



# Equitable Demonstration and Deployment Roundtable Report

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## Executive Summary

The National Renewable Energy Laboratory (NREL) hosted the Equitable Demonstration and Deployment Roundtable on August 25, 2021. The roundtable brought together experts in climate and energy justice, demonstration projects, and renewable energy deployment to explore issues that will lead to a greater understanding of the barriers to equity at scale and the role that the U.S. Department of Energy (DOE) can play to reduce and mitigate these barriers. Participants included representatives from national and local organizations across multiple sectors, both public and private. These individuals engaged with DOE staff and national laboratory researchers to identify community-based challenges to energy demonstration and deployment and propose strategies for DOE to address those challenges.

Following an opening session discussing how DOE defines equitable demonstration and deployment and goals for each, attendees provided feedback to DOE by participating in one of five breakout groups related to deployment, then one of five breakout groups related to demonstration. Participants were assigned to breakout groups by expertise and interest prior to these discussions.

The deployment-related breakout groups were:

1. Deployment, Equity, and Meaningful Engagement
2. Designing DOE Technical Assistance for a Just and Clean Energy System
3. Workforce, Training, and a Just Transition
4. Equitable Finance
5. Equitable Transportation and Mobility Deployment.

The demonstration-related breakout groups consisted of:

1. Equity Considerations in Demonstration Projects
2. Community Role in Demonstration Projects
3. An Inclusive Demonstration Ecosystem That Leads to Deployment at Scale
4. Equitable Funding Partnerships
5. Equitable Transportation and Mobility Demonstration.

Through a comprehensive review of the feedback shared across all 10 breakout groups, six overarching challenges were identified. These included:

1. Communities are not provided with sufficient resources to sustain continued engagement in DOE programs, such as wrap-around services or direct compensation.

2. DOE's current centralized organizational structure and the ensuing lack of trust from communities limits their involvement in DOE programming.
3. DOE funding processes are burdensome and inaccessible, representing a structural barrier to equitable participation in DOE programs and opportunities.
4. Engaging with DOE and participating in DOE programs often requires a level of capacity, including time, funding, and expertise, that communities do not possess.
5. Ensuring DOE partnerships are effective, meaningful, and inclusive is a key challenge.
6. DOE's focus, programs, and objectives do not always align with communities' needs.

After identifying challenges in equitable deployment and demonstration, breakout group participants discussed and recommended strategies to address potential inequities. Seven themes emerged across the 10 breakout groups. These included:

1. Explicitly fund community-centric stakeholder engagement and outreach
2. Incorporate innovation and flexibility into funding models and opportunities
3. Prioritize and invest in community-based partnerships to expand engagement past regular actors
4. Facilitate networks and create connections
5. Develop new compensation models and wraparound services
6. Implement equity metrics and communicate outcomes
7. Increase accountability and program alignment with stakeholder needs.

Further discussion of these challenges and specific outcomes from each breakout room are included in the full body of the report.

This roundtable was a component of DOE's efforts to listen to stakeholder needs with the goal of better understanding energy equity issues in underserved and diverse communities across the country. The challenges and solutions identified will inform DOE activities related to reducing barriers to community-based clean energy demonstration and deployment.

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# 1 Introduction

The National Renewable Energy Laboratory (NREL) hosted the Equitable Demonstration and Deployment Roundtable on August 25, 2021. The roundtable brought together more than 80 experts in climate and energy justice, demonstration projects, and renewable energy deployment to explore issues that will lead to greater understanding of the barriers to equity at scale and the role that the U.S. Department of Energy (DOE) can play in reducing and mitigating these barriers. Participants included representatives from national and local organizations across multiple sectors, both public and private. These individuals engaged with DOE and national laboratory researchers to identify community-based challenges to energy demonstration and deployment and propose opportunities for DOE to address those challenges.

The roundtable examined equity considerations for two phases of the energy development process: demonstration and deployment. These two pathways were selected for discussion during the same workshop because they are inextricably linked within the energy ecosystem. Ensuring safe, affordable, and reliable energy deployment is central to an equitable energy transition, and energy demonstration projects are a crucial step of technology movement from laboratory to market to achieve that goal. For the workshop, **demonstrations were discussed as projects that help move technologies and technological systems into practical use at scale.** Because energy systems are complex, the goals of demonstration projects are to ensure systems integration and reduce risk in preparation for deployment. **Deployment was understood to be the successful integration and application of energy technology into the commercially available energy options portfolio.**

In this context, the roundtable's purpose was to explore how large-scale clean energy deployment and demonstration of renewable energy technologies impact diverse and underserved communities across the country so that DOE can take proactive steps to ensure equitable access and benefits to all.

Hosted by NREL, the event began with an introduction from DOE Deputy Assistant Secretary for Renewable Power Alejandro Moreno. Becca Jones-Albertus, DOE Solar Energy Technologies Office Director, served as the DOE moderator for the workshop. There was an introductory panel comprised of two external experts in community-based energy equity issues and a DOE expert in clean energy technical assistance, demonstration, and deployment:

- Chandra Farley, Partnership for Southern Equity
- Majora Carter, Groundswell – Justice40 Initiative
- Elizabeth Doris, Senior Advisor on Energy Justice, DOE Office of Energy Efficiency and Renewable Energy.

Ten breakout groups were divided into two rounds with five groups in each: one focused on deployment, the other on demonstration. The title and a summary of each breakout group are detailed below.

## 1.1 Round 1: Deployment Breakout Groups

**Deployment, Equity, and Meaningful Engagement:** Engaging communities and creating trust will be integral to equitably deploying clean energy at scale. Attendees in this breakout session

discussed how outreach and engagement with disadvantaged communities can be meaningfully integrated into decision-making processes related to clean energy deployment. This discussion also incorporated thoughts on how DOE can have a more significant and positive presence in communities.

**Designing DOE Technical Assistance for a Just and Clean Energy System:** DOE supports numerous technical assistance programs for clean energy deployment. The programs enable engagement with a diverse set of jurisdictions and communities. In this breakout session, attendees discussed what equity should look like in technical assistance programs and considered both potential barriers to designing equitable DOE technical assistance programs and ways to improve existing programs.

**Workforce, Training, and a Just Transition:** A diverse, robust, well-trained workforce is essential to deploying equitable domestic clean energy at scale. Currently, there are historical inequities contributing to the lack of diversity in the clean energy workforce, and many equity considerations could be addressed as the industry scales up. Workforces in other sectors will also need to justly transition from fossil technologies. Attendees in this breakout session shared insights about equity regarding the domestic clean energy workforce and how to improve DOE-supported workforce programs and research.

**Equitable Finance:** Strategic investments in energy efficiency and clean energy technologies can lead to greater energy affordability, security, and resiliency. In this breakout session, participants discussed how strategic investments can incorporate equity and inclusion in their design, implementation, and evaluation methodologies. Participants also discussed how barriers to inclusion can be identified and planned for and how to improve the mechanisms DOE can use for equitable financing.

**Equitable Transportation and Mobility Deployment:** DOE provides information, analysis, and technical expertise that builds partnerships and advances clean, reliable, and affordable transportation solutions. Attendees in this session focused on how best to identify and measure the benefits of investments in transportation deployment through an equity lens, along with how to address transportation and mobility barriers and constraints within underserved communities. Additionally, attendees identified goals that could inform transportation deployment programs to realize more significant benefits.

