions.
[16] See the glossary for definitions.

• Racial, economic, environmental, and social equity organizations. i. Team demonstrated a comprehensive and tailored community engagement process that included the following: • A variety of outreach pathways and feedback/involvement opportunities that were accessible and welcoming for community members that have been historically marginalized from decision-making or have experienced disproportionately high burdens and low benefits from previous policies and programs. j. Team demonstrates that residents in the Building Upgrade Zone are supportive of the pilot initiative by providing at least one Affirmation of Engagement. k. The team incorporates at least one additional benefit (beyond upgrade and expected energy cost reduction) for impacted communities (e.g., training local workforce, increased housing stability) in their initiative. *Equity-Centered Innovation Pathway* l. CBO[17] or entity representing the community(ies) was involved in planning community engagement.	

Critical Success Factor 3: Technology Suitability for the Building Upgrade Zone(s)

Minimum Requirements	Best Practices
Both Pathways a. The initiative proposes to install at least an efficient electric heat pump and/or heat pump water heater as part of every upgrade. b. The analysis demonstrates that the proposed technologies are likely appropriate for the selected building types and climate zone. c. The analysis includes an assessment of energy bill savings or increases in the building upgrade zone(s). d. The analysis conducted includes an assessment of what buildings in the building upgrade zone(s) require energy	*Both Pathways* a. The analysis includes specific building-level energy and cost modeling for tech demonstration(s).

[17] See the glossary.

efficiency upgrades to reduce or maintain energy bill costs. e. The submission describes major changes in the technologies described in the Phase 1 Concept Plan and Phase 2 submission or notes that there were no major changes in technology offerings between Phase 1 and Phase 2 submissions. f. The team has submitted an existing report from a relevant technology demonstration, has provided a report based on a minimum of three relevant prior installations, OR has the funding, equipment, contractor, and site(s) ready to execute a technology demonstration for each building type, climate zone, and minimum technology included in the pilot initiative.* g. Data collection for the technology demonstration spans the critical season(s) for which heat pumps and heat pump water heaters and energy efficiency upgrades should be measured for the climate zone(s). **Equity-Centered Innovation Pathway** h. The analysis includes strategies for maintaining or reducing energy bill costs for low-to-moderate income households and underserved commercial buildings.	

*See Section 2.2.1 for an explanation of how relevance is determined.

Critical Success Factor 4: Pilot Initiative Technologies, Metrics, and Goals

Minimum Requirements	Best Practices
Both Pathways a. The team describes the business-as-usual installations of the minimum technologies in their building upgrade zone(s) and how their initiative approach expands on the business-as-usual. b. The pilot initiative building upgrade zone(s) includes at least 10–50 buildings/units for single-family homes, multifamily units, separately metered small commercial spaces, and/or at least 2 buildings for large commercial. c. The team has developed a process for addressing basic building repair needs and energy-related health and safety	*Both Pathways* a. The pilot initiative includes additional basic building repairs in the building upgrades within their pilot initiative offerings, where applicable. b. The pilot initiative building upgrade zone(s) includes more than 10–50 buildings/units for single-family homes, multifamily units, separately metered small commercial spaces, and/or at least 2 buildings for large commercial. *Equity-Centered Innovation Pathway* c. The team addresses multiple benefits and/or community priories (beyond building upgrade and energy cost reduction) for impacted communities

measures[18] as part of their building upgrades, where applicable and has identified funding to pay for these upgrades in accordance with all applicable local requirements and regulations. d. The team identified metrics for the pilot initiative and has a plan in place for measuring progress on those metrics (e.g., energy savings, carbon savings, energy bill comparisons), including a role for community feedback. e. The proposed pilot initiative tests the major building upgrade scenarios anticipated by the team in the full-scale initiative. f. The proposed pilot initiative tests subscriber acquisition strategies and the funding/financing approaches anticipated by the team in the full-scale initiative. *Equity-Centered Innovation Pathway* g. A minimum of 80% of the units and/or buildings identified for upgrades in the building upgrade zone(s) are equity-eligible buildings. See Section 4.4 for details.	(e.g., training local workforce, increased housing stability) identified through community and stakeholder engagement. d. More than 80% of the buildings identified for upgrades in the building upgrade zone(s) are equity-eligible buildings.

Critical Success Factor 5: Funding and Financing Building Upgrades

Minimum Requirements	Best Practices
Both Pathways a. The analysis completed shows that the pilot initiative financial package is robust enough to meet its installation goals. b. An agreement with at least one financial provider has been established when implementing a loan program. c. The team describes a plan for ensuring energy costs do not increase for low- to moderate-income households and underserved commercial buildings, unless an added benefit is provided (e.g., air conditioning from a heat pump) and occupant has accepted cost increase through a formal acknowledgment.	*Both Pathways* a. Pilot initiative subscribers have multiple options for paying for building upgrades (e.g., rebates, low-cost financing, utility bill financing). *Equity-Centered Innovation Pathway* b. The team's financial package covers 100% of the cost of upgrades for buildings in the building upgrade zone(s), including energy-related health and safety measures if needed to enable a building upgrade. c. If housing is a focus of the initiative, the team includes membership by or has

[18] Examples of health and safety measures can be found at https://www.energy.gov/scep/wap/weatherization-health-safety.

Equity-Centered Innovation Pathway d. The pilot initiative's funding package is compatible with financing requirements for affordable housing and/or disadvantaged commercial subsidies and covers at least 75% of the cost of upgrades for buildings in the building upgrade zone(s). e. The team describes a plan for ensuring accessibility of funding for building owners and/or occupants.	established a partnership with the state housing finance agency.

