



# Expanding the Baseline: Community Perspectives on Equity in Land-Based Wind Energy Development and Operations

Clara Houghteling, Anthony Teixeira, and Chloe Constant

*National Renewable Energy Laboratory*

**NREL is a national laboratory of the U.S. Department of Energy  
Office of Energy Efficiency & Renewable Energy  
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## List of Acronyms

NIMBY	not in my backyard
NGO	nongovernmental organization
NREL	National Renewable Energy Laboratory
WEEES	Wind Energy Equity Engagement Series

## Executive Summary

In recent years, research and policy discussions about the social impacts of renewable energy development have increasingly turned to the concept of energy equity—or, “the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on those disproportionately harmed by the energy system” (Initiative for Energy Justice 2019). However, though the lens of energy equity is increasingly being applied to wind energy deployment, the perspectives of communities on wind energy equity have been largely left unconsidered. The National Renewable Energy Laboratory’s (NREL’s) Wind Energy Equity Engagement Series (WEEES) has sought to improve understanding of equity in land-based wind energy by compiling knowledge from researchers, decision makers, industry professionals, and communities that have experienced wind energy development.

[A previous report](#) discusses findings from the first three phases of WEEES: a survey, subject matter expert interviews, and a stakeholder workshop (Gill et al. 2023). This report covers the fourth and final phase of WEEES, a series of community listening sessions on the topic of wind energy equity. In the summer and fall of 2023, a research team at NREL partnered with community-based organizations in three different cities across the U.S. to codesign and cohost the listening sessions. These gatherings were an opportunity for community members to share their past experiences with wind energy development and envision what an equitable wind energy future could look like where they live. The NREL team qualitatively analyzed notes taken during the listening sessions to build an understanding of participants’ thoughts and experiences regarding wind energy equity. The team organized the analysis according to key themes that emerged during the first three phases of WEEES, each of which has three or four relevant subthemes (Figure ES-1).

Early Planning and Capacity	Identity and Agency	Salient Benefits
Inclusive early planning	Sense of ownership and respect	Income and tax diversification
Partnerships with trusted NGOs	Community identity	Community benefit agreements
Audience-friendly communication	“NIMBY” is too simplistic	Distribution of benefits
		Life cycle impacts

**Figure ES-1. Themes and subthemes used in the qualitative analysis**

Participants in the first three phases of WEEES felt that wind energy equity required the following:

Theme 1, Early Planning and Capacity: the ability of community members to effectively engage in wind energy planning from the start, with the capacity to advocate for community priorities. (subthemes: Inclusive early planning, partnerships with nongovernmental organizations, and audience-friendly communication)

Theme 2, Identity and Agency: respect for a community's unique character and context, as well as the agency of community members to make decisions about local wind energy development. (subthemes: Sense of ownership and respect, community identity, and "NIMBY" is too simplistic)

Theme 3, Salient Benefits: the fair and equitable distribution of benefits—including financial benefits—from wind energy among community members throughout a project's life cycle. (subthemes: Income and tax diversification, community benefits agreements, distribution of benefits, and life cycle impacts)

These themes generally corresponded with the findings from the three listening sessions. The first listening session was held in Bloomington-Normal, a university town in central Illinois that is surrounded by farmland with dense wind energy development. Some key findings from the session in Bloomington-Normal, organized by theme, include:

- Early Planning and Capacity: Uncertainty persists, especially under new policies. Though residents have over a decade of experience with wind energy development in the area, new state-level policies have created fresh uncertainty about communities' ability to regulate renewable energy development. Community members highlighted the importance of ensuring that economic benefits go to "regular people," especially in underserved areas.
- Salient Benefits: Funding for resilient communities should be more widespread. Participants noted the important role that wind energy can play in funding community priorities like education. Wind energy projects have provided essential funding to school districts, but some community members worried that these funds are unevenly distributed, creating "have" and "have-not" districts. In addition to funding education, participants were interested in how wind energy could support energy resilience and job opportunities.

The second listening session took place in Elizabeth City, a small city on the coast of North Carolina with lots of potential for both land-based and offshore wind energy nearby. Key takeaways from the Elizabeth City session included:

- Identity and Agency: Wind energy could be a source of pride and employment. Participants were enthusiastic about the possibility of making wind energy a point of excitement for community members, as well as a source of job opportunities. Parents and educators noted that offering school trips to tour local wind farms, wind-related job training, and more local engagement around the technology could create a sense of connection to and pride in local wind energy projects.

- Salient Benefits: Questions about changes to land uses and job creation. Since wind energy is developed in rural areas, participants highlighted how important it is to consider all the ways rural land is used. In areas where hunting is an important source of food, could wind energy development potentially disrupt unofficial hunting grounds? Can it compete with other sources of employment for workers, such as power line worker positions? Participants wanted to see economic data and location-specific impact studies.

The third and final listening session took place in Gallup, New Mexico, a majority-Indigenous community on the southeastern edge of the Navajo Nation. For Gallup’s Indigenous community, wind energy development is not an independent phenomenon—it is part of a long history of infrastructure and energy development in their homelands. Key findings from the Gallup session included:

- Early Planning and Capacity: Need for community-guided, equity-focused planning. Ongoing energy access problems prompted community members to focus on the need for community-level control over wind energy planning. Based on past experiences, many participants distrust that governmental processes will represent community members’ best interests. Much of the discussion focused on the importance of putting “regular people” and community organizations at the center of wind energy planning.
- Identity and Agency: Painful legacies and land restrictions create trauma. Extractive energy development and inequitable energy access in the area have created community health crises, including uranium contamination from regional nuclear mining. Complex and burdensome land use regulations can be barriers to needed community infrastructure improvements, creating situations that can be physically and emotionally harmful. Participants wanted to see more funding and capacity support for Indigenous communities working to heal trauma and take charge of local energy development.

These and other findings emphasize the importance of community contexts in determining the meaning of wind energy equity. While the themes that emerged from previous phases of WEEES seemed to align with experiences in all three communities, each community’s historical, cultural, political, and economic experiences guided participants’ priorities for wind energy in the future. Future research and program efforts could include analyses of the effect of regulatory and policy landscapes on wind energy equity; studies on the outcomes of community benefit agreements; and a continued local focus that includes working with community organizations.