## 1.2 Round 2: Demonstration Breakout Groups

**Equity Considerations in Demonstration Projects:** Federal funding of demonstration projects can help ensure the commercial viability of clean energy technologies. As with other DOE programs, the Biden administration aims to incorporate energy justice efforts into its demonstration projects. This breakout group considered potential goals and plans for equitable demonstration projects involving emerging technologies at scale. Attendees discussed equitable considerations in different contexts (geographic, technological, demographic, cultural); the role of urban, rural, and remote communities in achieving these equity goals; and how DOE will play a role across this complex landscape.

**Community Role in Demonstration Projects:** DOE has committed to advancing clean energy projects that have a direct and positive impact on disadvantaged communities. To succeed, it will

be important to explore and define best practices for the roles of communities in which projects will be located. Participants in this session discussed ownership structures, collaborative concepts, and models for encouraging community engagement throughout the life cycle of a demonstration project to ensure local values and interests are incorporated into planning, design, deployment, and decommissioning. Participants also discussed the role DOE can play in advancing community roles in demonstration projects.

**An Inclusive Demonstration Ecosystem That Leads to Deployment at Scale:** DOE supports a portfolio of advanced clean energy technology demonstration projects that represent some of the nation's most innovative energy projects. Those demonstrations are among the first of their kind to make their way through permitting, approval, and grid interconnection processes in the United States. They will help address key challenges associated with installing full-scale projects. Attendees of this breakout session discussed how equity and inclusion can be incorporated into the demonstration project process to encourage deployment at scale and guide specific changes to DOE processes that will lead to equity in demonstrations funded by DOE.

**Equitable Funding Partnerships:** This breakout group discussed the barriers to inclusive demonstration funding and partnerships. The discussion included barriers to inclusion particularly in DOE processes, and the status of finance programs and partnership mechanisms that encourage the demonstration of clean energy and energy-efficient technologies. The discussion identified nontraditional partners that could be accessed and explored ways to improve DOE funding mechanisms to promote more equitable partnerships and engagement.

**Equitable Transportation and Mobility Demonstration:** DOE's transportation and mobility demonstration programs support innovative technologies and applications, including automation, connectivity, mobility on demand, and micromobility. This breakout group discussed clean energy mobility solutions and sought to better understand which solutions might benefit underserved communities. Attendees identified and evaluated opportunities for innovative mobility solutions within those communities.

## 2 Roundtable Outcomes

The demonstration and deployment roundtable identified key outcomes across breakout groups and topics. The breakout groups were structured to identify overall challenges and DOE opportunities to provide potential solutions for each case. Each breakout group had a designated notetaker; outcomes were pulled from notes and breakout group transcripts. Challenges and opportunities were identified across the breakout groups, condensed into more prominent themes, and prioritized based on how many times participants made the same or similar comments. The content of participants' comments was not substantially altered while generating the analysis and summarized outcomes. This section will identify both summarized challenges and opportunities.

The outcomes identified in this report complement and reinforce the [Inclusive Innovation and Entrepreneurship Roundtable](#) findings. The Equitable Demonstration and Deployment Roundtable topics built upon the first roundtable's outcomes and identified specific equity applications to energy development deployment and demonstration phases. As participant feedback was collected, it became clear that the challenges and opportunities within breakout groups and across deployment and demonstration were very similar. Key outcomes were not filtered by feasibility for DOE, but the authors recognize that legal and organizational challenges complicate operationalizing some roundtable suggestions.

### 2.1 Overall Challenges Across Demonstration and Deployment

Each breakout group at the roundtable was asked to identify overall challenges to equitable demonstration and deployment as well as opportunities for DOE to advance solutions. After reviewing participant input, six core challenge themes were identified:

- **Wraparound services and direct compensation are necessary for equitable demonstration and deployment:** Equitable programming requires ongoing community engagement and participation, but such engagement requires time and resources that are sparse within many communities. Participants indicated that the lack of “wraparound services”—additional supportive services like childcare or transportation that are needed to participate in a program or funding opportunity—creates barriers to communities engaging in deploying and demonstrating renewable energy technologies.
- **Communities lack trust in DOE:** Participants in the deployment and demonstration breakout groups commonly cited that DOE's centralized organizational structure made communities feel like DOE was inaccessible and perpetuated a lack of trust within communities.
- **DOE funding processes are burdensome and inaccessible:** The Inclusive Innovation and Entrepreneurship Roundtable findings indicated that DOE funding processes were burdensome and inaccessible for communities. Although breakout groups were not primarily focused on those topics, DOE funding processes were brought up in every breakout group. The discussions reinforce the prevalence of structural barriers to equitable funding for stakeholders from the Inclusive Innovation and Entrepreneurship Roundtable and other recent DOE engagement efforts. The breakout groups highlighted several key challenges, including but not limited to barriers to regranting federal dollars,

Funding Opportunity Announcement (FOA) complexity and burden, and awareness of funding opportunities.

- **Communities lack the necessary capacity to provide input and utilize DOE opportunities:** Comments around the lack of community capacity – the internal resources, expertise, and time needed to successfully engage in DOE programs – were raised across breakout groups. Capacity was central to the workforce and technical assistance breakout groups and was mentioned in the other groups.
- **Creating effective partnerships is challenging:** Effective and inclusive partnering were mentioned often across discussions. Key challenges included identifying the right partners, ensuring meaningful and early engagement, and understanding that partnerships vary across communities and contexts.
- **Programs do not align with community need:** The misalignment of community needs and current programs was identified across participants at the roundtable. Participants indicated that many DOE programs are not designed for communities and that DOE objectives can conflict with community needs.

## 2.2 DOE Opportunities in Demonstration and Deployment

A key objective was to determine where DOE could play an effective role in advancing equitable demonstration and deployment. Participants identified the areas where DOE can improve and engage:

- **Explicitly fund community-centric stakeholder engagement and outreach:** One of the most straightforward opportunities for DOE is the various ways to provide more direct and dedicated funding focused on engagement with stakeholders to ensure all projects incorporate community engagement.
- **Incorporate innovation and flexibility into funding models and funding opportunities:** Similar to the funding challenges identified by participants, funding model opportunities and solutions were identified across breakout groups.
- **Prioritize and invest in community-based partnerships, expanding engagement past regular actors:** Participants identified the need to expand partnering past the stakeholders with which DOE traditionally engages. This roundtable highlights the challenges of engaging communities directly in formats that DOE has historically used for outreach.
- **Facilitate networks and create connections:** Participants suggested that DOE can act as intermediary, connector, and convener. Connecting peers and regional organizations to communities and energy expertise is a crucial role DOE can play in advancing a more equitable energy system. Peer and organizational connections are important pathways to building community capacity and trust.
- **Develop new compensation models and wraparound services:** Participants urged DOE to develop appropriate compensation models with input from communities. Compensation can range from direct payment for input or time to wraparound services.