Critical Success Factor 6: Workforce and Supply Chain Capacity

Minimum Requirements	Best Practices
Both Pathways a. The workforce assessment shows there are enough trained workers/contractors available to install building upgrades, OR a plan is presented for developing the local workforce/contractor base. b. The assessment completed shows that equipment suppliers have the capacity to fulfill demand in the building upgrade zone(s) OR a plan is presented to address deficiencies in supply chain capacity. c. The team verified that all workers involved in the assessment and installation process (e.g., energy auditor, HVAC technicians, plumbers, electricians) are trained or will be trained to meet state and local requirements. d. Residential workforce certifications earned in connection with the initiative have applicable DOE Energy Skilled recognition. e. The team describes steps they are taking to help contractors meet one or more of the Department of Labor's Good Jobs Principles.[19]	*Both Pathways* a. The team has a workforce development plan in place to significantly increase the number of trained partners (and/or suppliers in the local area if needed) and has included agreements with supporting suppliers. b. A formal agreement such as a Community Benefits Agreement or Community Workforce Agreement is in place to ensure economic opportunities and jobs that adhere to the Department of Labor's Good Jobs Initiative[20] for underrepresented and/or under resourced workers, contractors, and suppliers where deficiencies exist. c. Residential workforce training offered through the initiative provide a certificate of completion and have applicable DOE Energy Skilled recognition. *Equity-Centered Innovation Pathway* d. The team has put robust programs in place to ensure economic opportunities and jobs adhere to good jobs principles[21] for underrepresented and/or under resourced contractors and suppliers.

[19] https://www.dol.gov/general/good-jobs/principles
[20] https://www.dol.gov/general/good-jobs/principles
[21] https://www.dol.gov/general/good-jobs/principles

Critical Success Factor 7: Subscriber Strategy and Approval Process

Minimum Requirements	Best Practices
Both Pathways a. The team has secured technology demonstration and/or pilot locations in the building upgrade zone(s) matching their intended subscriber audience. b. The outreach plan utilizes channel strategies that are likely to engage the intended subscriber audience. c. Steps to participate in the pilot building upgrade initiative are clear and straightforward. d. The team identifies the approvals that must be obtained for a building upgrade to take place including, as applicable, historic preservation, homeowner associations and building permits. e. The team includes documentation showing engagement conducted and initial support from building owners and renters participating in the technology demonstration and pilot initiative project(s), if already identified. f. The team's Consumer Protection documentation ensures subscribers and renters (if not the subscriber) must be aware of the work to be conducted, the costs and savings associated with the upgrade(s), required access to conduct the work, the process for identifying and addressing energy-related health and safety measures (where applicable), any warranties, the process for filing and addressing complaints, and includes an acknowledgement of increased energy costs due to additional service provided if applicable (e.g., air conditioning from a heat pump). Equity-Centered Innovation Pathway- **g.** The team identified barriers to participation and took steps to lower the barriers such as providing information in multiple languages, providing information sessions at different times/locations to reach underserved communities, and providing information in more ways that just online.	*Both Pathways* a. The team employs a "one-stop-shop" approach for subscribers that is clear and straightforward. b. The team provides support to obtain any required approvals including historic preservation, homeowner associations, and building permits or approvals to access a property. c. The team has contracts/agreements in place with trusted community partners to help with participant outreach. Equity-Centered Innovation Pathway a. The team worked with a trusted community partner for outreach and engagement.

Critical Success Factor 8: Quality Assurance and Consumer Protections

Minimum Requirements	Best Practices
Both Pathways a. The team addresses installation quality and subscriber satisfaction (e.g., equipment performs as expected in terms of occupant comfort, noise, energy bills). b. The team has a plan or process in place to promote proper sizing, design and installation of heat pumps and heat pump water heaters and proper installation of weatherization measures (where needed) at a minimum. c. The team identifies clear steps for a process to address grievances from dissatisfied subscribers, including renters. d. The team requires a cost analysis and a process for documenting pilot initiative subscriber disclosures, including documentation of potential increases in energy bills if applicable and renter acceptance of the upgrade(s).	*Both Pathways* a. The team requires an energy audit in its offering prior to installing efficient electric equipment to ensure energy and cost savings for occupants and owners. b. Contractors use smart diagnostic tools to ensure proper installation of equipment (e.g., Quality Installation Tool or Smart Tools for Efficient HVAC Performance (STEP) Campaign).[22] c. Building upgrades receive a final inspection by a certified Quality Control Inspector.[23]

Critical Success Factor 9: Risk Assessment and Mitigation Strategies

Minimum Requirements	*Best Practices*
Both Pathways a. The team includes an assessment of risks to implementation and identifies measures to mitigate them for the pilot building upgrade initiative. (Excludes Tech Demo plan if a report from a prior demo was submitted instead of a plan for a new demo.) b. The team identifies potential negative impacts to disadvantaged or underserved communities resulting from the technology demonstration and/or pilot initiative and includes mitigation strategies to protect against unintended harm for the most likely or severe risks. (Excludes Tech Relevance Report if a report from a prior demo or installations was submitted instead of a plan for a new demo.)	*Both Pathways* a. The team includes an assessment of implementation risks and puts a system in place to mitigate them. b. The team identifies potential negative impacts to disadvantaged or underserved communities resulting from the technology demonstration and/or pilot initiative and includes mitigation strategies suggested by communities to protect against unintended harm for all risks identified.

[22] https://www.pnnl.gov/projects/step-campaign; https://www.pnnl.gov/projects/quality-install-tool
[23] https://www.energy.gov/scep/wap/quality-work-plan-inspections

c. The team seeks out strategies to mitigate risks from the community within the building upgrade zone(s) and considers them for the risk assessment and mitigation plan.	

Critical Success Factor 10: Scaling and Replicability

Minimum Requirements	Best Practices
Both Pathways a. The team has described a preliminary plan and budget to scale the initiative to full implementation in relevant critical success factors. b. The team describes elements of initiative that could be replicated to other communities, building types or geographies.	*Both Pathways* a. The team has established initial partnerships that may lead to replication of the initiative beyond the pilot building upgrade zone(s).

3.2. Innovation Bonus Prize Evaluation Criteria

Innovation Bonus Prizes will be evaluated on a scale of 1 to 6 based on how novel and replicable the approach is, how difficult or prevalent the challenge addressed is to overcome, and the likelihood that the approach will successfully overcome the stated challenge. The narrative will be evaluated by reviewers assigning a 1 (low) to 6 (high) score to each of the following statements:

Scored Statement	Scoring Range					
Criterion 1: Novelty						
The innovation described is a new approach to the challenge.	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Slightly agree	5 Agree	6 Strongly agree
Criterion 2: Replicability						
The innovation described can be replicated in other communities, geographies, or building types.	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Slightly agree	5 Agree	6 Strongly agree
Criterion 3: Level of Challenge						
The challenge addressed is prevalent, persistent, and/or difficult to address.	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Slightly agree	5 Agree	6 Strongly agree
Criterion 4: Approach						
The team demonstrates a good understanding of the challenge and a sound approach to addressing the challenge.	1 Strongly disagree	2 Disagree	3 Slightly disagree	4 Slightly agree	5 Agree	6 Strongly agree

4. Appendix

The appendix contains background information on the Building Upgrade Prize and information from Phase 1 that holds true for Phase 2 such as eligibility, payment details, terms and conditions, as well as a glossary of terms as defined for the Buildings Upgrade Prize.