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# 1 Introduction

Research and policy discussions about the transition to renewable energy technologies have increasingly turned to the concept of energy equity—or, “the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on those disproportionately harmed by the energy system” (Initiative for Energy Justice 2019). Decades of research into the social acceptance of wind energy has long considered the social and economic impacts of wind energy deployment, sometimes through the lens of energy equity (Rand and Hoen 2017). However, the perspectives of communities on wind energy equity—its current state, its future potential, and even its definition—have been left largely unconsidered. The National Renewable Energy Laboratory’s (NREL’s) Wind Energy Equity Engagement Series (WEEES) sought to improve understanding of equity in land-based wind energy by compiling knowledge from researchers, decision makers, industry professionals, and communities that have experienced wind energy development.

This report covers the findings from the fourth and final phase of WEEES, a series of listening sessions in three communities across the United States: Bloomington-Normal, Illinois; Elizabeth City, North Carolina; and Gallup, New Mexico. Held during the summer and fall of 2023, these sessions were codesigned and cohosted with four organizations with connections to the three communities. These partner organizations were the Prairie Rivers Network and Illinois People’s Action in Bloomington-Normal; the Southeast Climate and Equity Network in Elizabeth City; and the New Mexico Social Justice and Equity Institute in Gallup. While offering some information to community members about wind energy, the sessions primarily provided participants with a forum to discuss their past experiences with wind energy development and envision what would need to happen to make wind energy more equitable in the future. The data collected from the sessions consisted of notes written by participants, discussion group notetakers, and members of the NREL team and partner organizations.

This report organizes and analyzes the information from the listening sessions according to the themes that emerged during the first three phases of WEEES. These themes, which are based on the results of a survey, subject matter expert interviews, and a stakeholder workshop, are as follows (taken from a [previous report](#) [Gill et al. 2023]):

- **Early Planning and Capacity.** The importance of engaging with communities impacted by wind energy development early, often, and inclusively was mentioned frequently in each phase. To mitigate existing inequities affecting community members’ access to and influence in decision-making and planning processes, developers, nongovernmental organizations (NGOs), and governments should work to boost local capacities for participation and advocacy. Subthemes include inclusive early planning, partnerships with trusted NGOs, and audience-friendly terminology.
- **Identity and Agency.** In addition to material concerns, the ability of communities to maintain control over the terms of wind energy development and its effects on social and cultural factors like community identity, history, and sense of place is a critical component of equity. Subthemes include a sense of “ownership” and respect; community identity; and the concept of not in my backyard (NIMBY) is too simplistic.

- **Salient Benefits.** Project participants emphasized that equity in wind energy requires that the benefits of wind energy be relevant and impactful for community members. Much of the discussion revolved around community benefit agreements. An equitable community benefit agreement prioritizes the distribution of tangible and culturally relevant benefits based on impact, not land ownership. Subthemes include income diversification, community benefit agreements, distribution of benefits, and decommissioning.

The findings from the listening sessions are not intended to simply validate or invalidate these themes. Rather, as experts on community experiences with wind energy, listening session participants can expand the meaning and parameters of these themes, adding nuances from their specific local contexts. These themes are therefore meant to provide a useful organizational structure that connects to earlier phases of WEEES; they should not be understood as a restrictive or definitive interpretation of listening session findings.

## 2 Methods

### 2.1 Value Propositions for Partners and Communities

When developing an initial approach to the wind energy equity listening sessions, the NREL research team sought to ensure that equity would be central both to the sessions' content (the "what") and their design (the "how"). The team worked with an equity consultant to define best practices and necessary conditions for equitable engagement. Forming partnerships with community-based organizations was an essential component of the resulting plan. Due to their local knowledge and longstanding relationships with community members, these organizations offer indispensable expertise about local contexts and values. Their accountability to fellow community members can also help to ensure that engagement happens equitably, with clear benefits for participants.

To design additional protections against the listening sessions becoming extractive (i.e., taking information from participants without offering any value in return for their participation), the NREL team developed an internal set of value propositions to clarify how NREL would work to benefit both partner organizations and communities. In addition to compensation for staff time and expenses, potential sources of value for community-based organizations included:

- Resources to help organizations support their communities' priorities during future wind energy development, tailored to specific community goals and contexts
- A more comprehensive understanding of community perspectives on wind energy and priorities for future projects
- Technical expertise and national perspectives on wind energy, informed by connections to other partner communities experiencing wind energy development
- Information on funding and technical support available through NREL and federal agencies.

Potential value for community participants included:

- Information on how other communities have engaged in wind energy development, including case studies of community benefit agreements
- Facilitation and a neutral forum to determine community priorities and goals for future wind energy development
- Technical expertise and resources on wind energy that have been tailored to address local values and concerns
- Context for how critical decisions around development could be informed by community perspectives, and how communities might engage to influence those decisions.

As part of the codesign process explained in Section 2.3, the NREL team worked with partner organizations to determine which of these sources of value best fit each community's context and integrated those sources into each listening session plan.

While NREL received positive feedback from partners and participants on the sessions, NREL did not conduct a formal evaluation process to determine how much value was delivered in the areas identified above. However, in future engagement with communities, there may be an

opportunity to follow up with more information on concrete actions that community members and community organizations could take to engage effectively in the development process.

## 2.2 Community and Partner Matching

Before beginning outreach to potential partner organizations, the NREL team first had to determine which communities might be a good fit for a listening session. The NREL team aimed to hear from a diverse range of perspectives in the communities where the listening sessions were held, making geographic and demographic diversity important. To share firsthand knowledge relevant to wind energy equity, the communities would also need to have previous experience with the development of one or more wind energy projects. Though it was not a strict criterion, the NREL team decided to focus on communities that had strong wind resources, which indicated that they would be more likely to experience additional wind energy development in the future. That way, reflecting on wind energy equity topics such as inclusive planning processes, community benefits, and lifecycle considerations might also provide more value and relevance for community members (see Section 2.1 for more information on value propositions for partners and participants).

With these considerations in mind, the team created a spreadsheet of U.S. counties with wind energy projects organized by geographic region (West, South/Southeast, Northeast, Midwest/Plains). By researching U.S. Census records and newspaper articles, the team then compiled information related to the following criteria:

1. Diversity: Ensure that the listening sessions reflect a wide range of experiences. These criteria can apply both to diversity within individual communities and across the list of participant communities. Considerations include:
  - Geographic region
  - Race and ethnicity demographics
  - Economic/income demographics
  - Dominant regional industries
  - Land and home ownership rates.
2. Wind energy development experience: Seek communities that have existing wind energy projects nearby and may have more wind energy development in the future. Avoid communities currently experiencing the planning or construction of a wind energy project due to concerns about the appearance of bias or promotion. Considerations include:
  - Existing wind energy project footprints
  - Wind energy development stage
  - Wind resource data
  - Press about future wind energy projects
  - Ongoing litigation related to wind energy projects.

