

Summary Report of Responses to a Request for Information on Inclusive Innovation and Entrepreneurship in Climate Technology

January 2022

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List of Acronyms

ARPA-E	Advanced Research Projects Agency - Energy
CBO	community-based organizations
DBE	disadvantaged business enterprise
DOE	U.S. Department of Energy
ED	Office of Economic Impact and Diversity
EDA	Economic Development Administration
EERE	Office of Energy Efficiency and Renewable Energy
EJ	environmental justice
EPSCor	Established Program to Stimulate Competitive Research
ETIPP	Energy Transition Initiatives Partnership Program
FFRDC	federally funded research and development center
FOA	Funding Opportunity Announcement
HACU	Hispanic Association of Colleges and Universities
HBCUs	historically Black colleges and universities
IP	intellectual property
JEDI	justice, equity, diversity, and inclusion
LPO	Loan Program Office
MBE	minority business enterprise
MSI	minority-serving institution
NGO	nongovernmental organization
NSF	National Science Foundation
PNNL	Pacific Northwest National Laboratory
R&D	research and development
R1	Research 1 university

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RFI	request for information
SBA	Small Business Administration
SBIR	Small Business Innovation Research
STEM	science, technology, engineering and mathematics
STTR	Small Business Technology Transfer
TCUs	tribal colleges and universities
WBE	women business enterprise

Executive Summary

The U.S. Department of Energy (DOE) released a request for information (RFI)¹ in June 2021 to understand the current barriers and actions needed to make its funding opportunities and innovation and entrepreneurship activities more inclusive, just, and equitable in line with the administration's climate goals. The RFI requested input from environmental justice (EJ) and community-based organizations; incubators and accelerators; developers; investors and funders; state, local, and tribal governments; researchers; and other stakeholders. Respondents were asked to comment on how to improve awareness of DOE funding opportunities, expand the applicant pool, address barriers to applying to solicitations or performing within the DOE system, and improve general support for the innovation ecosystem.

Respondents identified key barriers across the DOE system within the current funding structure and recommended processes and improvements to lower these barriers. Their responses included many recommendations that DOE could implement to improve access, equity, and justice in DOE's funding of the broader climate and clean energy ecosystem.

Additionally, respondents provided two broad thematic sets of recommendations:

- DOE can greatly expand its impact and reach by partnering with trusted organizations and supporting a broader innovation and deployment ecosystem.
- There are steps that DOE could take to better prepare, support, and empower new applicants, communities, and organizations.

Barriers to Entry within DOE's Current Funding Structure

Consensus opinion across responses was that the current DOE funding structure inherently limits participation by small organizations and emerging innovators. The most frequently stated issues were:

- High cost-share requirements disenfranchise organizations lacking stable funding or well-established partnerships with larger corporations or universities. Respondents expressed strong support that DOE eliminate or sharply reduce cost-share requirements.
- High administrative burdens and complicated applications require experienced staff to draft competitive applications and satisfy reporting requirements. Newly established organizations or small companies, colleges, and universities without significant research infrastructure lack sufficient personnel with the time or expertise to compete with large companies and well-connected research universities. Many respondents suggested that DOE needs to simplify applications and require fewer reporting checkpoints.
- Narrowly defined scopes for solicitations limit innovation and tend to favor existing approaches, technologies, and research topics that are often dominated by large

¹<https://www.energy.gov/eere/articles/department-energy-seeks-public-feedback-removing-barriers-participation-funding>

organizations, national laboratories, or established entities. Respondents favored more open topic funding opportunities.

Partnerships Can Enable an Inclusive Clean Energy Ecosystem

One of the most consistent recommendations across all topic areas was that DOE should partner with strong, trusted, community-based organizations. Overall, respondents recommended more than 100 organizations that may serve as trusted partners. Respondents felt that such partners could:

- Disseminate information about DOE funding opportunities to a wider and more diverse range of potential applicants.
- Assist applicants in navigating the DOE grant applications process, enabling the success of applicants from underserved groups and small businesses.
- Provide connections to disadvantaged communities and improve implementation of the Justice40 initiative at DOE.
- Establish community dialogues between underserved groups and DOE.
- Address and dispel preconceived notions about DOE funding that may deter applicants.

Addressable Improvements To Enable Lowering Barriers to DOE Funding Opportunities

There were several recommendations for improving the DOE funding pipeline to better support innovation, the most prominent being to:

- Designate DOE staff to assist applicants throughout the funding application process.
- Centralize DOE funding opportunities in one announcement and application platform.
- Increase use of social media platforms to announce funding opportunities.
- Designate specific funding for smaller and disadvantaged organizations.
- Increase awareness of and improve connector networks and other partnering resources.
- Ensure merit review panels are demographically diverse.
- Provide examples of successful and unsuccessful applications.
- Provide detailed reviewer feedback to applicants.
- Incentivize partnering with underrepresented groups.

To ensure that applicants can accomplish their objectives in line with DOE's mission and priorities after receiving funding, respondents additionally recommended that DOE:

- Provide more robust support services and deployment avenues.
- Communicate funding changes and offer bridge funding between award phases.
- Connect applicants to resources and additional funding at the end of each funding cycle.

DOE is grateful to the numerous respondents for the important recommendations they provided through this RFI. As part of DOE's efforts to better serve the clean energy innovation ecosystem, it launched the Inclusive Energy Innovation Prize² to promote community-centric solutions to clean energy challenges and a more inclusive innovation ecosystem. In addition, DOE's Office of Energy Efficiency and Renewable Energy released an officewide topic, Community-Driven Solutions for a Just and Equitable Energy Transition, as part of the Fiscal Year 2022 Small Business Innovation Research and Small Business Technology Transfer programs.³ DOE looks forward to working with existing and new partners to enable a more equitable, just, and inclusive energy sector, from early-stage research to deployment.

²<https://americanmadechallenges.org/inclusiveenergyinnovation/>

³<https://science.osti.gov/-/media/sbir/pdf/TechnicalTopics/FY22-Phase-I-Release-2-Combined-TopicsV512012021.pdf>

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Introduction

On June 9, 2021, the U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) and the Office of Economic Impact and Diversity (ED) released a request for information (RFI) on Inclusive Innovation and Entrepreneurship in Climate Technology. The RFI closed to responses on August 6, 2021.

The purpose of the RFI was to inform EERE and ED in their efforts to enable an inclusive and just entrepreneurial innovation ecosystem⁴ in climate and energy technologies. EERE and ED sought responses from environmental justice (EJ) and community-based organizations (CBOs); incubators and accelerators; developers; investors and funders; state, local, and tribal governments; researchers; and other stakeholders.

The RFI sought input on barriers to funding and support, as well as recommendations for improvement. A particular focus of this RFI was feedback on DOE opportunities for groups historically underrepresented in science, technology, engineering, and mathematics (STEM); underserved communities; organizations that support underserved communities; and frontline communities. The RFI was not aimed at policy recommendations requiring changes in the law but suggestions about what DOE can implement using its existing authorities.

The six categories of information solicited were:

- **Category 1:** Increasing Access to, and Awareness of, DOE Funding through Effective Outreach, Engagement, and Application Support.
- **Category 2:** Barriers to Applying for and Receiving Funding from DOE.
- **Category 3:** Support for an Innovation Ecosystem and Place-Based Innovation.
- **Category 4:** Regional and Local Barriers to DOE Funding.
- **Category 5:** Barriers to Performing within the DOE Funding System.
- **Category 6:** Open Topic.

The RFI was publicized through EERE channels and individual technology offices through social media campaigns, email outreach to existing mailing lists, and one-on-one engagement with DOE and EERE staff. Additionally, this RFI was amplified during the Inclusive Innovation and Entrepreneurship Roundtable discussion hosted by Pacific Northwest National Laboratory (PNNL).⁵

DOE received 80 responses representing feedback from a total of 106 different organizations. Some responses were from individual organizations, and others consolidated feedback from multiple organizations. Not all respondents answered every question. Respondents came from diverse backgrounds and brought expertise from a variety of sectors and experiences.

⁴The innovation ecosystem is defined as “the evolving set of actors, activities, and artifacts, and the institutions and relations, including complementary and substitute relations, that are important for the innovative performance of an actor or a population of actors.”

Grandstrand, Ove, and Marcus Holgersson. 2020. “Innovation Ecosystems: A Conceptual Review and a New Definition.” *Technovation* 90-91(2020) 102098. <https://doi.org/10.1016/j.technovation.2019.10209>.

⁵<https://www.pnnl.gov/events/inclusive-innovation-and-entrepreneurship-roundtable>

Figure 1 details the types of organizations that submitted responses. The largest category of respondents were nonprofit organizations, followed by technology developers, public universities, consultants, incubators and accelerators, national laboratories, municipal governments, and service contractors. Responses were also received from a tribal organization, community college, private university, cooperative electric utility, research center, and clean energy finance group.

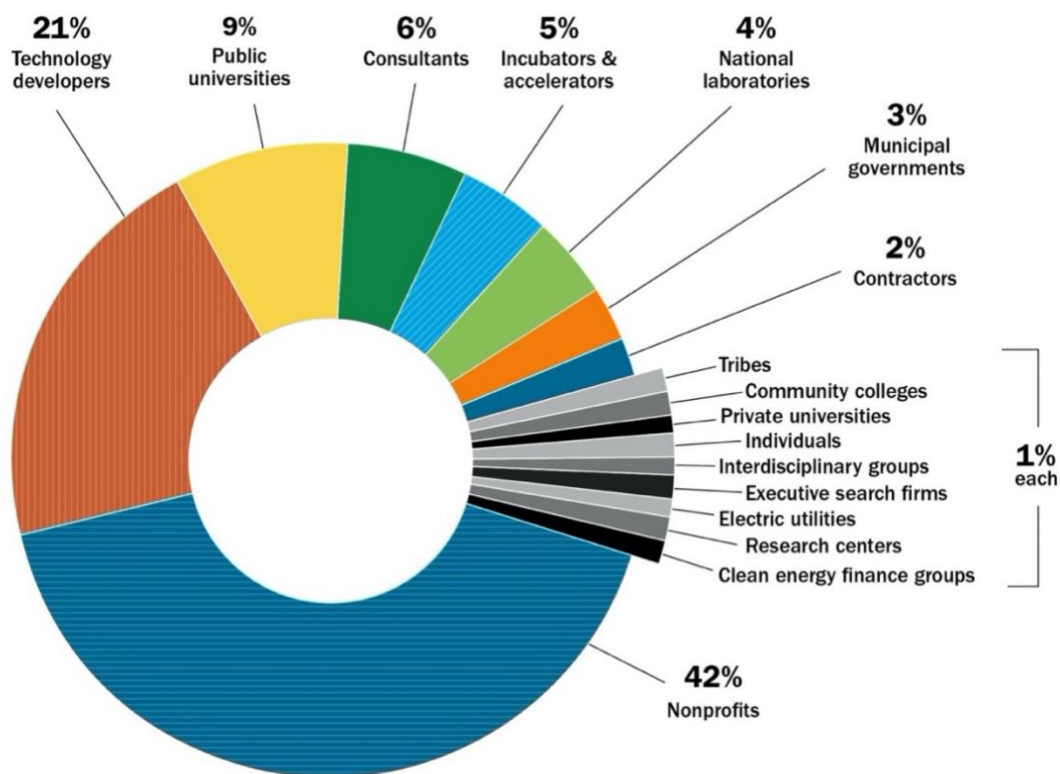


Figure 1. Percentage of responses received from various types of institutions. Percentages may not total to 100% due to rounding.