4.1. Glossary of Terms

Building Upgrade Zone: The geographic area(s) and building type(s) identified for the pilot and full-scale implementation of your building upgrade initiative. This may be an entire community, neighborhoods within a community, a utility service area, portfolio of geographically dispersed buildings, or another zone that you define.

Community Based Organization (CBO): For this prize, DOE defines community-based organizations as "nonprofit organizations that are representative of a community or segments of a community, defined by place or population, and provides financial, educational, cultural, and/or other resources aimed at enhancing health, wealth, and overall community well-being." For-profit entities and large nonprofits with a particular area of focus beyond the local level are typically excluded from this definition. Ideally, CBOs are physically based in the communities they serve, though in some cases CBOs can be effective even without a physical presence. CBOs range from formal organizations with legal nonprofit status (501(c)(3), 501(c)(4), etc.) to informal, grassroots community groups that are mission-driven and headed by respected community leaders.

Community Engagement: Activities designed to reach specified communities such as those that may be impacted by building upgrades and to the extent applicable communities that have been historically marginalized from decision-making or have experienced disproportionately high burdens and low benefits from previous policies and programs.

Critical Success Factor: The necessary elements that form a strong foundation for a pilot and full-scale building upgrade initiative, as specified in the Prize Rules.

Designated Prize Recipient: A legally organized entity identified by the competitor to receive prize cash awards.

Energy-related health and safety measures: Activities that are necessary before, or as a result of, the installation of energy conservation measures in order to mitigate or eliminate health and safety hazards. Energy-related health and safety measures include, but are not limited to, combustion appliance safety testing; electrical repair (ensuring code compliance when insulating knob-and-tube wiring and repairing overloaded electrical circuits); assessment of fire hazards (identifying inadequate combustion appliance clearances and creosote buildup); maintaining or improving indoor air quality; lead-safe weatherization (limited to procedures for installing weatherization measures without increasing the existing risk of exposure to lead, but does not include lead abatement); and procedures to identify pre-existing health conditions in homes and buildings, address these problems, and ensure that weatherization does not exacerbate existing problems.

Homes occupied by low-income households, or households whose total income falls below a certain threshold. These homes can include all housing types, including single-family, multifamily, and manufactured housing. For this prize, teams may use the Weatherization Assistance Program eligibility definition of low income, which is 200% of the poverty level or 60% of state median income. Teams may also choose to use the definition of 80% of area median income, the income level that qualifies households for full low-income rebates through the Inflation Reduction Act Home Rebate program.

Indian Tribes. For the purposes of this prize, the term "Indian Tribe" includes both federally recognized and non-federally recognized (e.g., state-recognized) Indian tribes.

Lead Organization/Team Lead: The organization leading the team and submitting the application in HeroX. The lead organization/team lead provides a main point of contact for the team throughout the Prize.

Meaningful engagement: Activities that are designed to be accessible and inviting for participants such as hosting interactive workshops; attending and participating in existing community forums hosted by trusted community leaders or organizations; co-designing initiative plans with agreed-upon decision-making power, facilitation and/or additional CBO planning partners invited by a team's leading CBO; creating a community advisory board or oversight committee; participatory budgeting; and/or entering into a memorandum of understanding, community benefits agreement, project labor agreement, or community workforce agreement. At a minimum, meaningful engagement ensures community and/or stakeholder needs and assets are being integrated into the initiative and informing planning.

Naturally occurring affordable rental housing, or non-subsidized housing that provide affordable rents for households at the 80% level of area median income.[24] Teams can consider any multifamily building located in a U.S. Department of Housing and Urban Development (HUD)-designated low-income housing tax credit "qualified census tract" as meeting these criteria.[25]

Non-federal-government entities such as municipalities, states, counties, tribal governments, territories, public housing authorities, and/or regional planning organizations.

Partner: An organization that supports a competitor's initiative in some way but is not formally part of the competing team.

Regional Navigators: A group of organizations subcontracted by NREL to support teams in a geographic region. Regional Navigators have broad energy efficiency expertise and relevant relationships to support teams. Regional Navigators cannot serve as Team Members or Partners. Regional Navigators may be referred to as Power Connectors withing the American-Made Challenges Network.

Registered Competitor: Refers to the entity registered on HeroX as a competitor.

Subscriber: A person or entity that agrees to receive building upgrades through a Buildings Upgrade Prize initiative. May include property owners and/or renters. Subscribers must have a legal relationship with the property.

Stakeholder Engagement: Activities focusing on engaging with people or organizations that have historically been recognized as having a direct stake in an initiative and its effects, and stakeholders from other sectors that could be strong contributors to the initiative (e.g., heath or housing organizations, business improvement districts, neighborhood organizations).

Underserved commercial, nonprofit, and public buildings: The underserved commercial and nonprofit sector includes many organizations and building types that provide vital services to communities and can experience high energy and building maintenance costs. Examples are provided in Appendix 4.4.

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[24] HUD defines affordable housing as "housing on which the occupant is paying no more than 30 percent of gross income for housing costs, including utilities." See https://archives.hud.gov/local/nv/goodstories/2006-04-06glos.cfm.

[25] HUD-designated qualified census tracts for the low-income housing tax credit must have 50 percent of households with incomes below 60 percent of the area median gross income or have a poverty rate of 25 percent or more. Data on qualified census tracts are available at https://www.huduser.gov/portal/datasets/qct.html.

Subsidized affordable housing, such as public housing, Project-Based Section 8 housing, housing subsidized by the Low-Income Housing Tax Credit, rural housing subsidized by U.S. Department of Agriculture programs, and affordable housing subsidized by other federal, state, or local funding.

Team Member: An entity or organization that is formally participating on a competing team and is listed as a team member on the application.