After identifying communities that aligned with these criteria, the NREL team asked regional contacts and conducted internet research to find potential partner community-based organizations. After reaching out via email and meeting to discuss the wind energy equity listening session project, the NREL team established partnerships with four organizations to codesign and cohost listening sessions in three different communities:

- Bloomington-Normal, Illinois: Prairie Rivers Network and Illinois People’s Action
- Elizabeth City, North Carolina: Southeast Climate and Energy Network
- Gallup, New Mexico: New Mexico Social Justice and Equity Institute.

While not all four organizations would be widely considered community-based organizations (and definitions of community-based organizations vary), the members of each organization who worked on the listening sessions have direct ties to communities through their personal or professional lives, or both.

## 2.3 Codesigning Listening Sessions with Partners

In weekly planning meetings that took place over 1.5–4 months, each partner organization worked with the NREL team to develop plans for a wind energy equity listening session. These codesign meetings addressed outreach and publicity; event date, time, and venue; accessibility provisions; cultural considerations; and agenda and facilitation structures. During these meetings, community partners also informed the NREL team about any topics of interest or concern related to wind energy that they felt community members would want to have addressed during the session. These topics included state or local policies related to wind energy, concerns around environmental impacts, and workforce considerations specific to regional contexts.

For each listening session, the NREL team developed a customized presentation that offered a brief overview of local wind resources and wind energy developments, key wind energy equity topics identified through previous research (see Section 1 for a description of previous phases of the project), and the topics partners had identified as particularly important to each community. Each partner organization reviewed the presentation developed for their community so that any revisions or additions could be made before the listening session. After all the listening sessions had been completed, NREL organized a virtual meeting for the four community partners to meet, discuss the listening session findings, and share knowledge. These presentations and meetings were part of the NREL team’s effort to provide value and reciprocal expertise to communities.

Note that in each community, the listening session participants tended to have positive feelings about wind energy and renewable energy in general. While in some cases these views may accurately represent the predominant feelings of the communities as a whole, the frequently contentious nature of wind energy development indicates that this may be the result of self-selection bias, with community members who had more negative feelings choosing not to attend the listening sessions.

## 2.4 Deductive Qualitative Analysis

Due to variations in codesigned facilitation structures and differences in attendance numbers, the methods of qualitative data collection varied from session to session. In Bloomington-Normal, most of the participants’ comments were recorded on sticky notes written either by community members or by notetakers (including NREL team members) during small group discussions. In

the listening sessions in Elizabeth City and Gallup, however, most of the participants’ comments were recorded in notes taken by the NREL team or partners during full group discussions. (At every session, the NREL team informed participants at the beginning of the session that a report would be published about the sessions, and that though it would share where each listening session had taken place and what was discussed, no personally identifying information would be included in the report.)

All notes and comments from the listening sessions were then transcribed and qualitatively coded using the themes and subthemes identified in the earlier phases of the project (see Figure 1). These themes and subthemes structure the following analysis and discussion. Because none of the participants’ comments were excluded during the coding process, the listening session findings expanded the meaning of each theme and the overall definition of “wind energy equity.”

<b>Early Planning and Capacity</b>	<b>Identity and Agency</b>	<b>Salient Benefits</b>
Inclusive early planning	Sense of ownership and respect	Income and tax diversification
Partnerships with trusted NGOs	Community identity	Community benefit agreements
Audience-friendly communication	“NIMBY” is too simplistic	Distribution of benefits
		Life cycle impacts

**Figure 1. Themes and subthemes used in the qualitative analysis**



## 3 Listening Session in Bloomington-Normal, Illinois

### 3.1 Community Background and Listening Session Overview

The first listening session was held in Bloomington-Normal, a city in McLean County in central Illinois. Bloomington-Normal is a university town—home to Illinois Wesleyan University and Illinois State University—in a predominantly rural area that has experienced a significant amount of wind energy development. McLean county is a wind-energy-dense county in a wind-energy-dense state. In 2023, Illinois had 7,192 megawatts of wind energy capacity, enough to power over 2 million U.S. homes per year (Wind Energy Technologies Office 2023a; U.S. Geological Survey n.d.). Seven large wind energy projects in McLean County are responsible for over 1,000 megawatts of that statewide total (American Clean Power 2022). The listening session had a large turnout, with over 60 community members in attendance.

Some of the topics that the partner organizations, Prairie Rivers Network and Illinois People’s Action, identified as important to the community included wildlife impacts and the implications of state-level renewable energy legislation. In 2021, Illinois had passed the Climate and Equitable Jobs Act, which creates equity-focused clean energy training programs and supports clean energy transitions. The state legislature subsequently passed Public Act 102-1123 in early 2023, which limits local governments’ ability to regulate wind and solar energy development by requiring them to adopt standards for renewable energy siting and permitting that are no more restrictive than state-level standards. The full impacts of these policies on wind energy and workforce development in McLean County were still unclear.

### 3.2 Early Planning and Capacity

The following sections offer the Bloomington-Normal listening session participants’ perspectives on how community members can best engage in wind energy planning processes to advance wind energy equity. Some of their key takeaways included the value of opportunities for community members to share stories and ask questions about wind energy; the importance of combatting misinformation through trusted information sources; and the need for long-term perspectives in energy system planning.

#### 3.2.1 Inclusive Early Planning

Many of the listening session participants had been in McLean County long enough to have witnessed decades of wind energy development there, and many had been involved in wind energy planning processes by attending public meetings or, in a few cases, serving in city or county government. Yet despite these experiences, participants frequently expressed concern that the planning and development process remained “uncertain” for governments and residents alike. Community members still had many questions about how the wind energy projects operated (e.g., “Why does every turbine have its own light?”), and those with planning experience felt that governing bodies such as zoning boards “don’t always know how to handle” planning decisions and processes.

The recent passage of Illinois Public Act 102-1123, which set uniform standards for local wind and solar energy siting ordinances, had introduced a new source of uncertainty. On one hand, the new law may help to resolve one of the participants’ top concerns: that development companies “cherry-pick” counties without a lot of resistance to development, which can leave other nearby

counties surrounded by wind energy projects but excluded from their tax benefits. Since the listening session attendants overwhelmingly supported renewable energy (see Section 2.3 for more on participant self-selection), many also liked that the new law could boost renewable energy development across the state, even in counties with strong opposition. However, some participants worried that the new law might hamper communities' ability to effectively plan for wind energy, potentially taking away their ability to advocate or negotiate for community benefits from wind energy projects.