To minimize barriers to submitting responses, this RFI required responses in the form of a single written document emailed to a DOE inbox. There were no requirements to create accounts on a system, and responses were not evaluated against any criteria.

Even with significant outreach efforts and a simple submission procedure, the responses to the RFI were not necessarily representative of the full range of potential responders. Crafting a response takes time and attention that many organizations cannot spare, and it is likely that outreach efforts did not reach every relevant stakeholder. Therefore, the feedback summarized here should not be considered representative of the entire community from which DOE sought input. Continued engagement will be essential to the development of an inclusive ecosystem for innovation and entrepreneurship.

The following report summarizes the detailed insight shared by these respondents by RFI category, concluding with an overview of feedback and recommendations for DOE. This report is a crucial component of DOE's efforts to fully understand stakeholder needs and build an inclusive innovation and entrepreneurship ecosystem for climate technology.

Category 1: Increasing Access to, and Awareness of, DOE Funding through Effective Outreach, Engagement, and Application Support

In this category, respondents provided information about channels through which they learn of DOE funding opportunities, methods for improving outreach to underrepresented groups, and opportunities for partnering with organizations to improve engagement. An overarching theme of many responses was the recommendation to consolidate DOE funding opportunity announcements and applications into a simplified online portal.

Most Respondents Learn of DOE Funding Opportunities through Email Lists

How do you become aware of DOE funding opportunities and other forms of assistance? Which do you find most effective? What makes this an effective pathway for you? Please specify relevant channels, including news media, press releases, social media, stakeholder email lists, word of mouth from colleagues, etc.

Most respondents heard about DOE funding opportunities through email lists. Figure 2 details all responses.

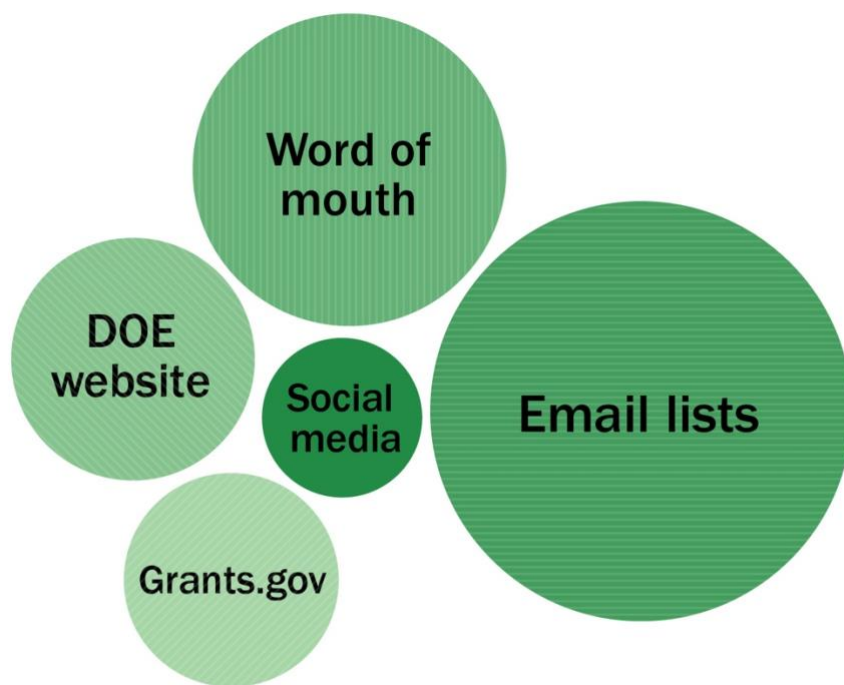


Figure 2. Breakdown of how respondents heard about DOE funding opportunities. The size of each circle is roughly representative of the number of respondents who mentioned each channel. Note that no respondents heard about funding opportunities through traditional media or press releases.

- **Email lists are an effective, well-utilized channel for advertising DOE funding.** Email lists were considered the most effective channel to advertise funding and were the most common response to this question. Respondents noted it was easy to sign up for email lists and scan them for relevant information. Several followed email lists curated by other

organizations in addition to email lists curated by DOE. Many respondents also noted that it would be useful to have a consolidated list of all DOE funding opportunities so they can avoid scanning several emails.

- **Informal social networks through which DOE funding opportunities are discussed introduce inequities.** While most respondents considered email lists to be the most effective way of hearing about DOE funding opportunities, a few preferred social media or word-of-mouth. However, many noted that existing social networks through which funding opportunities are discussed are too narrow to reach the intended audience and introduce inequalities. One respondent noted that “...such ad hoc network-based referrals are far from fair as research indicates that networks may perpetuate racial and other forms of inequality.” Respondents recommended DOE pursue more inclusive means of promoting funding opportunities and broaden the audiences for such opportunities.

DOE Can Improve Advertising to Underrepresented Groups by Partnering with Trusted Institutions, Providing Access to DOE Staff, and Making Information More Accessible

How can DOE better distribute information about open opportunities to communities and innovators traditionally underrepresented in climate innovation and entrepreneurship?

Respondents provided many helpful suggestions for improving how DOE advertises funding opportunities. Several actions were suggested by many respondents, as summarized in Figure 3. The most frequent responses were to partner with trusted institutions, provide direct access to DOE staff, and make information more accessible. Other suggestions were less common but still valuable. Respondents suggested DOE:

- **Partner with trusted institutions.** This may include CBOs, historically Black colleges and universities (HBCUs), and minority-serving institutions (MSIs).
- **Provide direct access to DOE staff or create a DOE regional office or community liaison.** One respondent suggested this could be accomplished, in part, by expanding DOE’s Office of Indian Energy Policy and Programs. Another respondent noted:

For a more substantial and long-term impact in increasing access to DOE funding, DOE needs to develop an outward-facing organization structure. This can include regional offices to support continuous community engagement (workshops/training/networking sessions), to introduce CBOs and members of the community to new technologies and partners, and to get community input on the design, development, and deployment of appropriate community energy technologies. As of now, DOE does very little to identify community needs, and R&D [research and development] takes place in a technology bubble that community members are removed from. A major organizational shift is needed to bring communities into the DOE process and ecosystem.
- **Make information more accessible.** This could be accomplished by using simpler language, providing translation, creating audio/visual content, ensuring information is accessible to people with disabilities, and ensuring information is culturally sensitive.

- **Improve DOE’s web presence and increase advertising.** Respondents suggested advertising opportunities for assistance on social media.
- **Include funding opportunities that are more relevant to communities.** This could be achieved by including more broad funding opportunities, such as the Advanced Research Projects Agency-Energy (ARPA-E) Open Topic or working with communities to develop tailored funding opportunities. One respondent recommended the following:

...CBOs and CBO-serving organizations should be invited to help DOE craft more broadly applicable FOAs [Funding Opportunity Announcements] that are more directly relevant to the work that CBOs do (and yet within DOE’s mission). To help support participation, DOE should compensate CBOs for these efforts.

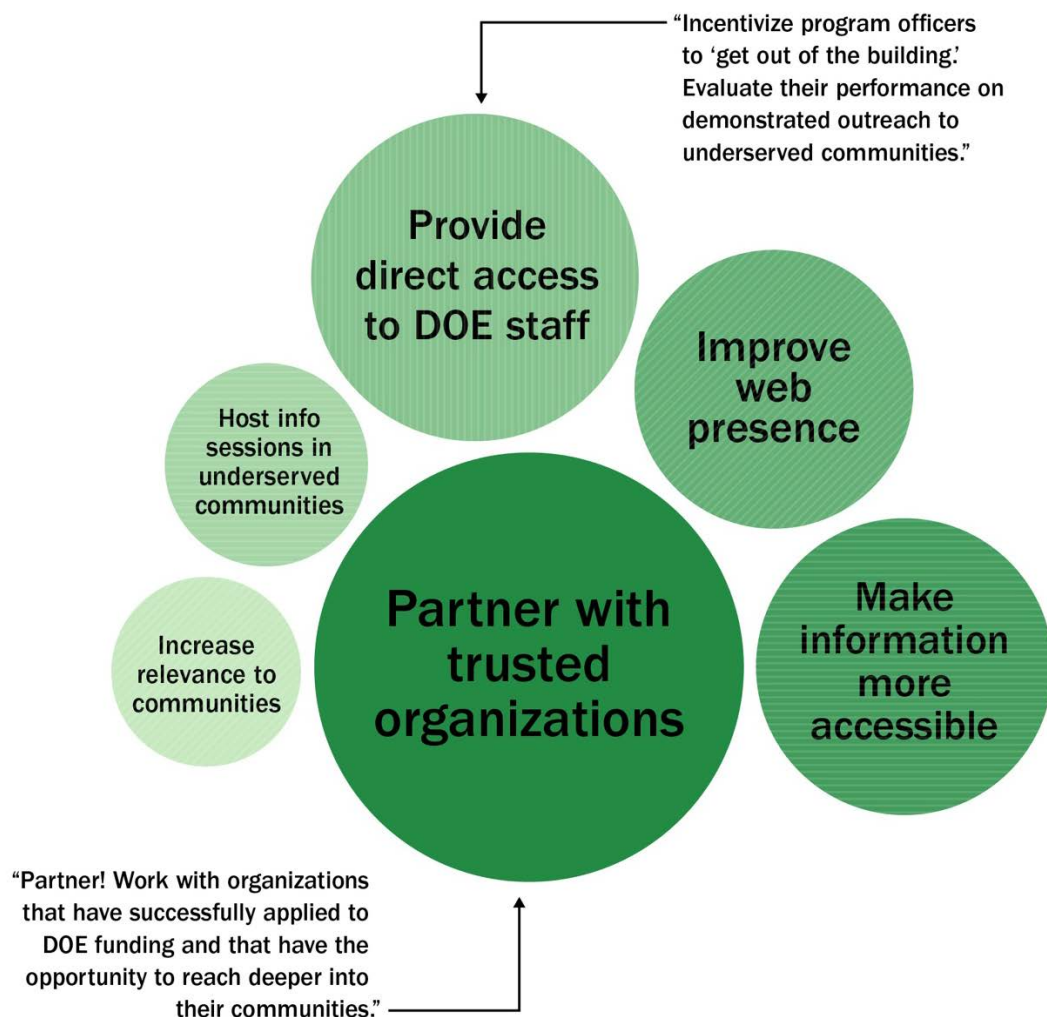


Figure 3. Suggestions for improving distribution of DOE assistance to underrepresented groups. The size of each circle is roughly representative of the number of times the suggestion was given. Note this is not an exhaustive list; only the most frequently suggested responses are listed here.