Technical Assistance Providers: A group of organizations subcontracted by NREL to support teams in specific areas including Finance and Funding, Supply Chain and Workforce Development, Building Stock Analysis, Technology Selection, and Building Upgrade Initiative Development and Support. Technical Assistance Providers may be referred to as Power Connectors withing the American-Made Challenges Network.

4.2. Background

Role of Building Upgrades in Meeting National Greenhouse Gas Reduction Goals

The U.S. building stock—consisting of more than 123 million homes and 5.9 million commercial buildings—consumes 75% of the nation's electricity and 40% of the nation's total energy, and accounts for 35% of the country's carbon dioxide emissions. Within commercial and residential buildings, space heating, ventilating, and air conditioning (HVAC) and water heating account for over 60% of energy use. To meet the Biden administration's ambitious greenhouse gas reduction goals[26] and Justice40 commitments,[27] existing buildings across a wide variety of uses, sizes, vintages, and climates must be upgraded rapidly and equitably. Existing programs have not scaled sufficiently to reach all parts of the country, particularly low-and-moderate income households and disadvantaged businesses. In many parts of the country and in certain applications upgrades remain complicated, costly, disruptive, and undervalued.

To solve these challenges, DOE seeks to support and recognize energy efficiency and efficient electrification initiative innovations in areas such as project financing, project aggregation, equipment ownership structures, soft cost reduction, workforce training and pathways to high quality jobs, contractor development, alignment with affordable housing constraints, communications, authentic community engagement, and project delivery.

Challenges to Building Upgrades

There are multiple persistent barriers to scaling energy efficiency and efficient electrification building upgrades, including:

- Lack of reach of funding and incentive programs to historically underserved households and building owners to provide energy efficiency and weatherization upgrades, especially for buildings that require energy-related health and safety measures[28] (the Weatherization Assistance

[26] FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies | The White House
[27] Justice40 Initiative | Environmental Justice | The White House
[28] Brown, Marilyn Ann, A. Soni, M. V. Lapsa, and K. Southworth. 2020. "Low-Income Energy Affordability: Conclusions From A Literature Review". United States. https://doi.org/10.2172/1607178.

Program[29] is only able to reach about 0.2% of eligible low-income households with weatherization upgrades annually[30]).

- High first costs for labor and equipment, compared to conventional equipment.[31]
- Lack of contractor familiarity with efficient electrification technologies (such as heat pumps and heat pump water heaters) and integrated building upgrades (such as a package of insulation, air sealing, and HVAC upgrades).
- Lack of retrofit materials and components.[32]
- Limited short-term financial payback.[33]
- Insufficient numbers of skilled workers to design, finance, install, and maintain retrofits
- Lack of coordination among local stakeholders such as those across the energy, housing, government, and banking sectors.[34]
- Inconsistent quality of work and consumer mistrust.[35]

Potential Solutions for Scaling Building Upgrades

Through Buildings UP, teams can be rewarded for the development of innovative approaches that address barriers to building upgrades, including but not limited to:

- **Innovative funding combinations and financing to reduce upfront costs** of equipment and installation, such as leveraging multiple sources of funding (e.g., combining federal rebates, state and local funding sources, and philanthropic funds to reduce the direct cost of upgrades to homeowners), and addressing prerequisite energy-related health and safety measures.
- **Scalable and replicable initiative models** that streamline the implementation of energy efficiency and efficient electrification upgrades (e.g., streamlined audits, permitting, contractor engagement, and installation).
- **Attractive business models** that incentivize manufacturers and contractors to produce and install heat pumps, insulation, and other products that enable energy efficiency and efficient electrification upgrades.
- **Marketing and quantification of additional benefits for building owners and tenants**, such as from comfort and indoor air quality improvements, to incentivize greater uptake of retrofit measures.
- **Promotion of energy efficiency and efficient electrification solutions among a broader range of stakeholders** through robust stakeholder engagement, communications campaigns, setting public goals, and promoting initiative successes.
- **High-quality installations and upgrades** for optimal performance through streamlined quality assurance/quality control and workforce training support.

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[29] Weatherization Assistance Program | Department of Energy
[30] Weatherization Cuts Bills and Creates Jobs but Serves Only a Tiny Share of Low-income Homes | ACEEE
[31] Joe, Jaewan, Malhotra, Mini, Lapsa, Melissa Voss, and Baxter, Van. 2021. "US Heat Pump Market Overview – 2020". United States. https://www.osti.gov/servlets/purl/1885402
[32] IEA. 2022, The Future of Heat Pumps, IEA, Paris https://www.iea.org/reports/the-future-of-heat-pumps, License: CC BY 4.0
[33] Amann, J., R. Srivastava, and N. Henner. 2021. Pathways for Deep Energy Use Reductions and Decarbonization in Homes. Washington, DC: ACEEE. https://www.aceee.org/sites/default/files/pdfs/b2103.pdf
[34] Amann, J., R. Srivastava, and N. Henner. 2021. Pathways for Deep Energy Use Reductions and Decarbonization in Homes. Washington, DC: ACEEE. https://www.aceee.org/sites/default/files/pdfs/b2103.pdf
[35] https://escholarship.org/content/qt78k303s5/qt78k303s5.pdf

Prize Goals

Buildings UP aims to reward innovative initiatives that address persistent administrative, financial, social, and other barriers to improving building energy efficiency and reducing on-site emissions. While no single team is likely to address all barriers alone, the portfolio of solutions developed collectively by winning teams contributes to the achievement of prize goals.

Specifically, DOE seeks to support solutions that:

- **Accelerate building upgrades for efficiency and on-site emissions reductions.** Winning concepts will advance significant innovations for rapidly increasing retrofits beyond current best practices in the applicant's identified area of focus.
- **Demonstrate scalability and replicability.** Winning concepts will have applicability across building type(s) climate zone(s), and/or, community type(s).
- **Incorporate innovative** applications of existing or new approaches to building upgrades.
- **Advance holistic and lasting energy efficiency and efficient electrification initiative development** (e.g., through supportive infrastructure, financing, and funding) with support from DOE's and the National Renewable Energy Laboratory's (NREL's) robust technical support network of American-Made Challenges "Power Connectors."
- **Benefit underserved communities.** The prize is structured to advance the goal of at least 40% of the initiative benefits accruing to equity-eligible buildings (see the glossary and Section 4.3 for further details), their occupants, and surrounding communities. Winning teams (see the glossary and Section 4.5 for details on eligible team members) in the Equity-Centered Innovation Pathway will receive higher prize amounts, which can support deep and intentional engagement with communities being served.