Whether (or how) more inclusive early planning processes would address community members' concerns was an unresolved question. Many participants shared anecdotes of fraught public meetings about wind energy, where residents sometimes “come to blows” or come to tears. Several discussion groups shared fears that organized opposition to wind energy—potentially with external funding—could overwhelm public processes. Making early planning more inclusive may therefore require close attention to the scope and format of planning discussions. Participants emphasized the value of considering wind energy in terms of larger energy “end goals,” including electric rates, grid expansion, electricity storage, distributed renewable energy development, and just transitions away from fossil energy. Participants also stressed the importance of engagement formats that allow community members to share their stories, priorities, and concerns, with some recommending that development companies hold their own listening sessions. Many felt that sharing their experiences would help fellow community members to feel heard and reduce a sense of conflict around wind energy.

### **3.2.2 Partnerships With Trusted NGOs**

While participants primarily focused on the roles of community members, development companies, and local governments in equitable wind energy development, they also suggested several ways in which regional and community-based organizations could help to fill current equity gaps. Most commonly, participants suggested that NGOs could counter prevalent misinformation about wind energy technology by distributing reliable, fact-based information to residents. Participants felt that misinformation about wind energy spread easily due to a lack of neutral, third-party information sources, as some residents distrust information provided by development companies and local governments. Trusted organizations could therefore improve community members' ability to engage in decision-making processes by offering “myth-busting” educational materials about wind energy technology, construction and operations, and environmental impact mitigation.

Relatedly, many participants were eager to see local environmental organizations working directly with development companies to protect species that could be impacted by a wind project. Risks to birds, and especially bats, were frequent topics of discussion, and some community members were well informed about local conservation efforts related to wind energy projects. Because agricultural industries are very important in McLean County, there were also several suggestions for agriculture-related research topics that local universities or research organizations could investigate, such as the effects of wind turbines on animal husbandry practices. To a lesser extent, participants also noted the potential of NGOs to build capacity for local governments by facilitating engagement with community members and compiling guidance for local decision makers (e.g., how to use state and federal funding opportunities related to renewable energy).

### **3.2.3 Audience-Friendly Communication**

Throughout the session, participants found it useful to talk about the impacts of wind energy development at different scales, considering both the energy system as a whole and regional experiences. These conversations often led to comparisons between wind energy development and other forms of energy production. For instance, several small groups were quick to discuss the harmful environmental and health effects of coal mining in Illinois. Another participant said that the local wind energy projects were “not a health concern compared to the nuclear plant” in a nearby town. Put in this framing, wind energy development was not a “yes or no” question (wind energy or no wind energy), but rather a “yes or what else” question unfolding in the context of an energy system that relies on other sources of energy with their own risks and impacts. As one participant asked, if not from the wind turbines, “Where do you think your energy is going to come from?” These lines of conversation suggest that putting wind energy into perspective could be an effective communication tool, especially in communities with prior experience with other types of energy development.

As compelling as the broader energy system framing seemed to be for many participants, some felt that the local role of wind energy needed to be communicated more effectively. In the words of one longtime resident: “I drive by them, but never knew much more other than that they were cool and my Ameren [local energy provider] bill was high.” Wind energy might be a big presence in the county landscape, but it seemed disconnected from local energy concerns. Several others noted that the community needed more education about the potential social and economic benefits of wind development; many hadn’t realized that revenues from a local wind project had “saved” a local school district. The environmental impacts of wind energy projects were similarly opaque. Perhaps the top communication priority to emerge from the session was the need to “fight disinformation” about wind energy. The large infrastructure development involved in wind energy deployment, including transmission expansion, could be “scary stuff to a lot of people,” and participants felt that it was extremely important that the public have more access to the facts about wind energy.

## **3.3 Identity and Agency**

Participants identified McLean County’s farmland and growing wind-powered industries as central elements of local identity. The next sections consider how wind energy has interacted with the local social and cultural dynamics, inspiring both optimism and contention.

### **3.3.1 Sense of Ownership and Respect**

Some of the potential benefits of wind energy development are not material or financial in nature. Because most session attendees liked renewable energy (see Section 2.2 on participant self-selection), perhaps it is not surprising that they described positive emotional impacts that wind energy development can have in certain contexts. Many community members expressed a sense of pride and excitement in knowing that the wind energy produced near them contributed to a “bigger picture” in the renewable energy transition. Businesses like the Rivian electric vehicle plant, which had been drawn to the area in part because of the availability of wind energy, were another source of pride and optimism. Even among participants who self-identified as having very little experience with wind energy, the turbines could create a “sense of hopefulness.”

However, several participants who lived nearest the area’s existing wind energy projects felt that local wind development had often lacked transparency in a way that undermined local support. They were confused about why some farms received attention from development companies while others were passed by. Having watched turbines go up on their neighbors’ properties, several farmers expressed disappointment that they had been excluded from development conversations. The sense that developers “cherry-pick” locations amplified concerns that, except for a few landowners, only the developers would benefit from wind energy projects. Many felt that there would be more community buy-in for wind energy if certain information were made more publicly accessible, including where the energy “would go” (i.e., where the power purchasers are); whether all landowners would receive the same lease terms; and what the benefit to the community at large would be.

### **3.3.2 Community Identity**

Contrary to some popular narratives, rural places are home to rich social complexity and layers of identity. McLean County—which contains both a college town (Bloomington-Normal) and a productive farming industry—and its neighboring counties are no exception. The community members who attended the session described how differences in identity and community self-perception could affect local views of wind energy development. For instance, some participants felt that residents who viewed the area primarily as a traditional farming community were likely to think that “land isn’t supposed to change” and try to “keep the nonfarm residents down.” In a similar vein, some participants noted that wind turbines could be “political,” with opinions about them varying with political affiliation. However, others felt that over time, wind energy development would shift the community’s identity more broadly, creating more diversity as industries moved in to take advantage of plentiful renewable energy. According to teachers and some school-age participants, wind energy excites the younger generations. Local students were eager to learn more about wind energy and related job opportunities, perhaps indicating a lasting role for wind energy in the community’s economic and cultural life.