Partnering with Organizations Offers Opportunities to Effectively Engage Underserved Innovators

Do you know of organizations that effectively engage with innovators and entrepreneurs in underserved communities? How can DOE partner with these organizations?

Respondents provided more than 90 organizations with which DOE could partner. Respondents also provided general opportunities for improved engagement, including:

- **Provide funds for state or local small business organizations to support engagement.** Efforts could include hosting workshops or forming mentoring programs to help businesses apply for DOE funding.
- **Contract with organizations to serve as “matchmakers.”** DOE could notify them of funding opportunities, and they could identify relevant organizations to apply. This may be especially useful for tribes.
- **Engage with CBOs.** This may include forming long-term cooperative agreements or otherwise providing sustaining funding to CBOs.

Respondents Support Creating a Simplified Portal for All DOE Funding Opportunities

To make its funding opportunities more accessible and inclusive, DOE is considering stating application requirements in a simplified portal describing the range of funding opportunities and support services, guides to the range and types of funding mechanisms, and providing support services. Do you think these measures will be helpful or effective, and if so, how? What additional measures would you suggest?

A total of 32 out of 34 respondents who answered this question supported creating a portal. The few respondents who reacted negatively to this suggestion believed it would be helpful but thought other improvements should take priority.

Several respondents named organizations with similar portals that DOE could use as a model, including:

- Small Business Innovation Research (SBIR)
- U.S. Economic Development Administration (EDA) Build Back Better Regional Challenge
- European Commission funding and tender opportunities
- California Energy Commission Empower Innovation Platform
- National Science Foundation (NSF).

Respondents also provided many suggestions for portal features and characteristics, including:

- Examples of successful applications
- A dedicated help desk
- A listing of all funding opportunities across DOE and other federal agencies

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- Simple language
- Step-by-step instructions with a clear timeline
- A calendar of current and upcoming funding opportunities
- Social networking functionality, such as Slack, to connect with other applicants
- Keyword search and filtering function
- Template files
- Don't require log-in credentials to access
- Clearly stated eligibility criteria.

Category 2: Barriers to Applying for and Receiving Funding from DOE

Respondents provided information about barriers they encountered while applying for DOE funding opportunities, which in some cases prevented them from applying. They also discussed additional hurdles encountered after submitting applications, opportunities for DOE to improve the application process, and how cost-share requirements can be barriers to applying for DOE funding. Many respondents described how DOE and its funding opportunities are perceived by underserved groups. Finally, respondents detailed the impact of receiving or not receiving DOE funding on their careers.

Applicants Find Applying for DOE Funding Opportunities Complicated and Time-Consuming

Have you previously applied for DOE funding? If so, what kind of funding opportunity—including Funding Opportunity Announcements (FOAs), SBIR grants, prizes, etc.—did you apply for? What challenges did you experience in the application process?

A total of 34 out of 43 respondents who answered this question had previously applied to various DOE funding opportunities. Most applicants applied to FOAs, followed by SBIR grants. Only a few had applied to prizes or opportunities for technical assistance.

Despite widespread experience applying for DOE funding, respondents raised several common challenges they faced in the application process, as summarized in Figure 4 and detailed below.

- **Applications are complicated and difficult to complete without significant experience.** Some components, such as a detailed budget calculation sheet, are confusing and too detailed for small organizations. While some organizations hire consultants to help navigate the process, such consultants are expensive and difficult to find.
- **Applications require a large time commitment that many small organizations cannot spare.** Additionally, many respondents felt that spending such time presented too much risk, considering the low chance of getting an award.
- **Eligibility and selection criteria are unclear.** One respondent even noted that the frequently asked questions page often points back to the original application documentation and does not provide any additional clarity.
- **Recruiting partners is challenging.** Some organizations are unsure of which potential partners would strengthen their application.
- **The scope of funding opportunities is too narrow.** It is difficult to predict topics with enough time to prepare a competitive application. Relatively broad and repeated topics could ameliorate this concern.
- **Funds offered in FOAs are too large for small organizations to be competitive.** There is a need for awards smaller in dollar value.
- **The award notification timeline is too long and uncertain.** Some respondents reported shifts in the award notification timeline.

- **The time period between the announcement of the funding opportunity and the application deadline is too short.** This is particularly exclusionary for tribes, which often require a tribal council resolution before submitting a grant response. As one respondent noted, “By the time the grant is released, and the Tribal government meets to decide whether to pursue the grant and crafts a resolution, there is not much time left to write the grant response.”

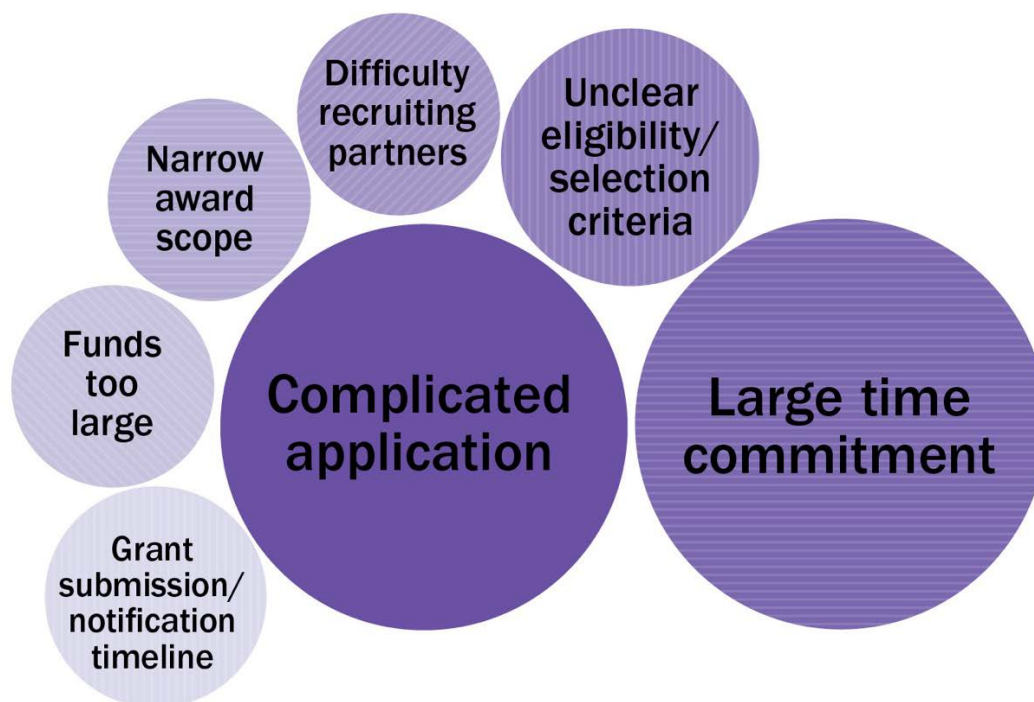


Figure 4. Barriers to applying to DOE funding opportunities. The size of each circle is roughly representative of the number of times the suggestion was given. Note this is not an exhaustive list; only the most frequently suggested responses are listed here.

Barriers Prevent Underserved Groups from Applying to DOE Funding Opportunities

If you have not previously applied for DOE funding, what specifically has stopped you from applying (content of solicitation, process, awareness of opportunities, etc.)? Please provide details about the type of funding/solicitation and the specific issue that prevented or discouraged you from applying.

Twenty-six respondents answered this question. Of these, the overwhelming majority named barriers to applying for funding; only two respondents claimed not to have encountered barriers. Respondents provided many examples of challenges that had or could prevent potential applicants from applying for funding, with many respondents citing multiple barriers.

Barriers to applying for funding were similar to those encountered during the application process (see the previous section, “Applicants Find Applying for DOE Funding Opportunities Complicated and Time-Consuming”). The most commonly named challenges were that the application process was overly burdensome; funding opportunities were too narrowly scoped or

inapplicable to many organizations; cost-share requirements were too high; and there were difficulties meeting partnering requirements. According to one respondent, “Small organizations are not only struggling to keep up with the application process but also grant management.”

Regarding the scope of solicitation topics, another respondent noted the following:

DOE’s R&D funding primarily goes to FFRDCs [federally funded research and development centers], universities, and large companies. These groups simply do not employ very many underrepresented groups or individuals, and DOE’s funding accordingly ends up outside the target groups of this RFI. A contributing factor is that DOE funds basic research, rather than applied research or commercialization, and these projects are staffed by highly educated individuals not from underrepresented groups. By the time a technology or idea is commercialized to the point that it is employing folks from underserved communities (which they often do due to economic development incentives), DOE has deemed them too mature to fall under their funding.

Respondents noted several other barriers to applying to funding, which are largely described in the section above. These include:

- Challenges regarding the award management process
- Long time frames to receiving funds
- Large size of awards
- Potential applicants being unaware of opportunities
- Confusing eligibility requirements.

Touching on a few different barriers, one respondent noted:

DOE funding opportunities typically require large partnerships that make it difficult for smaller grassroots organizations to apply due to a lack of capacity and an insufficient scale of impact... Although DOE may seek projects led by small, community-based organizations, the requirements of scale are not accessible or practical to these targeted organizations. Small community-based organizations working in coalition may still struggle with a lack of capacity to manage the grant, if awarded.

When asked what solicitation they faced barriers in applying to, most respondents either did not identify a specific type of funding mechanism or solicitation or named multiple types of funding mechanisms. Respondents commonly referred to “DOE funding opportunities” without naming a specific mechanism or solicitation; in some cases, respondents discussed barriers with regard to government funding as a whole. Named mechanisms or opportunities included SBIR/Small Business Technology Transfer (STTR), various program-specific funding opportunities, prizes, and DOE’s Loan Program Office (LPO) applications.

Most Applicants Have Negative Preconceived Notions About Applying for DOE Funding

Do you believe there are preconceived notions about applying for DOE funding opportunities that might prevent or discourage innovators or communities from seeking DOE funding? If so, what are they?

Respondents reported a range of preconceived notions that limit access to DOE funding. Only one of 21 respondents who answered this question said there were no preconceived notions. The most prominent perceived barriers include the following:

- **DOE grants require existing connections.** This may include relationships with national laboratories and/or elite universities. Many respondents believe it is unproductive to apply if such connections do not exist. Small entrepreneurs and underserved communities are unlikely to have these connections. One respondent noted, “The process in and of itself has an implicit bias towards organizations and actors that are part of the incumbent network of power and resources, thus reinforcing institutional racism and inequity.” Or more simply, “Breaking in is hard to do.”
- **Underserved organizations do not have the resources to prepare a competitive application.** Several respondents noted that the technical challenges and associated costs of preparing an application are high, particularly noting that DOE standards are higher compared to other federal agencies. One response named DOE proposals as “graduate-level” work relative to other “grade-level” federal grant opportunities. The amount of work involved in preparing a grant is also linked to partnership requirements, which may be difficult for those in underserved communities and smaller firms. One respondent noted:

...letters of support may be a barrier for organizations or Tribes who are in more insular, self-sufficient communities. Finding support outside of a community, especially if it is seen as against the self-interest of a utility or similar organization as renewable energy would be, can be a challenge for these grant responders.
- **DOE funding opportunities are not targeted toward communities of interest, including smaller firms and underserved communities.** A respondent noted this might be, in part, because DOE opportunities are too targeted, restricting applications from firms and communities with novel ideas. Others noted there is a need for more opportunities specifically targeted to underserved communities and disadvantaged business enterprise (DBE) firms. For example, one respondent stated, “...some organizations do not feel that the FOA titles, language, and content resonates with their work. In turn, they are discouraged from dedicating the significant time required to apply for DOE funding, if they are aware opportunities are available to them at all.”