- **Implement equity metrics and communicate outcomes:** Many of the participants were focused on metrics and demonstrating impact. These are important considerations for DOE, and participants volunteered key opportunity areas for DOE focus and investment.
- **Increase accountability and program alignment with stakeholder needs:** The issues of accountability and program alignment were important to participants and linked across breakout sessions. Participants indicated that it should be a priority for DOE to address the past problems of trust through accountability measures and strive to align DOE programs with community needs.

## 2.3 Distinct Outcomes for Demonstration and Deployment Breakout Groups

Outcomes, both unique and consistent, across the topics of demonstration and deployment are noted in the following breakout group narratives. Given the broad representation of external participants across organizations and the lack of individual community representation (such as through residents and local community organizers), higher level (less granular) perspectives are represented in these findings.

### 2.3.1 Deployment Breakout Group Outcomes

#### 2.3.1.1 Deployment Breakout Group 1: Deployment, Equity, and Meaningful Engagement

**Key Challenges:** The first challenge highlighted by participants was the lack of compensation for community members for providing input to DOE via forums, surveys, or workshops. It was noted and reiterated by multiple members in the group that community-based stakeholder participation is often a challenge when working with DOE. In addition, those local stakeholders who engage in DOE forums, surveys, and workshops are often asked to participate multiple times and can become overburdened. As new energy technologies are deployed, DOE must reexamine its current models of outreach and engagement (public forums, social media, webinars, and so on) and move forward in a way that does not exclude disadvantaged residents of the most impacted communities. It may be particularly important to find ways to incentivize engagement for underserved communities through some form of compensation.

The discussion ended on the theme of engagement in deployment decision-making throughout the entire process. Three stages were identified as part of this challenge. The first was input access, or ensuring the community is involved from the beginning, not only after decisions have been made. The second was creating active and meaningful partnerships between communities, DOE, and DOE’s partners. Communities do not want to be considered a study; they want to be acknowledged and valued. The third was delivering on promises. Ensuring the delivery and successful longevity of deployed energy projects is critical. Those projects must benefit the community, and community engagement throughout the life cycle should be prioritized.

**Opportunities:** Participant input regarding DOE opportunities for meaningful engagement was dominated by the need to prioritize community-based relationships and expand diverse networks—or, as one participant put it, “cast a wide net.” Dominant themes included developing



new compensation models that incorporated strategies to dedicate funding for stakeholder engagement as part of future FOAs and subsequent project budgets. As a response to the challenge of community burnout discussed in the early part of this session, participants said DOE has an opportunity to work with local organizations in the early stages to incorporate a collaborative approach that avoids tokenism. Tokenism can sometimes result from limited community engagement throughout the design, planning, and deployment processes.

### *2.3.1.2 Deployment Breakout Group 2: Designing DOE Technical Assistance for a Just and Clean Energy System and Deployment*

**Key Challenges:** The first challenge mentioned by participants in this breakout group was the need for inclusive technical assistance and deployment models. It was stated that most of the technical assistance models historically used do not work for planning equitable engagement in deployment. Specifically, most program models do not account for initial capacity or capacity building at multiple levels, including community/neighborhood, local/state, and other geographically distinct areas. The idea of capacity was a central theme across the entire discussion, as were awareness of and access to technical assistance programs. Participants noted that finding and applying for technical assistance programs could be challenging, particularly for underserved or low-income communities. DOE is a highly centralized organization; without knowledgeable support from outside partners, it can be hard to determine who to talk to or how to access the information needed to complete an application.

The second area of concern with technical assistance-associated deployment was the lack of flexibility in reporting or tracking metrics. Because communities are unique and may start at different points along an energy deployment pathway or show progress differently, standardized DOE reporting criteria can pose a problem.

The final part of this discussion pointed out the need to align technical assistance with financial assistance. The need for funding at different points along the deployment process was noted as an impediment to progress. One comment noted, “Limited resources are often encountered, and there is never enough funding for the stakeholder piece of projects.” Identifying and connecting with the right partners to ensure equity takes time and is resource intensive.

**Opportunities:** Most of the DOE opportunities in this session were direct responses to the identified challenges. Input focused on enhancing the sustainability of and flexibility within technical assistance programs. One suggestion was to implement repeatable FOAs, awards, and challenges to allow for easier reapplication if unsuccessful in initial submissions. Communities could learn from DOE feedback and previous years’ submissions to improve their process and planning. As with other breakout group findings, pairing technical and financial assistance was encouraged. This was seen as a way to build capacity within communities at multiple levels.

To address the key challenge of technical assistance program awareness and access, participants encouraged exploring ways to amplify DOE funding opportunities and streamline the application process. Regular program reviews were also recommended to ensure the relevance of required processes and criteria. Finally, participants suggested expanding DOE’s footprint through establishing direct engagement at a local and regional level.

### *2.3.1.3 Deployment Breakout Group 3: Workforce, Training, and a Just Transition*

**Key Challenges:** When discussing the workforce and training challenges associated with deployment, participants noted the lack of access to and diversity of data to help effectively target and train local workforces. Competition and limits on what workers can be paid when federal funds are involved was also a concern. One example provided was limitations to labor costs associated with weatherization programs.

This group also brought up the difficulties disadvantaged community members often have when trying to participate in training. There are usually no wraparound services such as transportation or childcare offered to facilitate and support those most in need. This type of misalignment of program/policy and need occurs at many levels and across different types of communities.

Historically, DOE has prioritized “shovel-ready” energy projects rather than longer-term capacity building and engagement. This “shovel-ready” project approach has led to a lack of local expertise and general buy-in at the community level, leading to gaps in continuity when the project developers leave. It was recommended that DOE find ways to support a workforce that can enable longevity.

**Opportunities:** To enable better outcomes for energy project deployment that include longer-term opportunities for community-based workforces, participants recommended redesigning DOE funding strategies. Reducing limits to compensation, funding wraparound services (such as childcare and transportation) and providing longer-term investment in communities were highlighted. They suggested that a collaborative oversight model with more partner-based engagement would be helpful. If this work could be incorporated into the early stages of the deployment project process, community input, through co-design, would help address some workforce and training challenges.

Two additional recommendations for DOE were to engage small businesses and partner with nontraditional academic institutions such as community colleges and vocational schools. Including those types of entities within the proposal or project development phases could create pipelines to support a long-term, locally based energy workforce.

### *2.3.1.4 Deployment Breakout Group 4: Equitable Finance for Deployment*

**Key Challenges:** A key takeaway of the discussion on equitable finance for energy deployment was that DOE’s role in finance is unclear. Many communities are not aware that financing opportunities exist for community-based projects. It was also stated that it is difficult to access financing information and resources.

Another challenge participants mentioned was identifying community partners. It was unclear how DOE reaches underrepresented groups and what role partnering can play in renewable energy financing for communities. The conversation also noted that if DOE did create programs and seek partners to advance equitable financing, clear metrics would be needed to track the participation and success of disadvantaged groups. This outcome mirrored other partnering discussions across breakout groups.

**Opportunities:** This breakout group identified several DOE opportunities to advance equitable financing of renewable energy deployment in disadvantaged and underserved communities. First,



conversation emphasized the need to create dissemination and amplification plans that provide information and resources to reach and benefit disadvantaged communities.

The second specific recommendation participants identified was developing frameworks to advance finance metrics and financing accountability. They emphasized the need to increase access to finance and to find ways to measure progress to ensure accountability of DOE investments.