### **3.3.3 “NIMBY” Is Too Simplistic**

NIMBY, or “not in my backyard,” describes the perceived social phenomenon that many people, especially the privileged or affluent, will oppose changes or developments affecting their neighborhood or community, even when they generally support the change or development happening elsewhere. Participants brought up NIMBYism frequently throughout the session. One participant, for instance, felt that NIMBYism was stymieing “energy justice” in the renewable energy transition because many wanted “the profits [of wind energy] but not the view of the turbines.” Some recalled stories of landowners who wanted to have turbines on their land but were kept from joining wind energy projects due to nonparticipating neighbors. One story even centered on a “\$170 million wind development held up for over two years due to a couple of wealthy landowners.” These narratives reveal some of the dynamics at play in communities experiencing wind energy development, where different views of land use and renewable energy development mix with preexisting local politics and interpersonal relationships.

Power dynamics (e.g., differences in wealth, political leverage, or access to decision-making processes) may make some opponents of wind energy better able to resist its development in their “backyard” than others. Though wind energy is not associated with the same sorts of negative environmental and health impacts as other forms of energy production, it could still be

subject to inequitable deployment patterns. In Bloomington-Normal, however, the NIMBY narrative did not capture the full range of local experiences and concerns. Though opposition certainly existed in the area (visible in antiwind yard signs, for instance), the session participants shared an overwhelming support and enthusiasm for wind energy. Some also felt that opposition to wind energy projects was decreasing as their tax and economic benefits became more apparent. The possibility of changing sentiments around wind energy raised some important, if complex, questions about equity. For instance, can a community become “saturated” with turbines and their cumulative visual impacts? Even with benefits for communities, how much energy production should rural areas shoulder? Should the focus in Illinois, for instance, shift to offshore wind in Lake Michigan, closer to the major energy users of Chicago and its suburbs? These questions do not have straightforward answers, depending heavily on context and the perspectives of diverse community members.

### **3.4 Salient Benefits**

Many listening session participants had witnessed the financial benefit that wind energy can bring to schools and farms, both of which might overcome extreme economic difficulty through stable funding from wind energy. The following sections describe these experiences and community members’ priorities for future benefit agreements, like reduced energy costs and equitable clean energy jobs training.

#### **3.4.1 Income and Tax Diversification**

Across the state of Illinois, wind energy development contributes about \$57 million in state and local taxes (American Clean Power 2022). Some participants could point to economic and financial benefits that wind energy had brought to their communities—most frequently, by giving a funding boost to struggling rural school districts. Those who knew about these “success stories” often felt that they had not been publicized enough. Indeed, many participants had difficulty seeing the economic benefits of wind energy “unless you are a landowner [who leased land] to a wind farm.” In small group discussions, community members shared stories about farms that depend on revenue from wind turbines, while some also considered how wind energy might attract other industries, such as the Rivian electric vehicle plant. These discussions often turned to the possibility of creating well-paid, stable jobs for “friends, neighbors, and the community.” Many attendees had been involved in the passage of Illinois’ Climate and Equitable Jobs Act through the partner organizations, Illinois People’s Action and Prairie Rivers Network. This previous activism informed one of the session’s major wind energy equity priorities for the future: creating equitable job growth that would benefit frequently marginalized or historically oppressed groups.

#### **3.4.2 Community Benefit Agreements**

Aside from funding to local schools, participants were generally unaware of any direct benefits that agreements with developers had brought to their communities. As one resident noted, “I see lots of wind and love it, but don’t know if there was a [community benefit agreement] when it was planned.” After the NREL team’s presentation on community benefit agreements and case studies, including one from another town in Illinois, there was considerable interest in understanding how community benefit agreements could be leveraged to improve economic and energy equity at a local scale. Some mentioned expanding programs for equity-oriented job training and access under the model of the Climate and Equitable Jobs Act, which has created

clean energy worker training programs that prioritize vulnerable or marginalized communities. Participants also discussed using wind energy projects to address inequitable energy burdens and generally high electricity rates. These discussions included the possibility of guaranteed electricity rates or electricity discounts for residents of counties with wind energy projects. However, some members brought up the possibility of inequity between counties under these types of agreements: if benefits stopped at the county line, those right outside that jurisdiction may be impacted by wind energy development without sharing in the benefits.

### **3.4.3 Distribution of Benefits**

Participants emphasized the need for “regular people”—not just landowners and developers—to see benefits from wind energy. Many felt that, despite the public subsidies going to wind energy infrastructure, the bulk of its benefits were staying in the hands of private companies. Throughout the session’s benefits-related discussions, participants prioritized economic benefits for underserved groups. Many were interested in jobs in renewable energy as a high-quality, upwardly mobile employment pathway for workers without college educations. Some participants identified wind energy job creation as an opportunity to improve racial equity and diversify the energy workforce. In addition to funding K-12 school districts, wind energy could support equity through renewable energy technical training and higher education options. To ensure that an equitable distribution of benefits extends across county lines, participants also discussed the importance of cooperation between local governments and neighboring communities. This included planning efforts to leverage wind energy to improve local energy resilience. Some small group discussions focused on the idea of community-scale, distributed wind energy as an avenue for reducing energy rates and providing energy security during extreme weather, like winter freezes.

### **3.4.4 Life Cycle Impacts**

While McLean County has had plenty of experience with the beginning (i.e., construction) and middle (i.e., operations) of a wind energy project’s life, none of the community members had personal experience with the decommissioning of a project at the end of its service. They felt that it was difficult to ensure that the wind energy companies set aside sufficient funds to manage the decommissioning process, from tower disassembly and blade disposal to land restoration. Participants who had served in local government called estimating decommissioning costs “a shot in the dark,” as prices could change significantly over a project’s 25- to 30-year run. In addition to questions about the environmental effects of decommissioning, including water drainage and soil restoration, many participants also had questions about the environmental and health effects of wind energy projects during operation. Participants had questions about turbines’ impacts on crops, livestock, birds, and bats, as well as nuisances like the turbines’ blinking red lights and construction impacts. Their concerns, which may be addressed or mitigated through research and technology development, warrant consideration and discussion in decision-making processes.

## 4 Listening Session in Elizabeth City, North Carolina

### 4.1 Community Background and Listening Session Overview

Elizabeth City sits on the Pasquotank River, just off the Albemarle Sound in the northeastern corner of North Carolina. The farmland surrounding the city hosts the state's only wind farm operating at the time of the listening session, a 104-turbine project that powers data centers in Virginia. Elizabeth City's location on the coast is surrounded by both onshore and offshore wind resources, indicating the potential for more substantial wind energy development in the future. At the time of the listening session, another land-based wind energy project was under development in nearby Chowan County, and the Kitty Hawk offshore wind energy project had been proposed nearby. Furthermore, wind energy is supported by North Carolina's House Bill 951, which encourages clean energy development and requires the state to reduce its carbon emission 70% by 2030. Despite this activity and extensive outreach, the listening session had a relatively small turnout of seven people—a fact that attendees took as evidence of most community members' feelings of disconnection from local wind energy.