Another respondent stated:

Our experience indicates a simple fact: grant programs that seek to fund zero-emission technologies will not receive applications from communities who cannot afford zero-emission technologies. This may discourage under-resourced communities from pursuing more practical solutions to reduce their emissions. In some instances, near-zero-emission

technology could be the only available and best option for communities and a zero-emission focus removes their ability to choose.

- **DOE supports early-stage researchers more than entrepreneurs.** One respondent noted, “In our experience, community-based organizations do not necessarily think of DOE as a potential funder, because the agency is known for supporting research and development, academic institutions, and labs.”
- **Grantees may have to share intellectual property (IP).** Respondents voiced concern about sharing IP generated during government-funded projects.

Finally, several respondents noted a lack of trust among many targeted entities and DOE or government in general. According to one respondent:

Many EJ communities do not trust the federal or state government to fix the problems that government agencies created. Therefore, it will be important for DOE to establish local partnerships with the intent of repairing mistrust that many communities have related to government support. This can be done by fully supporting early adopters of DOE programs and demonstrating the benefits and impact beyond transactional relationships or information collection.

Cost-Share Requirements Present Significant Barriers for Many Applicants

Are cost-share requirements a barrier to applying for funding? If so, please provide a detailed explanation of how they have been a barrier.

Thirty-seven out of 41 respondents thought cost-share requirements present a barrier to applying for DOE funding for the following reasons:

- **Small institutions struggle to access capital through traditional fundraising.** This may require engaging venture capitalists early in technology development, which dilutes founders’ ownership of their company. One respondent noted:

...diverse innovators have less access to traditional funding sources, especially during the early stages when contributions from “friends and family” account for large portions of startup capital—a resource afforded to entrepreneurs whose networks include high-net-worth individuals. Entrepreneurs are then often able to leverage this initial flexible startup capital to secure additional capital from more traditional funders to meet cost-share requirements.
- **Small institutions struggle to form partnerships with enough institutions to cover cost share.** Forming partnerships takes time and connections that small institutions do not have. One respondent noted that such partnerships may pose a significant risk for small institutions, as the primary applicant is required to cover the cost share if a large institution withdraws from the project. Another noted that larger firms may use cost share as an excuse to form unequal partnerships with small firms.
- **Cost share cannot come from federally funded institutions.** Cost share applies to the total project budget. If an organization is partnering with a national laboratory, which cannot contribute to cost share, this requirement results in the organization funding a

portion of the work that occurs at the lab. This may discourage partnering with national laboratories.

- **Tribal, state, and local governmental entities cannot raise money for cost share due to constraints in the budgetary process.** According to one respondent, “For Tribal communities, cost sharing is a barrier as funds are allocated to the direct needs of the Tribe. Depending on the Tribe’s income opportunities (casino/no casino, for instance), funds can be scarce and therefore not available for cost-share purposes.”
- **Documentation required to demonstrate the ability to meet the cost share is burdensome, especially since it is required before the grant is awarded.** One respondent suggested that this could be alleviated by requesting this documentation after the grant is awarded, as private funders would be more likely to contribute after DOE demonstrates support.

Many respondents recommended reducing or eliminating cost share to make DOE funding opportunities more inclusive. One respondent noted:

...less-resourced universities educate the majority of the underrepresented minority students and the majority of the federal Pell Grant recipients who attend research-active U.S. institutions, so shutting these universities out of EERE funding opportunities means that there are fewer research opportunities for the students they serve. We doubt that these outcomes are intended objectives of EERE’s cost-share policy.

The overall sentiment of respondents was that cost share burdens most innovators from underserved groups and should be sharply reduced or eliminated.

DOE Should Simplify Applications and Provide Targeted Resources To Support Applicants

How might DOE better support applicants and potential applicants in applying for DOE funding opportunities, either directly or through other organizations? What resources can DOE provide to organizations that support applicants for DOE funding opportunities? If applicable, how was your experience with DOE’s Small Business Innovation Research (SBIR) Grants Phase 0 program?

Respondents shared several ways DOE could better support applicants applying for DOE funding opportunities, including:

- **Simplify and streamline the funding opportunity process.** This could start with a single-entry webpage for funding opportunities across the agency, listing the various opportunities and technology areas, as discussed in detail in Category 1. The page could also include requirements and specifications for funding programs and a glossary to explain terms. DOE could also work with other federal agencies to develop platforms and portals that work across multiple agencies. In addition to these accessible resources, one respondent recommended that DOE host annual meetings to offer guidance and resources on DOE funding opportunities and program structure.

- **Provide resources targeted toward first-time and less-resourced awardees.** This could involve strategic outreach, such as easily accessible trainings and webinars for new applicants, consulting services to support the review of proposals before submission, examples of well-written applications, or affordable and accessible resources for complying with government accountability regulations, which can be burdensome for small businesses and awardees in underserved regions.
- **Facilitate connections with other applicants.** These efforts would create connections with those who have successfully applied for and received federal funding for peer mentoring.
- **Fund intermediary organizations and CBOs to allow them to serve as liaisons between potential applicants and DOE.** This suggestion was emphasized in other response areas in the RFI. These organizations can offer services that include:
 - Project development and management for writing applications and executing funded projects
 - Technology development and demonstration activities
 - Manufacturing support
 - Workforce development and resources
 - Commercialization
 - Accelerator programs that offer resources to apply for federal funding.
- **Provide broader funding opportunities open to a range of new ideas.** Respondents pointed out that this could be accomplished by including open topics and/or categories in funding opportunities. Additionally, DOE could incentivize creative grassroots problem solving and ideas that support justice, equity, diversity, and inclusion (JEDI) goals. Other ideas included expanding funding targets to manufacturing districts, agriculture-based regions, educational campuses, and organizations that directly or indirectly serve disadvantaged communities.
- **Promote and incentivize partnerships with underserved and underrepresented groups to increase support for under-resourced applicants.** For instance, DOE could maintain databases of organizations, disadvantaged communities, underrepresented innovators and entrepreneurs, and MSIs to support developing partnerships among these groups. DOE could also ensure that technical support from its funded programs reflects JEDI principles. DOE can improve coordination with other federal agencies and build on programs aimed at economic and community development and worker training programs. One applicant recommended that DOE:

[B]uild a diversity, equity, and inclusion advisory board composed of individuals from disadvantaged communities—to inform the development of funding opportunities, highlight criteria that may inadvertently exclude disadvantaged groups, and help advise on creative, alternative criteria or solutions.

Many of these suggestions are discussed in further detail in responses to the questions in Category 3.

Applicants Believe the DOE Award Selection Process Is Opaque and Inequitable

After applications are submitted, do further barriers exist within the DOE selection process? For example, are the review criteria for DOE funding opportunities sufficiently equitable and inclusive? Are there additional logistical or administrative hurdles in the selection process? How might DOE address these issues?

Respondents identified the following barriers to equitable and inclusive applicant selection:

- **The selection process is opaque.** Lack of transparency in the selection process was the most identified barrier after the submission of the application. Many applicants stated that they received little meaningful communication from DOE while the application was under review, despite attempts to reach out for a status update. The lack of transparency was exacerbated by the long wait times between submission and winner announcement, as well as limited feedback upon announcement of selections.
- **Selection factors and review criteria enhance biases against disadvantaged groups.** This often results in favoring larger, more established institutions without adequately accounting for the unique characteristics of historically disadvantaged groups.
- **Reviewers are not diverse.** Respondents recommended selecting merit reviewers whose qualifications and backgrounds reflect JEDI goals and values. Specifically, reviewers should reflect the diversity of groups and people in target communities to minimize systematic bias. Respondents also identified concerns that reviewers do not reflect a diverse set of disciplines, expertise, and experiences.

Respondents identified opportunities for DOE to be more equitable and inclusive after application submissions. Specific strategies DOE could pursue include:

- **Provide transparent and comprehensive feedback.** This information would explain why applications were not selected and how scores were calculated and make recommendations for improvement. Some respondents suggested having a specific debrief for applicants who wanted more feedback on their applications. Comprehensive feedback would allow less experienced applicants to put forth more competitive applications in the future.
- **Improve reviewer diversity and provide JEDI resources and training to reviewers and staff.** Proposals targeting specific communities should have reviewers with experience and knowledge relevant to those communities.
- **Work with CBOs to refine selection factors.** DOE should identify appropriate selection factors and review criteria to reflect the needs of target communities. This would involve more heavily weighting applicants' experience with and representation of frontline communities and criteria to evaluate projects' potential benefits and costs to communities and to address environmental and health impacts of existing energy infrastructure.
- **Streamline funding for smaller, less experienced organizations.** To address administrative hurdles for less experienced and resourced organizations, DOE should provide a streamlined pathway with fewer administrative requirements. This pathway may also include intermediate organizations that could help less experienced

organizations navigate administrative burdens. Some respondents also indicated that DOE could reserve funding for underrepresented organizations specifically.

Receiving DOE Funding Benefits Respondents' Organizations, but Structural Changes to DOE Awards Would Ensure Continued Success

If you have received an award from DOE, how did this impact your career and/or your organization in the long term? If you have not been successful in receiving an award from DOE but have applied, has this impacted your career/organization? How can the structure of DOE awards provide sustainable development for recipients and ensure their long-term success?

Most respondents who have received DOE funding agreed that this funding was pivotal for their organization. In addition to the direct benefits that funding provides, successful applicants stated that they also benefitted from:

- **Enhanced community acceptance and interest.** DOE funding increased the likelihood that stakeholders took an interest in their work. This has included opportunities for future partnerships and cost-share sources, an easier time coordinating the use and acceptance of advanced technology at the state and community levels, and an increased interest in technology replication.
- **Improved organizational infrastructure.** Through funding received, organizations experienced enhanced resources, steady revenue, a diversified funding stream, growth, research and innovation capacity, and networking opportunities for strong professional partnerships.
- **Learning opportunities.** Individuals who worked on a DOE-supported project were able to build their knowledge base and learn more about state-of-the-art renewable energy and energy efficiency.

Those who did not receive DOE funding indicated that this was disadvantageous to their organization. Specifically, respondents stated that unsuccessful applications have led to:

- **Resource burdens.** Respondents stated that the cost and time required to apply for funding felt wasted, decreasing the likelihood that they would apply for funds in the future.
- **Reduced likelihood of future partnerships and cost share.** Rejected proposals may have been perceived as being bad ideas or technology, especially when reviewers provided no feedback. This perception may lead to partner organizations that are no longer willing to collaborate on future proposals or provide cost share on subsequent applications due to the assumption that the likelihood of funding is low and not worth the time and effort. Respondents suggested that reviewer comments or verbal support of an idea would be helpful in alleviating these perceptions for reapplication.
- **Reduced personnel morale.** Similar to how partners perceived an unsuccessful application as bad technology, staff and personnel lost confidence in the organization and their work and technology.
- **Growth delays.** Respondents indicated that organizational growth, product development, and time to market all take longer without additional funds or support from DOE.