Participants also identified opportunities that have been consistently highlighted throughout the groups. These included providing wraparound services to ensure that participants can access DOE resources and programs along with providing explicit and expanded funding for stakeholder engagement in any DOE funding opportunity.

### *2.3.1.5 Deployment Breakout Group 5: Equitable Transportation and Mobility Deployment*

**Key Challenges:** The equitable transportation and mobility deployment breakout session discussed the diverse considerations required to promote just transportation technologies and systems. The first challenge identified was limited public mobility options. Participants highlighted that in many areas, feasible public mobility options are inadequate. In rural areas, there are limited public mobility and passenger vehicle solutions like ride share services.

The second part of the discussion focused on the equity considerations of transportation electrification. Participants noted that electrification should not be the only focus and emphasized that some, but not all, equity mobility barriers can be solved with electrification. For example, the cost to transition to electric vehicles can be prohibitive for many communities.

Finally, this breakout group highlighted that operational partnering compliance is difficult. The compliance requirements of using federal funds as a partner in federal grants are challenging, which limits perspectives and reduces community access. Participants highlighted that the cost match is onerous.

**Opportunities:** The mobility breakout group focused on operational opportunities for DOE to change programs and processes to better serve communities. Operational suggestions included prioritizing innovative solutions to meeting DOE's cost-share requirements, addressing structural inequities of FOAs, and providing compensation to communities for engagement when they participate in DOE programs and share perspectives.

Participants also highlighted that a key opportunity for DOE is to focus on relationship building and on-the-ground engagement among mobility stakeholders. Participants highlighted that engagement challenges will persist until people who understand the needs on the ground have access to technology providers.

This breakout group also discussed the opportunity to fund research that serves community needs. Participants focused on the idea that DOE and its laboratories are "research ivory towers" which limit external input, and that community perspectives and priorities should drive research questions and dollars.

Finally, the breakout group participants discussed the opportunity to develop flexible metrics to serve the needs of communities. They highlighted that DOE should strive to measure what matters to communities.

## **2.3.2 Demonstration Breakout Group Summaries**

### **2.3.2.1 Demonstration Breakout Group 1: Equity Considerations in Demonstration Projects**

**Key Challenges:** The first challenge the participants identified was the conflicting goals and processes of communities compared to those of DOE. In their comments, participants indicated that their perception of DOE as being focused on new technologies and efficiency did not align with a community-centric approach.

Community-centric approaches are particularly important in the context of demonstration, given the prevalence of emerging technologies with unknown impacts. Participants emphasized that because it is difficult to understand the potential long-term impacts of emerging technologies, DOE should engage in early, frequent, and transparent communication and collaboration with communities.

Participants indicated that the uncertainty of demonstration outcomes necessitates maintaining community autonomy. They emphasized that when DOE engages with communities, it should encourage community leadership.

Another major theme of this breakout was the need for meaningful long-term community engagement. Community engagement does not necessarily lend itself well to short-term outcomes and needs to be done consistently over time.

**Opportunities:** The opportunities discussed ranged from specific to general. The first recommendation was to focus on building trust through incremental steps. Although trust was mentioned across many breakout groups, this recommendation was distinct in its focus on investing in small projects to build trust over time rather than investing in one large demonstration effort.

A more focused recommendation included redesigning cost share. This discussion recognized that certain institutional constraints bind DOE. However, in one example, the Office of Indian Energy Policy and Programs adjusted what could be considered cost share and allowed equipment costs to count toward the requirement, which lessened the burden.

The lack of clarity around what demonstration projects entailed persisted across groups. The participants indicated that one way DOE could provide support and value to communities was to develop pathways that help communities meet goals. DOE can collaborate with communities to determine their paths and goals within their specific contexts and constraints. In turn, those pathways can help communities determine the best ways to interact with a demonstration project. Efforts to ensure funding sustainability were also discussed, although the group recognized DOE's constraints. Participants highlighted the importance of stability and of allocating funding regularly. Strategies to insulate funding from political cycles were encouraged.

The next opportunity identified by the breakout group was that the DOE should focus on communication and education at the front end of demonstration projects. Effective communication and education for demonstration projects are essential for community buy-in. Establishing trust in communities by amplifying their success is also important and can have large regional impacts.

### *2.3.2.2 Demonstration Breakout Group 2: Inclusive Demonstration Ecosystem That Leads to Deployment at Scale*

**Key Challenges:** One of the major challenges discussed in this breakout group was how to conceptualize equity throughout the demonstration process, or across the value chain. Promoting equity across these processes is challenging. For example, the construction process was a central concern. Participants noted that the impacts of construction for demonstration projects and potential mitigation strategies are not well understood.

Early engagement with the whole community is essential at the start of the demonstration process but is recognized as a consistent challenge. There are few resources for engaging with stakeholders across the value chain. Community-based organizations act as points of contact and provide the networks, processes, and relationship building that ensure demonstrations are done with community input. However, some underrepresented groups do not have a clear representative to speak for them, which complicates effective community engagement. Participants noted that further investment in stakeholder engagement is needed as technologies are scaled.

**Opportunities:** Many of the opportunities identified in this session mirrored the challenges. The first opportunity the participants discussed was designing an overarching framework for integrating equity across the demonstration value chain as well as building equity into FOAs.

In demonstration projects, participants noted that a key role DOE could play is bridging the gap between industry and communities. The role of a connector was highlighted as an essential function of DOE in the demonstration space.

Capacity building was a common theme across both the demonstration and deployment discussions. This group focused on workforce capacity building. They advised explicitly funding workforce capacity building for each community engaged with or in proximity to a demonstration project. They highlighted that investing in workforce capacity building at the local level (for the initial project and operation and maintenance) will pay dividends for the overall success of larger decarbonization efforts.

The group also identified several operational changes they hoped to see from DOE—echoed in other conversations—like building in funding sustainability, which can serve the long-term interests of communities, and ensuring FOAs are written and reviewed by diverse and representative groups. Finally, they noted that outreach to disseminate requests for information should be dispersed to stakeholders who are not usually involved.

### *2.3.2.3 Demonstration Breakout Group 3: Community Role in Demonstration Projects*

**Key Challenges:** This breakout group focused on identifying how communities engage in the demonstration process and the challenges they face in doing so. Community access to

demonstration projects was the first challenge identified and was central to the outcomes of this breakout group. Participants provided diverse examples, including cost-share requirements being a barrier to hosting a demonstration project. Overall, participants identified that communities are often skeptical of demonstration projects and giving feedback, as they feel excluded from meaningful decision-making and that their perspectives are not valued.

The transfer of technical expertise was mentioned in both deployment and demonstration breakout groups, but this discussion highlighted that it is particularly important for demonstration projects. Long-term project success depends on transferring technical expertise to the local community.

Another challenge identified through this conversation was a lack of regular engagement from DOE or other institutions. Participants emphasized that regular meetings are needed to develop trust and relationships, which are particularly important in communities that are continually asked to engage in or host demonstration projects. Building on this discussion, participants added that a key element of consistent engagement is showing positive impact. Demonstration projects need to show progress and positive impacts for communities.