4.3. Eligible Building Types and Upgrades

Buildings intended for upgrades may include one or multiple residential or commercial building types (e.g., single family; multifamily; manufactured housing; K–12 schools; higher education; commercial real estate; hospitality; health care; retail, food service, and grocery; local government buildings; state government buildings) and may be in a single community or include buildings across multiple geographic locations.

The **minimum** technologies and strategies teams must include in every upgrade in their initiative:

- Efficient electric heating and cooling equipment (e.g., heat pumps and/or heat pump water heaters, geothermal heat pumps)
- Weatherization and envelope improvements (e.g., insulation, air sealing, window improvements) where needed to reduce energy cost.

Additional strategies and technologies teams may incorporate into their initiatives include but are not limited to:

- Energy-related health and safety measures
- Efficient electric appliances
- Electric vehicle chargers
- On-site and community solar
- Electric panel upgrades
- Building controls
- Energy storage.

4.4. Equity-Eligible Buildings

Buildings UP is committed to meeting the administration's goal of federal funding supporting broadly shared prosperity across American communities, especially in those disadvantaged communities highlighted in the Justice40 Initiative.[36] The Office of Management and Budget's interim Justice40 implementation guidance[37] defines a *community* as either:

1. A group of individuals living in geographic proximity (such as a census tract) or
2. A geographically dispersed set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions.

Buildings UP allows for teams to use both approaches in directing the benefits of building upgrades to disadvantaged communities, which can be defined by geography (such as buildings within a low-income neighborhood) or by characteristics of building occupants or users (such as low-income households or disadvantaged business enterprises). The Building Technologies Office (BTO) developed an Equity-eligible Buildings Mapping Tool[38] to help teams identify specific buildings or census tracts that meet the outlined criteria. There is not sufficient data to identify every equity-eligible building in a single mapping tool, so teams are also encouraged to refer to the definition outlined below when identifying buildings for upgrades.

For the purpose of this prize, the following building types are considered "equity-eligible" and will meet the requirements of the Equity-Centered Innovation Pathway:

1. **Buildings located within Climate and Environmental Justice Screening Tool (CEJST)-designated[39] and/or DOE-designated[40] Justice40 census tracts, federally recognized tribal lands, and U.S. territories.**

   Teams that use this approach to defining their equity-eligible buildings should reference the specific census tracts they plan to focus on for building upgrades as part of their participation in the prize. Teams should also explain which building types (low-income housing, underserved commercial, schools, etc.) they plan to upgrade within the specific DOE-designated Justice40 census tracts.

2. **Affordable housing and housing occupied by low-income residents**. Low-income households face a disproportionately higher energy burden, defined as the percentage of gross household income spent on energy costs.[41] According to DOE's Low-Income Energy Affordability Data (LEAD) Tool,[42] the national average energy burden for low-income households is 8.6%, nearly three times higher than for non-low-income households, which is estimated at 3%. The energy burden for low-income households at the local level is estimated to be even higher than 8.6%.
   The following building types fit within this equity-eligible buildings category:

[36] See more information on the Justice40 Initiative at https://www.whitehouse.gov/environmentaljustice/justice40/.
[37] The OMB interim Justice40 Initiative implementation guidance is available at https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf.
[38] See more information on the BTO Equity-eligible Buildings Mapping Tool at https://energyjustice-buildings.egs.anl.gov/
[39] More information on the CEJST's definition of disadvantaged communities can be found at https://screeningtool.geoplatform.gov/en/about.
[40] More information on DOE's identification of disadvantaged communities can be found at https://energyjustice.egs.anl.gov/ and https://www.energy.gov/diversity/justice40-initiative.
[41] More information on DOE resources for low-income households is available at https://www.energy.gov/eere/slsc/low-income-community-energy-solutions.
[42] The LEAD Tool is available at https://www.energy.gov/eere/slsc/maps/lead-tool.

a. **Subsidized affordable housing,** such as public housing, Project-Based Section 8 housing, housing subsidized by the Low-Income Housing Tax Credit, rural housing subsidized by U.S. Department of Agriculture programs, and affordable housing subsidized by other federal, state, or local funding.
b. **Naturally occurring affordable rental housing**, or non-subsidized housing that provide affordable rents for households at the 80% level of area median income.[43] Teams can consider any multifamily building located in a U.S. Department of Housing and Urban Development (HUD)-designated low-income housing tax credit "qualified census tract" as meeting these criteria.[44]
c. **Homes occupied by low-income households,** or households whose total income falls below a certain threshold. These homes can include all housing types, including single family, multifamily, and manufactured housing. For this prize, teams may use the Weatherization Assistance Program eligibility definition of low income, which is 200% of the poverty level or 60% of state median income. Teams may also choose to use the definition of 80% of area median income, the income level that qualifies households for full low-income rebates through the Inflation Reduction Act Home Rebate program.

Teams that use this approach to define their equity-eligible buildings should specify which of these affordable and low-income housing options they plan to upgrade and how they will identify the specific housing units for building upgrades during the later stages of the prize. For purposes of this prize, teams can consider an entire multifamily building as an equity-eligible building if greater than 50% of resident households are at 80% or less of area median income.

3. **Underserved commercial, nonprofit, and public buildings.** The underserved commercial and nonprofit sector includes many organizations and building types that provide vital services to communities and can experience high energy and building maintenance costs. These high costs can inhibit wealth-building and economic development on the commercial side and direct crucial resources away from services to the community on the nonprofit side. The following building types provide a framework for possible types of commercial buildings that could fit within this equity-eligible buildings category:
    a. **Buildings used by small, disadvantaged businesses,**[45] which include small businesses that are majority minority-owned, women-owned, or veteran-owned. These businesses can own or lease their operating space.
    b. **Buildings used by businesses that serve disadvantaged communities**, especially businesses whose benefits or service offerings remain within the community.
    c. **Title I schools,**[46] or schools with high percentages of students qualifying for free and reduced-cost lunch, high percentages of students from low-income families, or located in