While successful applicants agreed that DOE support and funding are beneficial on many fronts, they also agreed that some structural improvements could be made to DOE grants to ensure sustainable development, progress, and success. Recommended improvements include:

- **Ensure consistency in DOE staff during transitions.** While personnel transitions are inevitable, it is important to make sure that consistency in award administration is maintained for funded organizations. This includes providing consistent training for all program officers to ensure that guidance and project interest do not vary during DOE project lead transitions.
- **Eliminate costs associated with receipt of an award.** Participants identified certain costs to receiving an award, such as securing cost share and the legal consultation funds needed to make sure an organization is meeting DOE requirements and regulations.
- **Modify administrative and post award processes.** Specifically, respondents highlighted the need to make it easier to invoice in advance, simplify the administrative and reporting process, share results of nonproprietary awards, and lengthen funding timelines.
- **Reduce competition for secondary funding.** One respondent emphasized that secondary funding is critical in getting technology to demonstration or commercialization, yet receipt of secondary funding is difficult due to the competitiveness of applications. Allowing for noncompetitive review for secondary funding would be helpful in ensuring that success does not stop at technology development.
- **Provide capacity for underserved community engagement.** It is important that funded projects' community benefits are not inequitably distributed to communities or local agencies that could already afford new technology rollout. Making sure engagement takes place in underserved communities is important but more difficult due to a higher need to compensate local leaders who advise the project team, establish safeguards in the event of unexpected outcomes, and provide support for long-term maintenance of new technologies in communities.

Category 3: Support for an Innovation Ecosystem and Place-Based Innovation

Respondents strongly supported the idea that DOE interact with and support entrepreneurship-focused organizations such as incubators, accelerators, and community programs that provide grant-writing guidance, technical assistance, or financial support for early-stage innovators and companies. Respondents noted that these organizations play a critical role in bringing companies through the innovation pipeline. Respondents also noted that organizations that offered grant-writing support were critical to the success of smaller organizations' efforts to secure funding. However, this need is a result of the complicated nature of federal grant applications. The strong consensus of respondents was that simplifying the DOE grant application process and providing more avenues for applicants to speak to DOE staff would be crucial in improving the diversity of DOE grant applicants and recipients.

DOE Should Simplify the Grant Process, Expand Community Connections, and Allocate Funding for Underserved Applicants

What can DOE do, directly or indirectly, to provide access to funding and support for entrepreneurs/innovators from groups historically underrepresented in STEM or from underserved communities, and underserved communities as a whole?

Respondents described three key actions that DOE can take to address gaps in access to funding: improve the grant process, expand connections with CBOs and underserved organizations, and allocate specific funding for underserved organizations.

Respondents highlighted that DOE funding opportunities are inaccessible due to technical complexity, reporting requirements, and the large amounts of time and expertise necessary to complete applications. Suggestions to improve the grant process shared several themes:

- **Increase support for first-time applicants.** DOE should provide dedicated support for first-time applicants. Suggestions included more direct communication with DOE staff and having smaller funding programs with simpler applications. These could be leveraged as learning opportunities to help new applicants understand procedures, gain experience, and attain any necessary certifications so that they are better prepared to receive larger and more complex grants.
- **Improve funding opportunity advertising.** As discussed in Category 1, DOE could expand communication and engagement and create a centralized database. It was clear that announcements on the DOE website or related news channels have limited reach. In addition to social media campaigns, these offerings could be communicated on a local level or via state business registries. Respondents also suggested that a resource database would make it easier to stay up to date with DOE funding and mentoring networks, civic and government institutions, and other support services.
- **Redesign cost share.** As discussed in previous categories, many small and underrepresented organizations are unable to afford cost share and, as a result, are excluded from participating in DOE funding. Respondents generally asked that cost share be eliminated or reduced for such applicants. One suggested that DOE could utilize distress criteria (similar to EDA's public assistance grants) to lower the match requirements.

- **Simplify the application process.** Application documentation could be streamlined, made shorter, and written in simpler language. For example, FOA documentation could better describe the “appropriate length, detail, and focus of a potential response.” It was also suggested that DOE allow for application timeline extensions and provide additional support throughout the process.
- **Prepare applicants better.** This could include providing examples of successful applications and allowing those who were denied funding to request a debriefing to understand how to strengthen their future applications.

Most respondents suggested that DOE better support equitable community growth by building stronger relationships with:

- Local and underserved organizations
- HBCUs
- MSIs
- Community colleges
- Trade schools.

These engagements can create:

- Inroads on the community level
- Expand awareness about DOE programs
- Allow DOE to better address the needs of disadvantaged groups.

Specifically, respondents recognized that improved support for underserved students is an opportunity to better encourage their academic and career-related success in the clean energy sector. For example, one respondent suggested that “DOE should work with the Department of Education to provide education credits to the school systems and apply their training to the state testing requirements for STEM. DOE should also reimburse school systems who participate in energy-related jobs training.” MSIs, community colleges, and other schools may face barriers to climate and energy entrepreneurship and innovation, presenting an opportunity for impact from DOE support.

The most common recommendations for direct investment in underserved groups were investments in early-stage startups and minority-owned businesses. These investments could be in the form of federal procurement or dedicated funding programs. Respondents suggested these could be modeled after the Small Business Administration’s (SBA) set-aside program or be established based on a percentage of set-asides under an agency requirement. Additionally, it was suggested that DOE LPO should utilize new funding made available by the Energy Act of 2020 to appropriate funds to:

- Cover application fees, credit subsidies, and other costs to applicants.
- Adjust the fee schedule so upfront participation costs are less burdensome.
- Broaden eligibility categories under the Innovative Technology Loan Guarantee Program.

Another respondent suggested that DOE fund universities, colleges, incubators, accelerators, and other relevant actors to create on-ramp programs dedicated to increasing exposure to technology

commercialization processes for underrepresented groups. DOE could partner with the SBA and U.S. Patent and Trademark Office to carry out such programs, even using SBA’s Growth Accelerator or EDA i6 program as starting points.

Many Respondents Are Involved in Organizations that Support Entrepreneurs and Innovators from Underserved Groups

Are you part of an organization that provides support to entrepreneurs and innovators from groups historically underrepresented in STEM or from underserved communities?

Twenty-seven out of 31 respondents to this question answered that they had an affiliation with an organization that supports entrepreneurs from groups underrepresented in STEM or from underserved communities.

Nongovernmental Organizations Help Fund, Invest In, Accelerate, and Educate Innovators

What types of support do non-DOE/nongovernmental organizations provide to entrepreneurs/innovators?

Respondents noted that nongovernmental organizations’ (NGOs) support usually includes funding and investment, incubator-style entrepreneurial resources and networks, training and education, and legal assistance. Less frequently, NGOs may also provide community hubs, office space, resources, supplies, or other in-kind services. Details are provided in Figure 5.

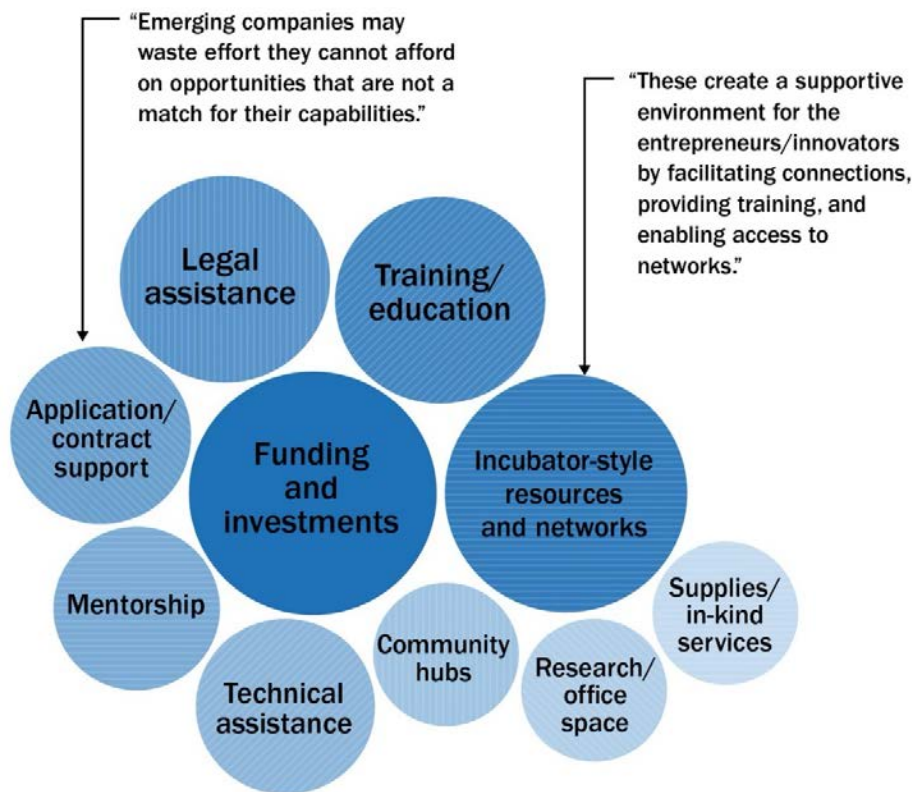


Figure 5. Types of support offered by non-DOE organizations to entrepreneurs. The size of each circle is roughly representative of the number of responses mentioning each category of support.

Organizations Help Underrepresented Entrepreneurs Succeed by Enabling Community Support and Enhancing Their Business Training and Readiness

What organizations have been successful in the short-term and long-term support of entrepreneurs/innovators from groups historically underrepresented in STEM or from underserved communities? How have these organizations been successful?

Respondents noted several ways that organizations have been able to support underrepresented and underserved entrepreneurs and innovators:

- **Support from incubators and accelerators.** When geared toward women and minority professionals and their early-stage organizations, these innovation hubs are essential.
- **State and federal partnerships.** By leveraging regional and national government resources, investment in underserved communities can be attracted and mobilized.
- **Direct outreach to communities.** Effectively engaging with community organizations, representatives, and citizens is vital to learning about local needs and building trust.
- **Lab-embedded entrepreneurial assistance programs.** By leveraging the distinct strengths of different national and regional labs, entrepreneurs and innovators access the expertise and facilities they need to advance. Programs tailored to underrepresented professionals are an important pathway to overcome barriers to research, development, and commercialization.
- **Community trust and engagement.** In the short term, creating a sense of belonging by offering efficient internal and external support systems is key to success. In the long term, community trust and engagement can empower organizations and individuals to not only be included but hold the platform to contribute.
- **Mentorship.** Insight, knowledge, and guidance from experts with similar backgrounds and relevant skills can encourage marginalized actors to take effective action as well as better understand and address systemic barriers to success.
- **Funding.** Transitioning businesses and inventions from R&D to commercialization requires investments that often exclude many disadvantaged professionals. Funding opportunities tailored to such organizations and individuals are necessary to address this gap.
- **Collaboration.** Partnerships between businesses, nonprofits, academic institutions, communities, and governments leverage synergies and promote success, especially involving the development of distributed energy resources.
- **Long-term engagement.** As opposed to short-term outreach activities, long-term engagement allows for shared growth, learning, and success. Because JEDI issues are deeply rooted, it takes time to confront these challenges and implement solutions.
- **Effective outreach.** Diverse forms of outreach that include all possible parties can allow for effective engagement. For example, using different media platforms and communicating in languages other than English are important strategies.
- **Community benefit agreements.** Private businesses can set aside financial resources for investment in underserved communities during various corporate acquisitions or

infrastructure projects by utilizing community benefit agreements. Federal policies such as the Community Reinvestment Act encourage regulated financial institutions to invest in climate and energy innovation on the community level. DOE could collaborate with the U.S. Department of the Treasury to promote these kinds of public-private partnerships focused on investment in underserved communities.