Finally, the breakout group indicated several other challenges, including establishing equitable processes and outcomes and the role communities should play in the defining processes and outcomes. As stated in other breakout groups, baseline data on communities and the impacts of demonstration projects are needed to address these challenges.

**Opportunities:** Participants highlighted several opportunities to better define the role communities should play in demonstration projects through community engagement. One suggestion was to incorporate community listening opportunities, emphasizing that it is important to focusing on listening and avoid giving lectures. Participants said that listening sessions enable institutions to understand community values, which can vary dramatically across communities. Another key opportunity identified by the participants was using stakeholder feedback to inform program and project design.

Communication with communities was another theme of this conversation, particularly the communicating project impacts (both positive and negative) and project outcomes, which affect the longevity of partnerships and building trust.

Participants developed several specific recommendations for DOE in this breakout session. To successfully advance the community role in demonstration projects, participants suggested DOE create an Office of Engagement. Another key opportunity identified by the participants was using stakeholder feedback to inform program and project design. In addition, participants highlighted that providing some type of compensation or accommodation (wraparound services) demonstrates that DOE values the time and input of community members. This recommendation was consistent across many of the breakout groups.

#### *2.3.2.4 Demonstration Breakout Group 4: Equitable Funding Partnerships*

**Key Challenges:** Participants identified that partnerships need to be understood and executed in context. Further, they emphasized that the approach to demonstration projects differs among

communities and community contexts—a one-size-fits-all approach will not serve all communities.

Building on the challenge of partnering in context, participants noted that identifying the right partners is a key challenge because it requires reaching past established partnerships and normal players in the energy research sector. This type of partnering is time- and resource-intensive.

The discussion around equitable partnership in demonstration projects focused not only on with whom DOE or its awardee partners, but also how partnerships are executed. Several participants discussed the importance and challenges of co-design with communities. Participants discussed the challenges of establishing meaningful ways to achieve co-design, which requires early engagement from industry as well as the capacity for communities to participate.

The breakout group also discussed the operational challenges of partnering in demonstration projects. A particular focus was the challenge of federally-sourced demonstration funding, which can present administrative barriers. For example, regrating or subcontracting federal dollars is currently extremely difficult, if not impossible.

**Opportunities:** After discussing the challenges with respect to partnering in demonstration projects, participants identified potential opportunities for DOE to improve current practices. The group started by discussing ways to promote better partnering practices and identified that an initial step should be DOE setting partnering goals for the agency. This discussion highlighted that setting a goal around the percentage of funds that should be spent on communities would be an effective motivator for change, similar to a Justice40 goal.

Building from the challenges conversation, one of the main recommendations for DOE was to work on expanding partnerships. In the context of demonstration, partners may need to be different than more general deployment partners. Participants highlighted that demonstration work should prioritize collaboration with nontraditional partners (e.g., non-Research 1/Tier 1 universities<sup>1</sup>). Another identified opportunity was ensuring equity across DOE programs. Participants emphasized that it is important to weave equity into new and current programs.

The discussion also concluded that DOE needs to adopt a theory of change to describe how and why change will happen, focused on communities, and extended to all partnering and operational decisions. The regrating of federal funds was used as an example; although participants recognized that DOE must adhere to legal requirements, they felt that processes should focus on enabling broader participation.

Finally, participants highlighted that it is important to continually seek expert advice on partnering with communities. They recommended establishing an external advisory group for equity topics and specifically for partnerships.

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<sup>1</sup> Research 1/Tier 1 Universities refer to universities renowned for world-class research, ability to win grant funding, and overall academic excellence including the highest levels of innovation, creativity, and scholarship. These institutions disproportionately wind federal grants and partner with federal institutions like the national lab.

### 2.3.2.5 *Demonstration Breakout Group 5: Equitable Transportation and Mobility Demonstration:*

**Key Challenges:** Participants in this session identified measurement, operational, and practical challenges to equitable transportation and mobility demonstration. The discussion on the first identified that the challenge of defining metrics was multifaceted, but key ideas emerged: there are fundamental difficulties in measuring mobility demonstration impact, and metrics will differ across rural and urban landscapes.

Second, participants emphasized that transportation demonstrations, particularly those funded by DOE, focus more on vehicles than on micromobility options. For example, participants felt that more research dollars should be allocated to research on public transit or e-bikes and e-scooters that can serve many populations. Participants highlighted this as an example of how DOE priorities do not align with the needs of disadvantaged communities.

A key component of the challenges discussion also focused on the issues related to demonstrating an emerging technology in a disadvantaged community. Impacts are not well-understood, and there are potential long-term harms that could negatively impact the host communities. The group also discussed how the energy transition needs not only technology innovation but also innovation in ownership and business models. They emphasized that more creative and equitable models are possible.

Finally, participants identified similar operational barriers to other breakout groups, including but not limited to FOA application complexity, the time frame to effectively engage partners, and the negative impacts of cost-share requirements.

**Opportunities:** This breakout group identified several opportunities for DOE to improve its relationships with communities. Participants suggested investing in developing a suite of metrics applicable to both rural and urban projects. The breakout group also focused on the need to fund research that is useful to practitioners and driven by community needs. In this context, research should focus on the human impacts of transportation.

Like other breakout groups, much of the conversation focused on opportunities to improve DOE operations. Specific suggestions included a focus on transparency in DOE decision-making, increasing flexibility across DOE funding requirements, and innovations for making FOAs more accessible.

## 2.4 Limitations of Roundtable Outcomes

The roundtable breakout groups provided valuable and useful information for DOE to consider in its planning and program development. However, there are limitations to the information gathered and to the roundtable format. First, this was an early-stage engagement opportunity that focused on high-level challenges. This report's authors suggest building from this roundtable by deliberately engaging a more focused stakeholder group. This will require more targeted outreach and long-term engagement with communities and stakeholders.

The second key limitation of the roundtable approach is its inaccessibility to community members. Participants in our roundtable were primarily representatives from nongovernmental organizations, research organizations, and the government. Other formats of engagement are

needed to appropriately and directly engage communities. Further, outside stakeholders may not have a full working knowledge of the DOE process and legal obligations. This report includes all participant comments in the outcomes, even if some were related to processes over which DOE has no control, such as cost-share.

## 3 Current Gaps and Next Steps

### 3.1 Current Gaps

Both this and the Inclusive Innovation and Entrepreneurship Roundtable have gathered primary data regarding the challenges communities and regional organizations see in renewable energy development. Although these roundtables gathered valuable firsthand information, there are gaps and needed information remaining. In the roundtables, participants were only aware of and able to give feedback on FOAs and prizes as forms of funding and collaboration with DOE. A more detailed method of information gathering is needed to complement these findings. Further, it is important to note that there is a certain threshold to the information that is possible to obtain from open-invitation and virtual workshop formats.

### 3.2 Next Steps

The findings from this workshop can help DOE to define strategies for achieving equitable demonstration and deployment. More targeted discussions are needed to determine *how* DOE will achieve this goal. Specific areas for priority engagement based on the findings of this workshop include:

- How do we enable community compensation and wraparound services?
- How do we ensure communities are engaged at the earliest project stages?
- How do we reach new underserved partners?