[43] HUD defines affordable housing as "housing on which the occupant is paying no more than 30 percent of gross income for housing costs, including utilities." See https://archives.hud.gov/local/nv/goodstories/2006-04-06glos.cfm.
[44] HUD-designated qualified census tracts for the low-income housing tax credit must have 50 percent of households with incomes below 60 percent of the area median gross income or have a poverty rate of 25 percent or more. Data on qualified census tracts are available at https://www.huduser.gov/portal/datasets/qct.html.
[45] The federal definition of a "small disadvantaged business" is available here: https://www.sba.gov/federal-contracting/contracting-assistance-programs/small-disadvantaged-business.
[46] Title I, Part A (Title I) of the Elementary and Secondary Education Act provides financial assistance to local educational agencies and schools with high numbers or high percentages of children from low-income families. More information on the program is available at https://www2.ed.gov/programs/titleiparta/index.html.

rural or remote areas. Applicants can use this DOE mapping tool to identify Title I schools: https://energyjustice-schools.egs.anl.gov/.

d. **Buildings used by nonprofit organizations[47] that provide localized community services,** such as emergency shelters, meal service centers, arts and culture organizations, and environmental, economic, and housing justice organizations. These nonprofits can own or lease their operating space.
e. **Buildings that provide critical community services**, such as public community centers, libraries, emergency service providers, and childcare centers.
f. **Buildings designated or planned to be designated for use as resilience hubs or disaster shelters.** These buildings are community-serving facilities augmented to support residents, coordinate communication, distribute resources, and provide temporary shelter during emergency and disaster relief situations. Resilient hubs aim to provide healthy buildings and energy security through efficient building design and operation, integration of renewables, and low-carbon backup power (such as batteries).
g. **Other commercial or nonprofit buildings are defined as equity-eligible through community input**. See details below on how a team can make this determination.

Teams that use this approach to defining their equity-eligible buildings should specify which underserved commercial, nonprofit, and public building types they plan to focus on and how they will identify the specific buildings or units for building upgrades during later stages of the prize. Buildings UP recognizes that addressing underserved commercial, nonprofit, or public buildings is complex. Applicants should use their narratives to describe how upgrading these buildings would benefit the local community.

4. **Locally defined equity-eligible buildings** as defined or identified by the local community of the prize applicant team. DOE recognizes that community-based organizations, local governments, community leaders, and other local stakeholders have on-the-ground knowledge of underserved communities and disadvantaged areas not necessarily captured by national datasets or the categories above. The Office of Management and Budget Memo M-21-28: Interim Implementation Guidance for the Justice40 Initiative[48] includes factors that can help a team to create its own local definition of equity-eligible buildings. The memo lists the following variables for consideration:

    - Low income, high and/or persistent poverty
    - High unemployment and underemployment
    - Racial and ethnic residential segregation, particularly where the segregation stems from discrimination by government entities
    - Linguistic isolation
    - High housing cost burden and substandard housing
    - Distressed neighborhoods
    - High transportation cost burden and/or low transportation access
    - Disproportionate environmental stressor burden and high cumulative impacts
    - Limited water and sanitation access and affordability

[47] A building owned, operated, or leased by an organization that is described in section 501(c)(3) of the Internal Revenue Code of 1986 and exempt from tax under section 501(a) of such Code.
[48] This memo is available at https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf.

- Disproportionate impacts from climate change
- High energy cost burden and low energy access
- Jobs lost through the energy transition
- Access to healthcare.

Additionally, for the purpose of this Prize, buildings on non-federally recognized tribal lands may also be eligible as locally defined equity-eligible buildings.

Teams that use this approach to defining their equity-eligible buildings should specify which criteria they are using to define their equity-eligible buildings, which can come from the categories listed above or from a team's local knowledge. Teams using this approach should also specify which neighborhoods and/or specific building types they will focus on and how they fit within the overall goals of the Justice40 Initiative. Finally, teams should share how they will approach upgrades for specific buildings during later stages of the prize.

Buildings UP understands that teams' plans for their Equity-Centered Innovation Pathway focus may change as they deepen community engagement and planning efforts. Teams should describe how they plan to reduce the risk of housing or leased space cost increases and/or displacement of current residents, businesses, and nonprofit organizations through the investments that will be made through their future building upgrades.

4.5. Eligibility and Terms

Buildings UP Phase 2 is open to teams that were previously awarded as Phase 1 winners. Organizations may be a part of multiple submitting teams and the composition of the team may change during Phase 2.

Phase 2 teams may include: non-federal government entities, Indian tribes, community-based organizations, and nonprofit and for-profit organizations. See the glossary for definitions of these organizations. **To be eligible for this Prize, a CBO must have its own nonprofit legal status OR utilize a fiscal sponsor with a nonprofit legal status.**

Team members and partners are subject to the following requirements:

- 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. Individuals competing as part of a team may participate if they are legally authorized to work in the United States.
- Private entities must be incorporated in and maintain a primary place of business in the United States.
- Academic institutions must be based in the United States.
- DOE employees, employees of sponsoring organizations, 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 any contest are not eligible to participate in any prize contests in this program.
- Federal entities and federal employees are not eligible to participate in any portion of the prize.
- DOE national laboratory employees cannot compete in the prize.

- 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[49] sponsored by a country of risk[50] 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.
- 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.

To compete in Phase 2 of Buildings UP, a participating team must continue to comply with the eligibility requirements above. By completing a Phase 2 submission, a team certifies that they follow these eligibility requirements. Eligibility is subject to verification before prizes are awarded. The registered competitor is the participant that registered in HeroX to compete.

Organizations meeting the above eligibility requirements may participate as Team Members or Team Leads in Phase 2 whether or not they are legally organized entities. However, prize funds can only be paid to legally organized entities. Winning teams should designate a legally organized entity to serve as the Designated Prize Recipient to receive prize funds.

Smaller organizations (e.g., small local governments or small utilities) may form consortia to participate as a team. Teams that support or administer existing building retrofit initiatives are eligible to apply, so long as their Phase 2 submission includes significantly expanding or improving upon an existing initiative or developing a new initiative.

4.6. Additional Terms and Conditions

Requirements

Your Buildings UP submission is subject to the following terms and conditions:

[49] 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.

[50] DOE has designated the following countries as foreign countries of risk: Iran, North Korea, Russia, and China. This list is subject to change.