- **Training through grants.** Scalable grants can offer support for training for a variety of on- and off-site skills related to climate and energy technologies.

Respondents Identify More Than 100 Organizations for Potential Engagement

Are there specific organizations that have partnered with DOE to successfully provide support to innovators, particularly from groups historically underrepresented in STEM or from underserved communities in the past? Are there other organizations that are well-positioned to enter into such a partnership now?

Many respondents recommended that DOE enhance efforts to engage and collaborate with tribal governments and organizations. Respondents provided more than 100 organizations that engage with underrepresented communities or entrepreneurs. These organizations could be engaged as partners to widen the visibility and reach of DOE funding opportunities, as well as facilitate partnerships between grantees and organizations that can assist with funding applications and business development.

Effective Support for First-Time Applicants Includes Funding Opportunities and Training and Mentorship

In your experience, what have been the most effective programs for first-funding-in for entrepreneurs?

Respondents listed a variety of programs, including several government grants and initiatives such as the DOE SBIR program, ARPA-E funding opportunities, SBA grants, and U.S. Department of Defense programs. SBIR/STTR grants were the most mentioned program. Additionally, respondents found that training, nondilutive funds (that do not give company equity to the funder), and mentorship relationships were also highly effective for first-time entrepreneurs. For instance, one respondent noted:

SBIR/STTR programs are highly effective programs providing funding to startups and small businesses while also meeting federal R&D needs. These programs are focused on the inclusion of small businesses in R&D and high-tech innovation, which is a highly competitive area with significant barriers for small and disadvantaged businesses. The three-phase structure of the SBIR program ensures entrepreneurs and small businesses at all levels, whether new to the program or current participants, are eligible to participate and receive funding.

Another respondent highlighted the following:

In [their] experience, providing early-stage predevelopment funding is powerfully catalytic. Predevelopment funds can cover a variety of development expenses at the start of an enterprise and having access to such funding often determines

whether a project has a chance to succeed. Predevelopment funds are the most effective and efficient ways to support entrepreneurs, especially those from underserved communities who have been systematically denied access to capital and other wealth creation opportunities.

NGOs Provide a Variety of Services to Help Position Applicants for DOE Funding

What types of services could nongovernmental organizations (NGOs) provide to better position applicants for DOE funding?

The most common suggestions of services NGOs could provide included grant-writing assistance and facilitation of networks for the purposes of finding business partners, funding, or testing facilities, as detailed in Figure 6. As discussed throughout this RFI, respondents to this question felt strongly that current DOE funding protocols were high barriers to the success of smaller companies, first-time applicants, and minorities. One respondent noted that “based on [organization’s] surveys of participants to date, grant-writing support is the top technical support need of survey respondents.”



Figure 6. Types of support offered by effective nonprofit organizations to help entrepreneurs pursue DOE funding opportunities. The size of each circle is roughly representative of the number of responses mentioning each category of support.

Those barriers were largely related to the administrative burden needed to complete DOE applications, which many respondents felt was too high for small companies, especially those that did not have prior experience with the process. One respondent noted:

Underrepresented entrepreneurs often feel that without a supportive network, technical knowledge, and belief that in fact they are worthy of government funding, the opportunity is out of reach and not a viable option. Access to financial services and/or financial literacy when creating a budget [can also be a barrier, along with] staffing capacity to deliver on the funding. Providing potential applicants with mentors or representatives that are trained on the application process for Department of Energy funding and will support the applicants during the application writing process can better position applicants for DOE funding.

Other NGO services that were supported by several respondents included:

- Mentorship
- Improved dissemination of funding opportunities
- Seed funding
- Procurement and partnerships with disadvantaged groups.

For instance, one respondent noted, “Procurements are often focused on low-price bidders leaving the poorly capitalized [women business enterprises (WBEs)/minority business enterprises (MBEs)] at a strategic disadvantage and an ongoing cycle of exclusion.” Another respondent mentioned that providing comprehensive support, such as childcare supplements or travel expenses for entrepreneurs, would be beneficial for disadvantaged groups.

Respondents Recommend Grants of \$150,000 to \$250,000 Annually for Initiatives Aimed at Increasing Diversity and Representation in Entrepreneurship

If an organization were considering an initiative aimed at increasing diversity and representation in entrepreneurship, what actions might they consider? How can DOE support these organizations in their mission? What annual budget would be required? Please provide a brief explanation of potential activities at budget levels of up to \$50,000, \$50,000–\$150,000, \$150,000–\$250,000, and \$250,000–\$500,000.

There were few responses to this question, and responses varied in whether they described actions that an organization could take to increase diversity or how DOE could support such organizations. As there was considerable overlap between the two sub-questions, they are summarized together. Details are provided in the Appendix.

The actions mentioned included grant-writing support, entrepreneurial services (such as those offered by incubators and accelerators), and closer collaborations with national laboratories to facilitate technical assistance and testing opportunities. The most mentioned annual budget was \$150,000 to \$250,000, which respondents thought could support:

- Entrepreneurial training programs (e.g., an incubator/accelerator program for one or two participants)

- Market testing and intellectual property transfer services
- Small-scale research and development
- Facilitation networks (e.g., those that provide access to testing facilities, prototyping, etc.).

With larger budgets, proposed activities were similar but larger in scale, involving, for instance, larger cohort incubator/accelerator programs that include mentorship, pilot demonstrations, or larger-scale R&D or prototyping. One respondent suggested:

[W]orking with an entrepreneurial support organization to offer dedicated cohorts that bring together innovators from similar backgrounds and offer tailored support to reduce barriers to participation. Such support would ideally include mentors and instructors who share similar identities, backgrounds, and lived experience; a curriculum and approach that meets participants where they are and addresses their specific needs; and support for living expenses in addition to funds for pursuing technology commercialization. In our experience, these extra supports are effective at de-risking the decision to pursue innovation and entrepreneurship, as well as fostering success and a sense of belonging among participants. Depending on cohort size and the level of living stipends, such a program could be conducted, on a modest scale, with an annual budget of \$400,000-\$500,000.

With smaller budgets, respondents suggested targeted community outreach to disseminate funding opportunities to underserved communities and initial seed feeding. One respondent suggested:

Define targeted community and/or sectors and assemble a team representative of the targeted community to hold workshops and forums with a wide range of stakeholders, including individuals, existing entrepreneurs, aspiring entrepreneurs, community-based organizations, businesses, capital providers, and NGOs. The implementer will leverage these conversations to co-design the components of the proposed initiative, and its intended objectives, with partners and community members to ensure (1) local buy-in of the initiative, and (2) the program components effectively meet the needs of underserved groups in the community.

Category 4: Identifying Regional and Local Barriers to DOE Funding

This section aimed to identify regional and local barriers to DOE funding. Questions sought to understand if respondents have ever been discouraged from seeking or applying for DOE funding due to their location; if regional programs exist that could help to alleviate location-specific barriers; whether marketing of location-based initiatives reaches the appropriate communities; and how DOE can better provide support to communities facing local and regional barriers.

Respondents from Varying Regions Feel Funding Is Distributed Inequitably

Do you feel there are barriers due to your location that prevent or discourage you from seeking and/or applying to DOE funding?

Sixteen out of 24 respondents to this question indicated that regional and local barriers to DOE funding exist. Of those who elaborated on specific barriers, there were several recurring themes, described below and detailed in Figure 7.

- **Rural applicants have trouble accessing funding due to a lack of infrastructure.** Rural communities lack the necessary infrastructure, including available budgets, internet reliability, expertise and staff specialists, and human capital, to successfully obtain DOE funds.
- **Funds are not evenly distributed across the country.** Specifically, there was a perception among some respondents that there are geographic biases within the federal government toward coastal, high-tech states and regions with significant clean energy industries.
- **Exposure to funding opportunities is limited.** Some regions are limited in their exposure to DOE funding opportunities and are hindered by this lack of knowledge.

In addition to this feedback, which recurred across multiple responses, individual respondents raised several additional concerns that were equally informative.

- **The application process favors academia.** Applicants in academia are already familiar with large grant application processes, giving them a competitive advantage over other types of institutions.
- **There is a lack of infrastructure at smaller academic institutions, specifically at tribal colleges and universities (TCUs) and those affiliated with the Hispanic Association of Colleges and Universities (HACU) in remote regions and/or on tribal lands.** This includes limited laboratory facilities, overburdened faculty, insufficient staff for proposal writing, nonexistent strategic energy plans, and a limited infrastructure budget to satisfy preconstruction requirements for hardware proposals.
- **Eligibility requirements can be too restrictive.** As discussed in previous sections, some cost-share requirements eliminate the possibility of certain small or rural organizations applying. Additionally, one respondent felt that some programs meant to help stimulate research in less represented regions, such as NSF's Established Program to Stimulate Competitive Research (EPSCoR), limit disadvantaged institutions from accessing

foundational research funds due to their proximity to research-intensive institutions. Specifically, one respondent was in a large state, “home to [multiple] R1 universities, including [multiple] members of the elite Association of American Universities. As a result of the research productivity of these R1 institutions, [their state] does not qualify for [EPSCoR] program. [Respondent is at] a non-R1, regional comprehensive university. These facts combine to put [respondent] at a competitive disadvantage in DOE/EERE grant competitions.”