## 4 Conclusion

To meet the Biden administration's greenhouse gas reduction and net-zero carbon economy goals, DOE must expand its efforts beyond renewable energy research and development and into demonstration and deployment. However, there are many unknowns, including potentially harmful outcomes, associated with demonstrating and deploying cutting-edge technologies. In efforts to preemptively discover and address potentially detrimental impacts of new technologies as well as address the administration's Justice40 goals, DOE has undertaken several activities to better understand and address barriers to equity in the clean energy ecosystem. This roundtable explored the equity implications of large-scale deployment and demonstration of renewable energy technologies by facilitating discussion between relevant experts in 10 smaller breakout group discussions.

Following a comprehensive review of the feedback across all 10 breakout sessions, six overarching challenges were identified. These included:

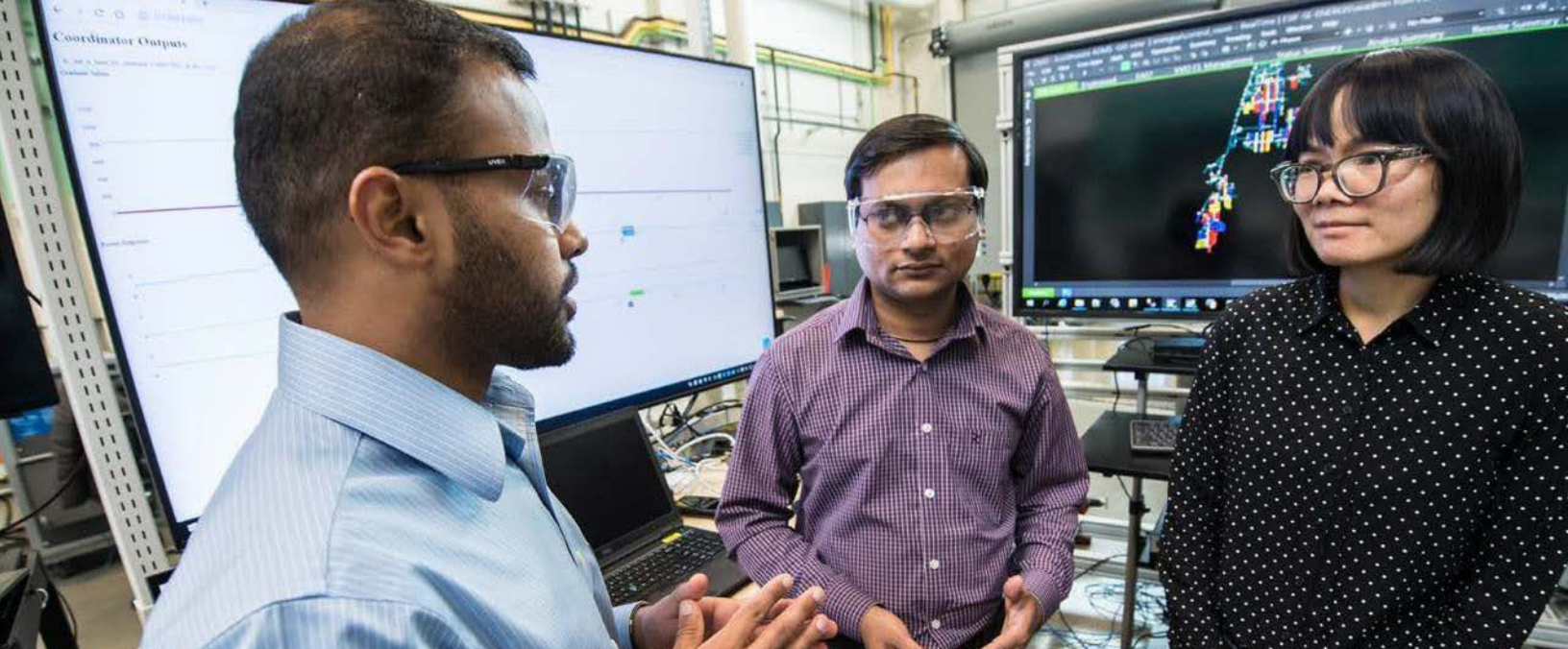
1. Communities are not provided resources, like wrap-around services or direct compensation, to sustain continued engagement in DOE programs.
2. DOE's current centralized organizational structure and the ensuing lack of trust from communities limits their involvement in DOE programming.
3. DOE funding processes are burdensome and inaccessible, representing a structural barrier to equitable participation in DOE programs and opportunities.
4. Engaging with DOE and participating in DOE programs often requires a level of capacity, including time, funding, and expertise, that communities do not possess.
5. Ensuring DOE partnerships are effective, meaningful, and inclusive is a key challenge.
6. DOE's focus, programs, and objectives do not always align with communities' needs

After identifying challenges in equitable deployment and demonstration, breakout group participants discussed and recommended strategies to address potential inequities. Seven themes emerged across the 10 breakout groups. These included:

1. Explicitly fund community-centric stakeholder engagement and outreach.
2. Incorporate innovation and flexibility into funding models and funding opportunities.
3. Prioritize and invest in community-based partnerships to expand engagement past regular actors.
4. Facilitate networks and create connections.
5. Develop new compensation models and wraparound services.
6. Implement equity metrics and communicate outcomes.
7. Increase accountability and program alignment with stakeholder needs.

The outcomes of this roundtable can help inform DOE and other renewable energy deployment and demonstration stakeholders about the equity considerations of which they should be aware when designing programs and engagement strategies. Further, the information gathered here will help guide DOE and other stakeholders in taking proactive steps to ensure equitable access and benefits to all communities in programming and funding opportunities. While the roundtable focused on equitable demonstration and deployment, many of the identified challenges and potential solutions are broadly applicable; beyond specific applications to DOE or its national labs, the outcomes of this roundtable can broadly help inform a more just renewable energy transition for all communities.

# Appendix A. Agenda



# Equitable Deployment and Demonstration Roundtable

August 25, 2021

11 a.m.–4 p.m. Eastern Time

Historically, U.S. Department of Energy (DOE) demonstration projects have focused on reducing uncertainty for new technologies to decrease the time during which a technology moves from conceptual design through development and prototype to widespread deployment and adoption. **Large-scale deployment and demonstration of clean energy technologies will impact diverse communities across the country, and DOE is taking proactive steps to ensure deployment and demonstration are equitable across technologies, communities, and contexts.** This roundtable brings together experts in climate and energy justice, demonstration projects, and clean energy deployment to understand the barriers to equity at scale and the role that DOE can play in reducing and mitigating them. To learn more about this event, please visit: <https://www.nrel.gov/water/equitable-deployment-and-demonstration-roundtable.html>

## 11 a.m.–12 p.m. Welcome and Panel

Welcome: Bill Kindred, Diversity, Equity, and Inclusion Manager, National Renewable Energy Laboratory (NREL) (Event Facilitator)

Introduction: Alejandro Moreno, Deputy Assistant Secretary for Renewable Power, U.S. Department of Energy

### Opening Discussion

Panelists will discuss how DOE defines equitable demonstration and deployment and the goals for each.

- What roles do urban, rural, and remote communities play in those goals, and how can equity be achieved across such a complex landscape?
- What are the goals and plans for equitable deployment and demonstration projects for emerging

technologies at scale?