The community partner organization, Southeast Climate and Energy Network, expected that participants would want information on equitable and inclusive planning, because past wind energy planning processes had excluded community members and generated deep feelings of distrust. Many community members were also dismayed that large corporations own both the project operating in their county and the project under development in the neighboring county, using the wind energy to power data centers across the region rather than local households. Meanwhile, Elizabeth City continues to experience high energy rates and heavy energy burdens (i.e., energy payments take up a large percentage of residents' incomes). The Southeast Climate and Energy Network's representatives felt that participants would likely want to learn about examples of community benefit agreements that had lowered local energy costs and created local job growth.

### 4.2 Early Planning and Capacity

The local government's permitting and approvals process for a nearby wind energy project left many Elizabeth City community members with a lingering sense of distrust. The following sections describe participants' perspectives on what went wrong in previous processes and what steps are needed to make wind energy planning more equitable in the future.

#### 4.2.1 Inclusive Early Planning

The overwhelming feeling that participants used to describe wind energy development around Elizabeth City was “disconnection.” They felt that the process around siting and approving the wind project at the city's edge had happened behind closed doors, leaving little room for public engagement. According to one local government worker in attendance, only the city managers have access to the financial information about the development, and the community at large did not know how much money the wind project was generating for either the local government or the farmers leasing their land. While financial information about wind energy projects is part of the public record and must be disclosed, this experience indicates that participants did not feel that this information had been properly disseminated or made accessible to community members. The lack of transparency and engagement had “left a scar” in how the community thought about

wind energy. During the permitting process for a second nearby wind project, discussions had quickly grown antagonistic, split between a “pushy developer” and wind energy opposition that had “pulled a lot of money together.” The contention eventually led the county commissioners to deny the project, which moved across the county line.

The community members in attendance felt that stopping wind energy development was not the right answer—especially considering its potential to provide local tax revenue and economic benefits. Instead, they were drawn to the idea of community-driven planning, which would frame wind energy development as “going after what we [community members] want.” They were intrigued by the idea of proactively organizing as a community to determine what local wind energy development should look like in the future, perhaps by developing a multiyear plan or soliciting developers for wind project agreements that would meet local priorities. They also felt that it was important for developers to get to know unique community contexts and take time to hold public conversations. Given past development experiences, however, they felt that it would take effort for the community to “get past not wanting to talk about it.”

#### **4.2.2 Partnerships With Trusted NGOs**

According to the participants, past development experiences had led to widespread distrust of the government. Creating more productive local discussions around wind energy would need to involve getting more diverse voices from the community, including those of local educators, involved in planning. However, participants felt that it was much easier to “get folks out against something” than to organize in support of wind energy. While NGOs could be helpful in catalyzing community action, participants agreed that trusted organizations had stayed out of the wind energy conversation, potentially to avoid controversy. Still, the session attendees’ strong desire for more context-specific information about wind energy—both its impacts and benefits—indicated a gap that local organizations might be best suited to fill. For instance, several participants had friends or family members who depend on rural hunting, mostly on private land, for food. They wanted to see studies on the impacts of wind energy development on hunting, but such research would require local knowledge of hunting practices, including contacts with hunters, that only local researchers are likely to have. Some also cited the need for resources that would help landowners make informed decisions about leasing land to wind energy projects, with comparisons to other revenue-generating options. This sort of information, while important, may not seem trustworthy if provided by a developer.

#### **4.2.3 Audience-Friendly Communication**

The listening session generated many ideas about how wind energy should be discussed and what topics should be covered. In general, participants wanted less jargon, more accountability, and more attention to job opportunities and environmental education. With current wind energy projects, it seemed to participants that developers had “made promises and disappeared,” leaving no way to contact the current wind project operators. Previous communication about the local wind project had focused on technical details about renewable energy credits and the power system, topics that had not made much sense to community members. By failing to offer more specific details about economic opportunities and local-level environmental impacts, this communication had seemed to be a “lost opportunity” to connect with residents about their priorities. According to some parents at the session, “wind farms don’t look like job opportunities” to young people, but they thought that better outreach to teachers and school-age



children might change that. They considered how conducting wind project tours, bringing wind energy science demonstrations to schools, and providing curriculum materials about energy and the environment might boost interest in wind energy projects. Furthermore, they suggested that integrating wind energy information into public spaces through explanatory signage or landmarks could help the community feel more connected to existing wind development.

### **4.3 Identity and Agency**

Factors like land use and political dynamics can affect how local identities interact with wind energy development. These sections discuss Elizabeth City participants' emphasis on the need to integrate wind energy with preexisting land use considerations.

#### **4.3.1 Sense of Ownership and Respect**

Though the wind turbines were visible across much of the county's landscape, residents felt that there were few positive ways to interact with them. One community member (who did not attend the listening session but shared his perspective with one of the session facilitators beforehand) said that "each turbine is like a middle finger" due to a lack of respectful engagement during the development process. While attendees acknowledged that they had heard very few complaints about the turbines, they doubted this meant that most of the community approved of the wind project. Rather, they thought that most people were simply tired of talking about them. Some participants—especially a few who had backgrounds in engineering—considered the turbines to be impressive feats of infrastructure. They felt compelled to ask, "Why aren't we proud of wind farms as a community?" The answer seemed to be the prevailing sense of disconnection from the project; in short, there had been no attempt to encourage a feeling of pride. Without clear connections to the local workforce or opportunities to learn more about the projects, wind energy seemed only to belong to the developers and the land-leasing farmers, not the community at large. Many participants pointed out that they were not connected to the wind energy projects as energy consumers: since corporations own the electricity generated by the local wind energy projects and use it to power data centers across several states, community members were not purchasing local wind energy when they paid their energy bills. The participants agreed that the listening session's relatively low turnout was another indication that most community members felt disconnected from local wind energy development.

#### **4.3.2 Community Identity**

Throughout the session, participants mentioned that common arguments in support of wind energy deployment did not resonate with most of the local population. For instance, land rights are extremely culturally important in their region, while climate change has not been a central topic of discussion for many in the community. Throughout most of the county, "Folks are just trying to get by" and are focused on daily concerns and economic stressors. Relying on conventional wind energy talking points therefore seemed unlikely to align with the community's priorities and cultural values. Instead, participants wanted more recognition from developers that "every community is different" and that outreach about wind energy should meet people where they are. They liked the idea of having listening sessions throughout the development process to ensure that local perspectives are reflected in decision-making. Some of the subjects they wanted developers or local government to address included impacts on access to hunting grounds, potential funding to local schools, and wind energy job creation.