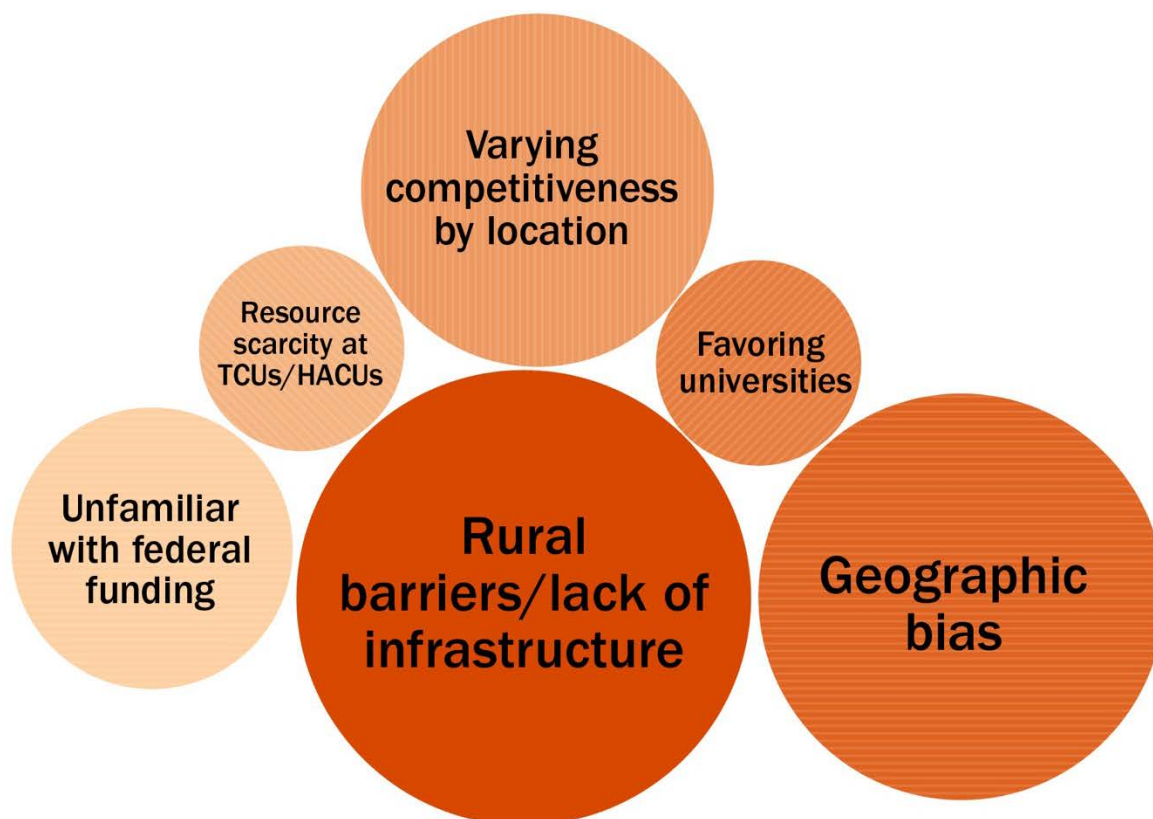


Figure 7. Barriers preventing respondents for seeking and/or applying to DOE funding due to their location. The size of each circle is roughly representative of the number of responses mentioning each barrier.

Some Respondents Are Aware of Local Efforts to Improve Funding Access, but Awareness Could Be Improved and Programs Expanded

What regional or local efforts currently in place are effective means to alleviating access to funding opportunities? Are there regional or local efforts that effectively enhance access to funding opportunities at DOE or other federal agencies?

While respondents indicated that barriers do exist, several also stated that they are aware of regional and local efforts to help alleviate these barriers and enhance access to DOE funding. A majority of such programs focus on increasing awareness of funding opportunities and building partnerships with community groups and other networks that connect startups and innovators. It is important to note that while several respondents were knowledgeable of local and regional programs to reduce barriers to funding, approximately one-third of respondents to this portion of the RFI were not aware of any local or regional efforts.

DOE Needs to Improve Collaborative Efforts and Simplify the Grant Application Process

How can DOE support underserved communities in overcoming regional and local barriers?

When asked how DOE can support underserved communities in overcoming regional and local barriers, respondents identified several needs:

- **Better collaborative efforts between DOE, regional offices, local government, and community organizations.** Stronger and more meaningful collaborations would ensure that information is reaching the target communities and supportive ecosystems are in place while at the same time allowing DOE to gain critical insight into barriers and challenges that are affecting specific community groups. Finding ways to build and fund these partnerships could also potentially lead to opportunities for community spread of knowledge through consultation.
- **Further collaborations with industry, utility companies and their trade ally programs, and federal partners.** At the federal level, interagency collaborations with groups already working in inclusion and equity programs (such as EJ or low-income housing programs) could provide a wealth of knowledge in terms of outreach.

Additionally, there were several suggestions pertaining to changes that can be made to the DOE application process, application requirements, and the administration of DOE grants, in line with recommendations described in other sections of this report.

- **Provide application guidance.** Guidance could be provided via consultation, technical support (via both locally based contractors and DOE staff), and potential partners to help applicants build stronger proposals.
- **Modify eligibility requirements.** Respondents indicated that it is important for eligibility requirements to be clear, location-focused restrictions to be reduced, and communities to be able to dictate the clean energy transition path that suits them best for their needs and available resources.
- **Tailor grants to fit and focus on underserved communities' needs.** Identifying underserved community needs, such as extreme heat, air quality, and public safety power shutoff events, could help provide a focus for future grants.
- **Enhance the involvement of non-R1 institutions.** This could be achieved either by creating programs that are exclusive to non-R1 institutions or mandating non-R1 partnerships.
- **Reduce the high cost share associated with funding programs.** This is particularly important in underrepresented, small, or rural communities where finding the infrastructure and additional financial support is burdensome and prevents potential applicants from seeking DOE funding. Reducing cost share has the potential to allow for a more inclusive applicant pool. Supplementally, one respondent suggested that creating a larger number of small funding opportunities would help to initiate innovative local projects from small organizations without the capacity to manage large grants.

Awareness of DOE Place-Based Initiatives Is Low

Are you aware of current DOE place-based initiatives, such as the Energy Transitions Initiative Partnership Program (ETIPP)? If so, do you feel these initiatives will help you obtain federal funding? Why or why not?

When respondents were asked if they were aware of current DOE place-based initiatives, such as ETIPP, most responded “no.” Of those who answered the second question (whether such initiatives might help them obtain federal funding), most responded that they needed more information.

Respondents who had positive outlooks on the effectiveness of current DOE place-based initiatives said that these initiatives would help to minimize hurdles and provide access to technical assistance, ultimately increasing applicants’ chances of success. Respondents who did not think these initiatives would be helpful explained that they have too heavy of a focus on national laboratories, are limited to remote island communities, and are too restrictive for small business startups that cannot secure capital.

Category 5: Barriers to Performing within the DOE Funding System

Respondents shared feedback about challenges they experienced related to accomplishing project goals, promoting effective team performance, and accessing resources to enable success. Respondents also made recommendations for how DOE can make improvements to address these barriers, with overall suggestions being to streamline the process to meet project goals, expand assistance to resolve team performance issues, and enhance enabling resources.

Some Respondents Struggle To Receive a “Go” Decision

Have you or individuals and organizations you have worked with received funding but not received a “go” for subsequent performance? Describe your experience and the challenges you faced to accomplish the goals set forth in your award.

Five out of 12 respondents to this question reported that they did not receive a “go” decision, meaning they did not receive DOE approval to continue a project but met negotiated technical milestones. Regardless of their experience receiving a “go” decision, respondents shared suggestions about how to improve the overall DOE process for meeting award goals. These comments indicated that programmatic requirements should be simplified and more flexible; support services for administrative needs should be expanded; and cost-share requirements should be waived for organizations that are unable to afford them.

Respondents highlighted issues with the programmatic and administrative conditions for maintaining a DOE award. They revolved around the contracting, reporting, continuation, and partnership processes. Respondents made several recommendations to increase the simplicity and flexibility of programmatic requirements, including:

- **Restructure the contracting process.** This process is long and burdensome, especially for small organizations.
- **Streamline reporting requirements, which can divert necessary time away from research.** This obligation can slow projects and result in a “no go” decision for subsequent funding. Respondents recommended several ways to simplify reporting, including adjusting quarterly award reporting documentation to include checkboxes, drop-downs, and bulleted entries; allowing small nonprofits to use their annual member reports as their DOE narrative reporting requirement; using financial reporting mechanisms consistent with other federal agencies; and implementing a guided process for budget projections.
- **Improve continuation flexibility.** When one respondent was unable to proceed with their project, they could not transfer it to another organization because project continuation requests can only come from the group that originated the project.
- **Support partnership transfers.** When prime awardees are unable to receive a “go” decision, their partners and subgrantees are often unable to continue the project due to restrictions on transfers of work responsibilities. Respondents proposed increasing the overall flexibility of partnership structures to allow transfer of work between prime awardees, subrecipients, and other partners, which could be especially helpful where there is a need to update project goals.

Respondents felt that the availability of support services through DOE is inadequate, and information about the resources that are offered is insufficient to effectively access support. This is particularly challenging for smaller organizations, which often have limited capacity to identify opportunities for expert guidance but face a heightened need for such services. Recommendations for expanding support services for administrative needs included ideas about improving technical support services and expanding pathways for communicating needs and learning about DOE offerings.

- **Improve options for administrative assistance.** This could include using award funding to pay for certified public accountants or administrative report writing.
- **Increase the frequency of communication with DOE, especially for first-time recipients.** Respondents felt that it should be easier for DOE and awardees to share project updates and work together to overcome challenges.

As described in other sections of this report, cost-share requirements can be a substantial limitation to small organizations' ability to participate in DOE funding programs. Respondents suggested that cost share be waived when affordability presents a barrier. They rationalized that federal cost share for nonprofit organizations has been waived in the past and recommended DOE follow suit to waive the requirement for qualified frontline community organizations and direct service nonprofits.

Team Performance Issues Are Common and Can Be Addressed with Tailored Financial, Administrative, and Collaborative Resources

Have you had team members that have not been able to perform as expected or complete tasks as planned? Provide context on the circumstances surrounding that individual or organization's challenges.

Six out of nine respondents to this question reported experiencing team performance issues. Respondents shared several key barriers to team performance and emphasized that smaller entities face unique and unaccounted barriers to success that require specific accommodations, such as:

- **Frontline community organizations experience personnel stress.** Many frontline community organizations are volunteer run with few paid staff, resulting in stress and uncertainty regarding personnel management. One respondent suggested that DOE may not understand the exacerbated labor costs that community organizations face. This respondent continued to explain that:

It is our observation that many federal program officers have little experience with frontline community organizational practices themselves, leading to federal staff making inaccurate assumptions about what may be accomplished, how much time it will take to accomplish outcomes, and other capacity-related issues impacting frontline communities every day.

- **Team members, especially students, who face socio-economic vulnerabilities need additional support.** They face distinct stressors on their capacity to execute tasks on schedule and succeed in their positions. One respondent shared that these insecurities may include “access to food, housing, finances, technology/internet, childcare, or immigration status; mental or physical health challenges; disability; trauma; and other

factors” and that they can “compound to create an even more significant net vulnerability.”

- **Partnerships can be misaligned when small organizations partner with large organizations.** Some respondents felt that FOA partnerships have encouraged small organizations to join with larger ones for the sake of application competitiveness rather than mission and capacity alignment. This sentiment represents the opposite perspective from recommendations in previous sections of this RFI, which suggested that partnerships between smaller, underserved groups and large institutions could lead to more inclusive and equitable innovation outcomes. This suggests that DOE needs to be careful of various considerations if such partnerships are incentivized.
- **Funds are inequitably allocated between partners of different organizational sizes.** For example, one respondent mentioned that when larger organizations are prime awardees, they may receive high approved overhead rates while smaller subrecipients are limited to a default rate of 10%. They stated that this rate does not cover actual overhead costs for any organization and results in inequitable funding distribution.