- You must post the final content of your Phase 2 submission or upload the submission form on HeroX by 5 p.m. ET before the prize's Phase 2 submission period closes. Late submissions or any other form of submission may be rejected. Quarterly submission deadlines are June 17, 2024; September 16, 2024; December 16, 2024; March 17, 2025; and June 16; 2025 at 5 PM Eastern Time. Submissions must be received no later than Jun 16, 2025, at 5 PM Eastern Time.
- All submissions that you wish to protect from public disclosure must be marked according to the instructions in Section 4.6.10 of this Appendix. Unmarked or improperly marked submissions will be deemed to have been provided with unlimited rights and may be used in any manner and for any purpose whatsoever.
- 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. Teams may be given an opportunity to rectify submission errors due to technical challenges.
- Your submission must be in English and in a format readable by Microsoft Word or Adobe PDF. 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 (DOE) 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.
- 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 and are in addition to the existing HeroX Terms of Use for all purposes relating to these contests. You should print and keep a copy of these rules. These provisions only apply to the prize described here and no other prize on the HeroX platform or anywhere else.
- The Prize Administrator, when feasible, may give teams an opportunity to fix non-substantive mistakes or errors in their submission packages.
- As part of your submission to this prize, you will be required to sign the following statement:
    - 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.

Verification for Payments

The Prize Administrator will verify the identity and role of all teams before distributing any prizes. Receiving a prize payment is contingent upon fulfilling all requirements contained herein. The Prize Administrator will notify winning teams using the provided email contact information for the individual or entity that was responsible for the submission. Each team 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 W9 form (https://www.irs.gov/pub/irs-pdf/fw9.pdf). In the sole discretion of the Prize Administrator, a winning team 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 team. 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 teams may be required to show proof of being the authorized account holder.

Teams and Awards

The Prize Administrator will pay the award amount to one designated prize recipient for each winning team in the Open Innovation Pathway, whether consisting of single or multiple entities. Up to two Prize Recipients may be identified for Equity-Centered Innovation Pathway teams. The Prize Administrator will issue the dollar amounts indicated in the Phase 2 submission budget to each of the identified Prize Recipients.

The Innovation Bonus Prize awards will be paid to one designated prize recipient per team. This must be the same organization designated to receive the Phase 2 Planning awards. One of the designated prize recipients must be identified to receive the Innovation Bonus Prize award for an Equity-Centered Innovation Pathway teams with two designees.

It is the sole responsibility of the designated prize recipient or designated prize recipients to the extent authorized elsewhere in these rules, to allocate any prize funds among its member organizations or teammates as they deem appropriate. The Prize Administrator will not arbitrate, intervene, advise on, or resolve any matters or disputes between team members.

Submission Rights

By making a submission and consenting to the rules of the contest, a team is granting to DOE, the Prize Administrator, and any other third parties supporting DOE in the contest, an unlimited license to display publicly and to use any part(s) of the submission that are designated as "public" in the Official Rules for any government purpose. This license includes posting or linking to the public portions of the submission on the Prize Administrator or HeroX submissions, including the contest website, DOE websites, and partner websites, and the inclusion of the submission in any other media worldwide. The submission may be viewed by DOE, Prize Administrator, and judges and reviewers for purposes of the contests, including but not limited to screening and evaluation purposes. The Prize Administrator and any third parties acting on their behalf will also have the right to publicize teams' names and, as applicable, the names of team member organizations, which participated in the submission on the contest website indefinitely.

By entering, the team represents and warrants that:

1. The team's entire submission is an original work by the team and the team 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 and/or disclosed by the team in the submission, and (ii) team has either obtained the rights to use such third-party content or the content of the submission is considered in the public domain without any limitations on use.
2. Unless otherwise disclosed in the submission, the use thereof by Prize Administrator, or the exercise by Prize Administrator of any of the rights granted by team under these rules, 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 team to work on the submission or who appear in the submission in any manner have:
    a. Given the team 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 team's child, team must have the permission of the minor's parent or legal guardian) and the team 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.

Copyright

Each team represents and warrants that the team is the sole author and copyright owner of the submission; that the submission is an original work of the team or that the team has acquired sufficient rights to use and to authorize others, including DOE, to use the submission, as specified throughout the rules; that the submission does not infringe upon any copyright or any other third-party rights of which the team is aware; and that the submission is free of malware.

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.

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 teams.

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.

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.

DOE has determined that no liability insurance naming DOE as an insured will be required of teams to compete in this competition per 15 U.S.C. § 3719(i)(2). Teams should assess the risks associated with their proposed activities and adequately insure themselves against possible losses.

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. The following applies only to portions of the submission not designated as public information in the instructions for submission. If a submission includes trade secrets or information that is commercial or financial, or information that is confidential or privileged, it is furnished to the 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. This restriction does not limit the Government's right to use the information if it is obtained from another source.

Submissions containing confidential, proprietary, or privileged 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.

The submission must be marked as follows and identify the specific pages containing trade secrets, confidential, proprietary, or privileged information: "Notice of Restriction on Disclosure and Use of Data: Pages [list applicable pages] of this document may contain trade secrets, confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes. [End of Notice]"

The header and footer of every page that contains confidential, proprietary, or privileged information must be marked as follows: "Contains Trade Secrets, Confidential, Proprietary, or Privileged Information Exempt from Public Disclosure." In addition, each line or paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets.

Teams will be notified of any Freedom of Information Act requests for their submissions in accordance with10 CFR part 1004. Teams may then have the opportunity to review materials and work with a Freedom of Information Act representative prior to the release of materials. DOE does intend to keep all submission materials private except for those materials designated as "will be made public." DOE will make its own determination about the status of the information and treat it according to its determination. DOE makes the final determination.

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 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.

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 failures, 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 team and DOE shall not compensate any teams 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 teams that achieve the goals of the program. If, in DOE's determination, no teams achieve the goals of the program, DOE will select no teams 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.

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 teams 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:

- Geographic diversity, urbanization diversity (i.e., cities, suburbs, towns, villages), 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 programmatic or technological diversity, including diversity in types of buildings served, when compared to the existing DOE project portfolio and other teams.
- The degree to which the submission is likely to lead to increased employment and manufacturing in the United States, enhance economic inclusion 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 teams 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 and increased coordination among governmental entities (e.g., between a local and state government or between housing and energy agencies within local or state government) toward enabling a just and equitable clean energy economy in their region and/or community.
- The degree to which the submission demonstrates a best practice approach to delivering multiple benefits to the community (e.g., emissions reductions, health benefits, local workforce and contractor development, inclusive procurement practices, energy and housing affordability, preventing displacement).