### **4.3.3 “NIMBY” Is Too Simplistic**

To some, the lack of engagement and information around the wind project meant that it had felt like “an invasion.” Though the turbines had been operational for several years by the time of the listening session, their full impact was still unclear to participants. Information about environmental assessments had not been shared with community members, and without any effort from the local government to disseminate information about the tax revenue it created, they had difficulty determining whether the wind energy project was benefitting the town. Their concerns were magnified by a lack of trust in their local government to represent their best interests. Had consideration of the community’s wellbeing been part of the approvals process? Compounding a clear difference in the interests of landowners who had lease agreements and the rest of the residents, there were also rumors about absentee landowners, who might profit off turbine lease revenues from afar. In this context, uncertainty about wind energy cannot be chalked up simply to antiwind activism; exclusion from meaningful engagement in the development process had fed concerns.

## **4.4 Salient Benefits**

None of the participants were aware of any benefits that wind energy had provided to the community, leading to a widespread sense that only the development company and landowners with turbines benefitted from the project. The following sections describe these dynamics and the benefits that participants would like to see from wind energy in the future, including job training and opportunities and reduced energy costs.

### **4.4.1 Income and Tax Diversification**

Participants identified job opportunities as an extremely important means for making wind energy more equitable at local and regional scales. Since Elizabeth City is a coastal city with potential for both land-based and offshore wind energy development nearby, employment related to both technologies came up throughout the listening session. Though much of North Carolina’s state-level plan for renewable energy job creation focuses on offshore wind energy supply chains (North Carolina Office of the Governor 2021), participants believed that manufacturing industries would not be feasible in their area due to water shortages and limitations in other infrastructure capacities. Instead, they discussed the possibility of becoming a training hub for wind energy technicians. Some suggested following the model of a nearby airline training program, which had supplied the workforce for a regional airport. To attract workers, however, wind energy job options would have to compete with alternative careers. One of the attendees worked in maritime training, including offshore wind work, and in his experience, young workers evaluated positions according to 1) income level, 2) location, and 3) career aspirations. Hiring locally could align with the second criterion, capturing workers interested in staying in the area. It would also perhaps improve feelings about wind energy generally. As one participant said, “Hire local, and the workers will talk about it.”

### **4.4.2 Community Benefit Agreements**

Some of the attendees, including a local government employee, had heard about possible community benefits at the beginning of the wind project’s development. Once the turbines were constructed, however, they felt that the attention to community benefits disappeared. (NREL’s background research indicates that there was not a community benefit agreement attached to the project, though sometimes tax revenues and lease payments to farmers are described as

“community benefits” in materials about the project [Iberdrola n.d.; U.S. Department of Energy 2017]). In general, participants felt that there was a lack of accountability to the community. Some of their top concerns were that the local government did not work to make financial information about the project easily accessible to community members and that there were few opportunities to be involved in decision-making about wind energy. Without being included in discussions about wind energy revenues, community members did not know how the financial benefits of the wind energy project were benefitting the community at large. If a more effective community benefits negotiation were to happen in the future, participants indicated that they would like to see funding put toward improving local energy affordability. However, the likelihood of such a negotiation is difficult to assess. In some cases, the zoning policies in North Carolina may not offer communities much leverage to negotiate for benefit agreements. Under Special Use permitting processes, for example, wind energy development projects would be approved if they meet a predetermined set of requirements. Though local governments may put conditions on a Special Use project, community benefit agreements are likely to fall outside the scope of these conditions.

#### **4.4.3 Distribution of Benefits**

One of the participants’ foremost equity concerns was the distribution of energy itself. Because both of the nearby wind energy projects (one operating and one under construction at the time of the listening session) are owned by corporations and used to power data centers, none of the energy they produce goes toward powering the local community. Meanwhile, residents of Elizabeth City’s low-income areas deal with unreliable electricity supplies and brownouts. In North Carolina’s warm and humid climate, many residents cannot afford to pay for air conditioning, meaning that while “they are not the ones causing the problems” of high electricity consumption and a strained grid, but “they’re the ones that suffer” from an unreliable energy supply. Energy burdens in the county remain high (NREL 2023), despite nearby wind and solar energy development. Participants could understand the complexities of electricity supply chains, transmission expansions, and power purchase agreements; still, the lived reality of energy insecurity occurring right next to large renewable energy facilities was frustrating. One participant summarized the situation by saying, “There’s all this wind and solar, and I’m still paying 30% of my income on energy bills.” While participants liked the idea that a wind energy project could provide stable incomes to small farmers (who may be left economically vulnerable from crop fluctuations), they wanted the rest of the community to see material benefits from renewable energy development, too. Sharing benefits more broadly seemed especially important given widespread inequities in land ownership demographics and the rapidly expanding footprint of renewable energy.

#### **4.4.4 Life Cycle Impacts**

Due to their concerns about developers “disappearing” after a project has been constructed, participants emphasized the importance of having a reliable means of communicating with wind energy plant owners and operators throughout its full length of service. Their desire for accountability extended to environmental and social impact studies—community members wanted to see data about the impact of the wind project on the local human and wildlife populations. While wind energy projects are required to conduct some level of environmental assessment, participants discussed the value of having both pre and postassessments for issues of local concern. For instance, the participants who had previously brought up the importance of

hunting in the community wanted to see a study on the effect of the wind farm on local hunting access and yields. Another participant mentioned wanting to see research on tourism impacts in coastal towns that neighbor a wind energy project, and all the participants wanted to see a full accounting of the costs and revenues of a wind energy project, from planning through decommissioning. Many wondered whether the strain and effort needed to build a wind project had been worth it; they sensed that wind energy had taken the local government’s attention away from other pressing issues. To make the case for wind energy in the future, they wanted to see clear plans backed up by data on how the community would benefit from development.