Respondents shared various ideas to resolve team performance issues during their participation in DOE funding opportunities. This included opportunities to provide financial, administrative, and collaborative resources tailored to their needs.

- **Provide stipends.** These would be intended for community and volunteer participation in DOE-funded programs.
- **Reduce cost share for small organizations.** This reduction would be in exchange for the group agreeing to take on an expanded role as a “community intermediary and liaison.”
- **Streamline administrative needs, especially for small awards and organizations.** One respondent noted that “[t]o the extent that the challenges of reporting outweigh the benefits of the grant, we would caution DOE as this eventually stifles innovation and creativity and distracts from overall project goals.”
- **Offer “partnering training” or similar support for frontline organizations.** This could include extended application deadlines to improve partnering arrangements.
- **Require awardees to collaborate with communities.** This would encourage awardees to engage with members of the public by conducting comprehensive planning and outreach and fostering support for project demonstration, deployment, workforce development, and local manufacturing.

Improving Access to Administrative Tools, Networking, and Follow-On Financing Enables Successful Performance in DOE Funding Programs

What recommendations or resources would have enabled you, your organization, or partners to have a higher likelihood of success in those circumstances or in future funding programs?

Respondents noted that many small businesses do not have in-house access to the required accounting, administrative, and reporting tools that are needed to successfully execute a program. The administrative burden reduces the time that could be spent on technology development, which is key in the early stages. Respondents suggested that providing access to the following resources could help minimize this issue:

- Accounting and administrative tools or support
- Baseline business planning
- Leadership training and best practices
- Award management guidance
- Centralized project management and invoicing platform
- Training and resources for establishing internal controls, reporting, and quality control.

Respondents suggested the following actions to reduce the financial challenges they face after receiving DOE funding:

- Reduce delays once an award is announced
- Reduce time between award phases
- Offer resources detailing funding options between phases
- Provide resources to offset the cost of filing for patents.

Respondents requested that DOE hold frequent check-ins with awardees in addition to any kickoff meetings, as mentioned in other sections within this category. In addition, respondents suggested increasing opportunities to network with various groups, which may include:

- Peer-to-peer networking among awardees to help facilitate knowledge exchange and encourage partnering opportunities.
- Access to subject-matter experts or consultants in a given area.
- Local, state, and federal governments, which may provide training for underserved communities.
- Opportunities for principal investigators to rotate into roles at DOE for a short time to increase their understanding of the system, as one respondent suggested.

Lastly, respondents requested improved and expanded workforce development opportunities to ensure there is a pipeline of engineers and technicians capable of supporting the contracted work.

Category 6: Open Topic

Respondents were invited to submit feedback on topics not specifically addressed in the RFI. Most suggestions fell under other categories and were incorporated above. However, some unique points are highlighted here.

Requests for Information Represent Barriers to Inclusion

Multiple respondents noted that responding to RFIs is time-consuming, especially for small organizations that are short on resources. This means that organizations better connected to the DOE ecosystem and with resources to spare will be the ones that have their voices heard. Therefore, responses to RFIs may not be representative of the communities DOE wishes to engage. One respondent emphasized:

...RFIs are not the right mechanism to solicit input on DOE's funding structures and opportunities for improvement. RFIs require significant capacity and bandwidth to craft responses, which the organizations that DOE intends to better serve are unavailable to provide. Organizations that complete the RFIs are already engaged in the DOE ecosystem, understand how to navigate it and have resources to spare, so the information collected may not be representative of the target population.

While DOE made submitting a response to this RFI as simple as possible within the existing system, respondents suggested additional measures to alleviate barriers to completing the RFI, such as accepting responses in alternative forms, such as videos. Other respondents suggested that organizations should be compensated for the time it takes to complete the RFI.

DOE Should Develop, Publicize, and Steward JEDI Goals and Metrics

To foster more inclusive innovation, respondents noted the importance of DOE developing specific JEDI goals. One respondent stated that there needs to be a well-developed definition for what energy justice and inclusivity means across DOE and national laboratory partners and that metrics then need to be established to track progress toward improving JEDI metrics. Another respondent stated that "...it is important for leaders within the Department to set public goals, preferably big audacious goals, such that the goal has staying power beyond the tenure of a single individual or champion." Another respondent emphasized the importance of grant awardees committing to a JEDI plan to access funding and potentially additional funds if JEDI plans are demonstrated to be successful.

Conclusion

Responses collected through this RFI highlighted various topics related to inclusive innovation, including how organizations learn of funding opportunities, preconceived notions applicants hold about DOE assistance, impacts of receiving or not receiving DOE funds, how existing organizations support underserved innovators, and pathways for DOE to contribute to efforts to make energy innovation more inclusive. Respondents listed many organizations that DOE can partner with to advertise funding programs, alleviate place-based barriers to accessing funding, and better support underserved innovators. Most of these organizations have not previously partnered with DOE and can be valuable resources as DOE works to promote inclusion within its financial and technical assistance offerings.

Respondents also identified successes, barriers, and opportunities for improving access to DOE funding opportunities, detailed below.

Current Successes

- DOE email lists that advertise funding opportunities are easy to sign up for and scan for useful information.
- ARPA-E Open Topic FOA⁶ provides the flexibility groups typically left out of DOE funding opportunities are looking for.
- Current place-based initiatives, such as ETIPP, help to minimize hurdles and provide access to technical assistance, ultimately increasing applicants' chances of success.

Barriers to Inclusion

- The complexity of both the application process and grant management presents a high barrier, especially for smaller companies, first-time applicants, and minorities.
- Cost share is limiting for small organizations and should be reduced or eliminated.
- Social networks through which funding opportunities are currently circulated introduce inequity.
- Current advertising is not accessible due to the complexity of information and lack of translation, accommodations for people with disabilities, or cultural sensitivity.
- Forming partnerships is challenging for underserved groups and often requires existing connections.
- The review process is opaque and inequitable.
- Rural applicants and those from underserved regions have trouble accessing funding due to a lack of community infrastructure, expertise, staff specialists, and internet reliability.
- Current place-based initiatives, such as ETIPP, have too heavy a focus on national laboratories, are limited to remote island communities, and are too restrictive for small businesses and startups that cannot secure capital.

⁶<https://arpa-e.energy.gov/technologies/open-programs>

- Delays in funding after the announcement of an award and the lack of supplemental funding between phases can limit commercialization prospects for small businesses.
- RFIs are barriers to inclusion because small organizations cannot spare resources to respond.
- Underserved communities and groups have little trust in external partners or the federal government.

Opportunities for Improvement

- Build relationships with trusted community partners, including local and underserved organizations, HBCUs, community colleges, trade schools, local and tribal governments, small businesses, and other federal agencies engaged in community-centric work.
- Provide greater access to DOE staff or create DOE community liaisons.
- Have broader or open topic funding opportunities across DOE offices.
- Create a simple portal including all available funding opportunities, a help desk, and examples of successful applications.
- Increase use of social media for advertising funding opportunities.
- Lengthen period between opportunity announcement and application deadline.
- Work with community partners to tailor funding opportunities to their needs.
- Provide a larger number of small-dollar-value grants.
- Provide dedicated resources to assist first-time applicants in preparing applications.
- Increase diversity of grant reviewers.
- Set aside funding for underrepresented groups and communities.
- Provide incentives for large organizations to partner with small or underrepresented firms.
- Improve and expand workforce development opportunities to promote a pipeline of engineers and technicians capable of supporting contracted work.
- Develop, publicize, and steward JEDI metrics and goals.

DOE sincerely thanks respondents for their thoughtful feedback on the subjects presented here. DOE is committed to using this information to help create a more just and equitable energy innovation ecosystem.

Appendix. Annual Budgets for Activities to Increase Diversity and Representation in Entrepreneurship

Table 1. Annual budgets to increase diversity and representation in entrepreneurship provided by one respondent

Actions	DOE Support	Up to \$50,000	\$50,000–\$150,000	\$150,000–\$250,000	\$250,000–\$500,000	\$500,000+
Venture Capital	Funding, Due Diligence					X
Foundation Grants	Funding					X
Innovation Pilots	Funding, Mentoring					X
Technical School	Funding, Mentoring				X	
College Programs	Funding, Mentoring				X	
Technical Assistance	Funding		X			
Facilitation and Coordination	Funding			X		
Process Improvements	Operations	X				
Procurement	Operations	-				
Best Practices	Operations	-				
Lead by Example	Operations	-				

Table 2. Annual budgets to increase diversity and representation in entrepreneurship provided by another respondent

Activities	\$50,000	\$150,000	\$250,000	\$500,000
<p>Community Engagement, Research and Design (~3–6 months) Define targeted community and/or sector and assemble a team representative of the targeted community to hold workshops and forums with a wide range of stakeholders, including individuals, existing entrepreneurs, aspiring entrepreneurs, community-based organizations, businesses, capital providers, and nongovernmental organizations. The implementer will leverage these conversations to co-design the components of the proposed initiative, and its intended objectives, with partners and community members to ensure (1) local buy-in of the initiative, and (2) the program components effectively meet the needs of underserved groups in the community.</p>				
<p>Ecosystem Coordination & Partnership Building (~12 months) Building upon community engagement activities, the implementer would create a map of the local ecosystem, identifying existing assets and resources, as well as gaps within the ecosystem. Based on these findings, the implementer will (1) convene various stakeholders to educate them about the initiative and outline areas in which they can partner, or benefit from aligning with the initiative’s goals; (2) provide capacity-building services to existing community organizations to expand or adapt their services to better meet the needs of diverse groups; and (3) build or attract stakeholders to fill gaps in the ecosystem, such as creating a new fund to invest in climate-tech startups, if no venture capital is available to targeted entrepreneurs.</p>				

Activities	\$50,000	\$150,000	\$250,000	\$500,000
<p>Entrepreneur Support (Incubator/accelerator/fellowship) Program (~6–9 months)</p> <p>Depending on what programs already exist within the local ecosystem, and what gaps exist, the implementer will launch an appropriately complementary program to help find and equip entrepreneurs from disadvantaged communities. This may be an incubator for early-stage entrepreneurs who would otherwise struggle through the prototyping and development stages in order to qualify to participate in more mainstream entrepreneur support programs; it may also include a fellowship program that provides underrepresented entrepreneurs with comprehensive support (grants, childcare support, mentoring and career counseling) to develop their ideas and solutions in their communities.</p>				
<p>Economy Lab (~9–12 months) To effectively address challenges relating to diversity, equity, and inclusion, initiatives must consider the roots of these inequities, and explore creative ways to reengineer how economies function. For example, with a larger budget, we would propose implementing an economy lab, a research and design lab focused on innovating how we create financial mechanisms. Through an Economy Lab, public and private sector stakeholders are invited to workshops and discussions to help envision and design a new financial mechanism tailored for a specific community or sector, such as a fund for early-stage climate entrepreneurs that allows for social and longer-term financial returns.</p>				

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For more information, visit:

energy.gov/eere/summary-responses-request-information-inclusive-innovation-and-entrepreneurship-climate

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