### Panelists

Chandra Farley: Partnership for Southern Equity

Majora Carter: Justice 40 Initiative

Liz Doris: Energy Justice, EERE

Moderator, Becca Jones Albertus: DOE Solar Energy Technology Office

## 12 p.m.– 3:30 p.m. Workshop Breakout Discussions

All breakout discussions will occur simultaneously, but there will be two rounds of breakouts so that individuals can participate in multiple sessions.

**12 p.m.–1 p.m.:** Round 1 Deployment Breakout Discussion

**1 p.m.–1:15 p.m.:** Transition/Break

**1:15 p.m.–1:45 p.m.:** Session 1 Report Out

**1:45 p.m.–2:45 p.m.:** Round 2 Demonstration Breakout Discussion

**2:45 p.m.–2:55 p.m.:** Transition/Break

**2:55 p.m.–3:30 p.m.:** Session 2 Report out

### Round 1 Deployment Breakout Groups

- 1. Deployment, Equity, and Meaningful Community Engagement:** Engaging communities and creating trust will be integral to equitably deploying clean energy at scale. Attendees in this breakout session will discuss how outreach and engagement with disadvantaged communities can be meaningfully integrated in decision-making processes related to clean energy deployment. This discussion will also integrate thoughts on how DOE can have a larger and positive presence in communities.  
Breakout Room Facilitator: Eric Lockhart
- 2. Designing DOE Technical Assistance for a Just and Clean Energy System:** DOE supports numerous technical assistance programs for clean energy deployment. These programs span engagement with a diverse set of jurisdictions and communities. This breakout session offers an opportunity for attendees to discuss what equity should look like in technical assistance programs, as well as potential barriers to equitable DOE technical assistance programs and ways to improve existing programs.  
Breakout Room Facilitator: Molly Greer
- 3. Workforce, Training, and a Just Transition:** A diverse, robust, well-trained workforce is essential to deploying equitable domestic clean energy at scale. Currently, there are historical inequities in the clean energy workforce, and many equity considerations must be addressed as the industry scales up. Other sectors' workforces will also need to transition from fossil technologies justly. Attendees in this breakout session will share insights about equity and the domestic clean energy workforce as well as how to improve DOE-supported workforce programs and research.  
Breakout Room Facilitator: Chloe Constant
- 4. Equitable Finance:** Strategic investments in energy efficiency and clean energy technologies can

create greater energy affordability, security, and resiliency. In this breakout session, participants will discuss how these strategic investments can incorporate equity and inclusion in their design, implementation, and evaluation methodologies. Those attending will also discuss how barriers to inclusion can be identified and planned for as well as how to improve mechanisms DOE can use to increase equitable financing.

Breakout Room Facilitator: Maria Curry-Nkansah

5. **Equitable Transportation and Mobility Deployment:** DOE provides information, analysis, and technical expertise that builds partnerships and advances clean, reliable, and affordable transportation solutions. As a Justice 40 pilot project, the Technology Integration Program will determine measurements to ensure 40% of DOE investments benefit overburdened and underserved communities. Attendees in this session will focus on how best to identify and measure the benefits of investments in transportation deployment through an equity lens and how to address transportation and mobility barriers and constraints within these communities. Attendees will identify benefits that could inform transportation deployment programs to realize greater benefits.

Breakout Room Facilitator: Alana Wilson

## Round 2 Demonstration Breakout Groups

1. **Equity Considerations in Demonstration Projects:** Federal funding of demonstration projects can help ensure the commercial viability of clean energy technologies. As with other DOE programs, the Biden administration aims to incorporate energy justice efforts into its demonstration projects. This group will consider potential goals and plans for equitable demonstration projects involving emerging technologies at scale. Attendees of this breakout session will discuss equitable considerations in different contexts (geographic, technological, demographic, cultural) as well as the role of urban, rural, and remote communities in achieving these equity goals and how DOE will play a role across this complex landscape.

Breakout Room Facilitator: Eric Lockhart

2. **Community Role in Demonstration Projects:** DOE has committed to advancing clean energy projects that have a direct and positive impact on disadvantaged communities. To succeed, it will be important to explore and define best practices pertaining to the role of communities in which projects will be located. Participants in this session will discuss ownership structures, collaborative concepts, and models for encouraging community engagement throughout the life cycle of a demonstration project to ensure local values and interests are incorporated into planning, design, deployment, and decommissioning. Participants will also discuss what part DOE can play in advancing community roles in demonstration projects.

Breakout Room Facilitator: Molly Greer

3. **An Inclusive Demonstration Ecosystem That Leads to Deployment at Scale:** DOE supports a portfolio of advanced clean energy technology demonstration projects that represent some of the nation's most innovative energy projects. These demonstrations are among the first of their kind to make their way through permitting, approval, and grid interconnection processes in the United States, and they will help address key challenges associated with installing full-scale projects. Attendees of this breakout session will discuss how equity and inclusion can be incorporated into the demonstration project process to encourage deployment at scale and what specific changes to DOE processes will lead to equity in demonstrations funded by DOE.

Breakout Room Facilitator: Maria Curry-Nkansah

4. **Equitable Funding Partnerships:** This breakout group will discuss the barriers to inclusive



demonstration funding and partnerships. The discussion will include which barriers to inclusion, particularly in DOE processes, can be identified and mitigated for as well as the status of finance programs and partnership mechanisms that encourage demonstration of clean energy and energy-efficient technologies. The discussion will draw out nontraditional partners that could be accessed and ways to improve DOE funding mechanisms to encourage more equitable partnerships and engagement.

5. **Equitable Transportation and Mobility Demonstration:** DOE's transportation and mobility demonstration programs support innovative mobility technologies and applications, including automation, connectivity, mobility on demand, and micromobility. This breakout group will discuss clean energy mobility solutions and seek to better understand which solutions might best benefit underserved communities and how this can be demonstrated. Attendees will identify and evaluate opportunities for innovative mobility solutions within these communities.

Breakout Room Facilitator: Alana Wilson

### 3:30 p.m.–4 p.m. Closing Remarks

#### Closing Remarks



## Appendix B. Workshop Pre-Readers

### Resources for Equitable Deployment and Demonstration Projects

Tables B-1 through B-3 provide links to resources to support discussions on equity considerations around demonstration and deployment of renewable energy technologies at scale as well as the U.S. Department of Energy’s (DOE’s) role in addressing those considerations. Each resource includes a brief description and a link to the resource.