- The degree to which the submission acknowledges and seeks to mitigate racial inequities caused by past and current policies.

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/.

Were DOE to conduct Phase 3, DOE would only evaluate installations and upgrades that were subject to a NEPA determination. In developing a plan under Phase 2 teams should consider the applicability of NEPA review to the implementation of their plans in a potential Phase 3. Proposals fitting within the parameters (1– 26) below may qualify for an expedited Phase 3 NEPA review. Those with proposals that do not fit within the parameters listed for expedited review would likely need an individual NEPA review.

While NEPA compliance is a federal agency responsibility and the ultimate decisions remain with the federal agency, all participants in the Buildings UP Prize will 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 such that DOE can conduct a meaningful evaluation of the potential environmental impacts. Additional instruction regarding NEPA review would be provided in the rules to Phase 3, if issued.

Project proposals limited to the following activities are more likely to receive an expedited NEPA review:

1. Administrative activities
2. Energy audits
3. Development and implementation of programs, plans, and strategies to encourage energy efficiency and renewable energy such as policy development and stakeholder engagement
4. Development and implementation of classroom or online training programs
5. Development and implementation of building codes including inspection services, and associated activities to support code compliance and promote building energy efficiency
6. Purchase of alternative fuel vehicles
7. Replacement of existing lighting with energy-efficient lighting, including light poles (includes installation in utility easements)
8. Installation of building insulation (not including spray insulation)
9. Installation of insulation on ducts, water heater tanks and heating pipes
10. Duct sealing, insulation, repair, or replacement in unoccupied areas
11. External weather sealing of the building shell, including caulking, weather-stripping, and other air infiltration control measures on windows and doors, and installing thresholds in a manner that does not harm or obscure historic windows or trim
12. Interior weather sealing, including using weather stripping, door sweeps, and caulk and sealing major air leaks associated with bypasses, ducts, air conditioning units, etc.
13. Purchase and installation of energy-efficient or energy/water-efficient home and commercial appliances and equipment (including, but not limited to, energy or water monitoring and control systems, thermostats, furnaces, and air conditioners)
14. Retrofit of energy-efficient pumps and motors
15. Plumbing work, including installation and replacement of water heaters
16. Furnace or hot water tank replacement that does not require a visible new supply or venting
17. Replacement and upgrades of existing HVAC equipment including pumps, motors, boilers, chillers, cooling towers, air handling units, package units, condensers, compressors, or heat exchangers that do not require a new location and are not visible from any public right of way, provided such work does not affect character-defining features of the building

18. Clean, tune, repair or replace heating systems, including furnaces, boilers, heat pumps, vented space heaters, and wood stoves
19. Clean, tune repair or replace cooling systems, including central air conditioners, window air conditioners, heat pumps, and evaporative coolers
20. Conduct other efficiency improvements on heating and cooling systems, including replacing standing pilot lights with electronic ignition devices and installing vent dampers
21. Modifying duct and pipe systems so heating and cooling systems operate efficiently and effectively, including adding return ducts, replace diffusers and registers, replace air filters, install thermostatic radiator controls on steam and hot water heating systems, provided such work does not affect character-defining features of the building
22. Installation of programmable thermostats, outdoor reset controls, UL listed energy management systems or building automation systems and other HVAC control systems, provided such work does not affect character-defining features of the building
23. Adding or replacing existing building controls systems, including HVAC control systems and the replacement of building-wide pneumatic controls, with digital controls, thermostats, dampers, and other individual sensors like smoke detectors and carbon monoxide detectors (wired or non-wired), provided such work does not affect character-defining features of the building
24. New installation of non-hard wired devices including photo-controls, occupancy sensors, carbon dioxide, thermostats, humidity, light meters, and other building control sensors, provided the work conforms with applicable state and local permitting requirements
25. Installation of electric vehicle supply equipment (EVSE), including testing measures to assess the safety and functionality of the EVSE, restricted to existing footprints and levels of previous ground disturbance, within an existing parking facility defined as any building, structure, land, right-of-way, facility, or area used for parking of motor vehicles. All activities must use reversible, non-permanent techniques for installation, where appropriate, use the lowest profile EVSE reasonably available that provides the necessary charging capacity; place the EVSE in a minimally visibly intrusive area; use colors complementary to surrounding environment, where possible, and are limited to the current electrical capacity. This applies to Level 1, Level 2, or Level 3 (also known as Direct Current (DC) Fast Charging) EVSE. (Not applicable to Tribal lands.)
26. Activities listed below that are:
    a. Not on Tribal lands or Tribal properties, and
    b. Are not proposed to be installed in a historical building or a building potentially eligible to be listed as historic (45 years or older), and
    c. Do not occur within a historic district, and
    d. Would not require structural reinforcement, and
    e. Would not require trees to be trimmed or removed, and
    f. Any ground disturbing activities would be confined to the boundaries of an existing facility (defined as an already disturbed area due to regular ground maintenance), and
    g. Limited to:
        i. Retrofit and replacement of windows and doors.
        ii. Installation of battery energy storage systems (not to exceed 1,000 kWh capacity).
        iii. Installation of waste heat recovery devices, including desuperheater water heaters, condensing heat exchangers, heat pumps and water heating heat recovery systems, and other energy recovery equipment.
        iv. Installation of combined heat and power systems (systems sized appropriately for the buildings in which they are located, not to exceed peak electrical production at 300 kW).
        v. Installation of solar electricity/photovoltaic systems (not to exceed 60 kW).
        vi. Installation of a wind turbine (20 kW or smaller).
        vii. Installation of solar thermal systems (Including solar thermal hot water. Systems must be 200,000 BTU per hour or smaller).

viii. Installation of ground source heat pumps (5.5 tons of capacity or smaller, horizontal/vertical, ground, closed-loop systems).
ix. Installation of biomass thermal systems (3 MMBTUs per hour or smaller systems with appropriate Best Available Control Technologies installed and operated, and required permits obtained).

Return of Funds

As a condition of receiving a prize, teams agree that if the prize was made based on fraudulent or inaccurate information provided by the team 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. ALL DECISIONS BY DOE ARE FINAL AND BINDING IN ALL MATTERS RELATED TO THE PRIZE.