**Table B-1. Deployment and Demonstration Resources**

Title and Description	Link
<p><b><i>Guide to Partnering With DOE’s National Laboratories</i></b>            This guide describes eight partnering mechanisms for collaboration with DOE’s national laboratories: Cooperative Research and Development Agreement (CRADA), Strategic Partnership Project (SPP), Agreements for Commercializing Technology (ACT), Technical Assistance (TA) Agreement, User Agreement, Technology Licensing Agreement, Material Transfer Agreement (MTA), and Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR).</p>	<p><a href="https://www.inl.gov/wp-content/uploads/2016/05/Revised-Guide-Partnering-with-National-Labs-Final.pdf">https://www.inl.gov/wp-content/uploads/2016/05/Revised-Guide-Partnering-with-National-Labs-Final.pdf</a></p>
<p><b><i>DOE Office of Energy Efficiency and Renewable Energy’s Energy Transitions Initiative</i></b>            Collaborating with communities to understand their energy and infrastructure challenges, goals, and opportunities, DOE’s Energy Transitions Initiative Partnership Project’s broad coalition empowers remote, island, and islanded communities to proactively identify and implement strategic, holistic energy solutions tailored to their needs.</p>	<p><a href="https://www.energy.gov/node/768681">https://www.energy.gov/node/768681</a></p>
<p><b><i>Commercialization and Deployment at NREL: Advancing Renewable Energy and Energy Efficiency at Speed and Scale</i></b>            This National Renewable Energy Laboratory report provides an overview of deployment and market transformation, best practices of technology deployment, and resources.</p>	<p><a href="https://www.nrel.gov/docs/fy11osti/51947.pdf">https://www.nrel.gov/docs/fy11osti/51947.pdf</a></p>
<p><b><i>More and Better: Building and Managing a Federal Energy Demonstration Project Portfolio</i></b>            Building on prior Information Technology and Innovation Foundation (ITIF) work, this report aims to demonstrate how Congress and the administration can develop a federal clean energy technology demonstration program. It describes the portfolio needed to drive forward on deep decarbonization and how the federal government could better manage the demonstration portfolio. The report concludes by summarizing ITIF’s analysis and recommendations.</p>	<p><a href="https://itif.org/publications/2020/05/18/more-and-better-building-and-managing-federal-energy-demonstration-project">https://itif.org/publications/2020/05/18/more-and-better-building-and-managing-federal-energy-demonstration-project</a></p>
<p><b><i>Accelerating Clean Energy @Scale: Place-Based Solutions</i></b>            This presentation from researchers at the National Renewable Energy Laboratory discusses translating community energy ambitions into actions, community-centered clean energy opportunities in a coal</p>	<p><a href="https://www.nrel.gov/docs/fy21osti/80412.pdf">https://www.nrel.gov/docs/fy21osti/80412.pdf</a></p>



Title and Description	Link
transition, and example communities.	
<p><b><i>Energy Justice: Key Concepts and Metrics Relevant to EERE Transportation Projects</i></b></p> <p>Authored by researchers at the National Renewable Energy Laboratory, this living document describes new opportunities for the DOE Vehicle Technologies Office to further principles of transport equity and justice while maneuvering challenges as technology managers seek to incorporate potentially unfamiliar concepts from the social sciences into their research projects. This document provides a “primer” of key concepts and metrics relevant to energy equity and justice and a starting point for further engagement and discussion.</p>	<p><a href="https://www.nrel.gov/docs/fy21osti/80206.pdf">https://www.nrel.gov/docs/fy21osti/80206.pdf</a></p>

**Table B-2. Equity in Energy Resources**

Title and Description	Link
<p><b><i>Energy Justice Dashboard (BETA)</i></b></p> <p>This pilot data visualization tool displays DOE-specific investments in communities across the country experiencing disproportionately high and adverse economic, human health, climate-related, environmental, and other cumulative impacts. The dashboard displays DOE cost data—grants, cooperative agreements, and contracts—from more than 25 DOE program offices for the fiscal years 2019 to present.</p>	<p><a href="https://www.energy.gov/diversity/energy-justice-dashboard-beta">https://www.energy.gov/diversity/energy-justice-dashboard-beta</a></p>
<p><b><i>Equity in Energy</i></b></p> <p>This booklet published by the U.S. Department of Energy describes the seven pillars of the Equity in Energy initiative: Technical Assistance, Supplier Diversity, Workforce Development, Energy Affordability, National Laboratories, Energy Innovation &amp; Alternative Fuels, and STEM Enhancement.</p>	<p><a href="https://www.energy.gov/sites/prod/files/2020/10/f79/Equity_in_Energy_Booklet_10_16_2020_0.pdf">https://www.energy.gov/sites/prod/files/2020/10/f79/Equity in Energy Booklet 10 16 2020 0.pdf</a></p>
<p><b><i>The Path to Achieving Justice40</i></b></p> <p>Justice40 is a whole-of-government effort to ensure that Federal agencies work with states and local communities to make good on President Biden’s promise to deliver at least 40% of the overall benefits from federal investments in climate and clean energy to disadvantaged communities.</p>	<p><a href="https://www.whitehouse.gov/omb/briefing-room/2021/07/20/the-path-to-achieving-justice40/">https://www.whitehouse.gov/omb/briefing-room/2021/07/20/the-path-to-achieving-justice40/</a></p>
<p><b><i>EJSCREEN: Environmental Justice Screening and Mapping Tool</i></b></p> <p>EJSCREEN is the Environmental Protection Agency’s justice mapping and screening tool that provides a nationally consistent data set and approach for combining environmental and demographic indicators. EJSCREEN users choose a geographic area; the tool then provides demographic and environmental information for that area.</p>	<p><a href="https://www.epa.gov/ejscreen">https://www.epa.gov/ejscreen</a></p>
<p><b><i>Revolutionary Power: An Activist's Guide to the Energy Transition</i></b></p> <p>Shalanda Baker, DOE’s new head of Economic Impact and Diversity, argues that people of color, poor people, and indigenous people must engage in the creation of the new energy system to upend the unequal power dynamics of the current system. This book offers a step-by-step analysis of the key energy policy areas that are ripe for intervention.</p>	<p><a href="https://islandpress.org/books/revolutionary-power">https://islandpress.org/books/revolutionary-power</a></p>
<p><b><i>Energy Equity and Environmental Justice Workshop Report</i></b></p> <p>On December 11, 2020, 28 Pacific Northwest National Laboratory staff members discussed research to advance energy equity and</p>	<p><a href="https://www.pnnl.gov/main/publications/external/techni">https://www.pnnl.gov/main/publications/external/techni</a></p>

Title and Description	Link
environmental justice at a 2-hour internal workshop. This report documents the outcomes of the workshop and offers potential research questions.	<a href="#">cal_reports/PNNL-30949.pdf</a>

**Table B-3. In the News**

Title and Description	Link
<p><b><i>DOE Turns Its Focus toward Equity with Commitment To Lowering Solar Deployment Barriers</i></b></p> <p>This article describes DOE’s plans to encourage deployment of more solar and storage in low- and moderate-income communities, including a more than \$15 million commitment for technical assistance and to help underserved areas attract investment. The new initiatives and funding will help advance DOE’s justice, equity, diversity, and inclusion (JEDI) goals.</p>	<p><a href="https://www.utilitydive.com/news/doe-turns-its-focus-towards-equity-with-commitment-to-lowering-solar-deploy/599585/">https://www.utilitydive.com/news/doe-turns-its-focus-towards-equity-with-commitment-to-lowering-solar-deploy/599585/</a></p>
<p><b><i>DOE Gearing Up To Bring Equity Agenda to Energy Technology</i></b></p> <p>The American Institute of Physics reported on how new energy justice policies are being implemented in DOE’s R&amp;D programs.</p>	<p><a href="https://www.aip.org/fyi/2021/doe-gearing-bring-equity-agenda-energy-technology">https://www.aip.org/fyi/2021/doe-gearing-bring-equity-agenda-energy-technology</a></p>