## 5 Listening Session in Gallup, New Mexico

### 5.1 Community Background and Listening Session Overview

The city of Gallup is in McKinley County, New Mexico, off the southeastern edge of the Navajo Nation. Most of the city’s residents are Indigenous, including many Navajo (Diné), Zuni, and Pueblo people. For these community members, the area is both their current home and part of their ancestral homelands. It is surrounded by the four sacred mountains of the Navajo people, which mark the Navajo homeland. While wind energy is the largest source of electricity in New Mexico, producing about 35% of the state’s electricity, there are relatively few wind energy projects near McKinley County and Navajo Nation (Wind Energy Technologies Office 2023b). The project closest to Gallup had raised concerns among some community members for obstructing views of Tsoodzil (Mt. Taylor), one of the four sacred mountains and an important place for ceremony.

Eleven participants came to the forum. Feedback received during outreach about the session indicated that many more community members were interested in attending but could not travel to the in-person event. Almost all the attendees were Navajo, and while codesigning the listening session, the New Mexico Social Justice and Equity Institute’s representatives recommended leaving time for an opening prayer to be delivered by an elder, followed by personal introductions from the facilitators and participants. The Institute team anticipated that participants would want to know about any health impacts from wind energy. Contaminated dust from uranium mining for nuclear energy had created a health crisis in the community, so participants knew how intertwined community health and energy development could be. The Institute team also thought that participants would want to know about options for community-scale renewable energy projects that could provide energy access to the many community members whose homes were not connected to the grid.

### 5.2 Early Planning and Capacity

For Gallup’s Indigenous community, wind energy development is not an independent phenomenon—it is part of a long history of infrastructure and energy development in their homelands. The following sections describe the participants’ experiences with the planning process and their energy priorities, focusing on community-led energy development.

#### 5.2.1 Inclusive Early Planning

The listening session participants, including several elders who work in community health and education, felt that equitable wind energy must be planned from the bottom up, starting with

community members rather than government officials. In part, their focus on community-based planning stemmed from a distrust of some government leaders to represent the best interests of “regular people.” Many were concerned that past energy and infrastructure projects had mostly benefitted only a small portion of the community, and they worried that even those benefits had come through the loss of land. One participant summarized the root of her distrust of some Navajo Nation officials this way: “Leaders have given away rights to our land.” The group also described how their interactions with the federal government had often felt misleading or even manipulative, offering promises of local progress that never materialized. Many saw the negative impacts of federal government processes and regulations as evidence of ongoing structural racism. As the discussion made clear, members of the community recognized these harms as part of a long history of economic extraction and neglect.

To the participants, local control, including work with some trusted government decision makers, seemed like best way to ensure that wind and other renewable energy development added to the community’s wellbeing. However, they also acknowledged the difficulties that Navajo communities face in planning processes, potentially including renewable energy planning. As several members of the group explained, Navajo people “are the most regulated people in the country,” dealing with many (sometimes conflicting or extremely restrictive) regulations related to land and water management and infrastructure development. Drawing on diverse personal and governmental experiences, the group described how the number and complexity of these policies can be an obstacle to reaching their goals as a community. Programs targeted at providing funding for planning and infrastructure projects can be difficult to access. Participants described how the staffing capacity and expertise needed to seek federal funding are often unavailable to communities. Furthermore, some Navajo communities may miss out on even more funding if their chapters (local government bodies) have not been certified under the Local Governance Act, either by choice or through challenges meeting certification requirements.

While the participants joked that they had been “conditioned to be patient,” they also recognized that at some point “patience runs out” while waiting for long-promised change. Many of the elders in attendance had worked for decades to promote local opportunities and protect the most vulnerable community members, successfully implementing small-scale housing and residential energy projects. They were ready to see more comprehensive technical assistance programs that would support their communities through funding and planning processes and boost local economic opportunities for young community members.

### **5.2.2 Partnerships With Trusted NGOs**

The participants’ interest in community-led energy planning included a central role for local organizations and leadership groups. Many of these groups are rooted in Indigenous practices, values, and cultural traditions, offering alternatives to government processes for facilitating community action and engagement. Members of one such group, Elders for Peace, attended the listening session and shared the importance of honoring traditional cultural spaces and methods when planning for the future. For instance, participants described how important sweat houses were to the community as places of healing and ceremony. As Navajo communities work to heal the health and environmental harms related to other forms of energy development, like regional uranium mining for nuclear projects, such places can also have a role in reflection and decision-making about future energy development.

The group also discussed the possibility of leveraging existing organizations to pursue funding options. While they recognized that many formal federal funding opportunities must involve the Navajo government, they reiterated their general distrust of government-led development processes and desire for more community-centered options. They felt that given adequate access to funding and capacity support, community-based organizations could deliver visible and immediate action around renewable energy access and energy security for community members. Participants wanted to ensure that they could move past the planning phase to work “rung by rung” toward building better energy and economic outcomes for their communities.

### **5.2.3 Audience-Friendly Communication**

According to participants, building trust around wind energy would require giving community members plenty of opportunities to learn about and discuss the technology and its potential impacts and benefits. Because the region’s Navajo community is spread out across large rural areas, this would require holding meetings, presentations, and listening sessions far beyond Gallup. Some participants suggested compiling resources that could be used by community leaders to host presentations and discussions in local chapter houses. Offering hybrid in-person and remote events could help to make these meetings even more inclusive—several attendees knew people who had been unable to travel to the listening session but would have joined a virtual option. For those who wanted to attend in-person, providing carpooling options or compensation for travel expenses, such as gas cards, could also help to expand access to these events. In addition to making the venue for discussions about wind energy accessible, participants emphasized the value of putting content about wind energy in plain language and including plenty of pictures, diagrams, and videos. Visuals were especially helpful for elders, some of whom do not speak English as a first language, because pictures “stay in your mind and can be translated” more easily. Additionally, participants felt that it was important to make clear connections between wind energy and the community’s ongoing health equity work. Understanding wind energy in terms of community health could help focus planning conversations on what wind energy could do for community members, rather than simply the electricity it could generate.

## **5.3 Identity and Agency**

Wind energy adds an additional layer to the community’s ongoing discussions about land status, government accountability, and the traumas created by past energy development and a lack of energy access. The following sections consider these layers and their connections to wind energy in more depth.

### **5.3.1 Sense of Ownership and Respect**

One of the top priorities to emerge from the listening session was local control of wind energy. Participants wanted to see communities guide wind energy development in a way that would benefit everyday people and vulnerable populations. They were interested in the possibility of community-scale distributed wind energy, especially in rural areas without current access to utilities. Throughout the discussion, they emphasized community ownership, which they felt would allow them to avoid any dependence on developers or governments for renewable energy access. While explaining their desire to operate independently from governments and outside companies, members of the group brought up a recent 2% tax on junk food in the Navajo Nation. Some worried that revenues from the tax were being mismanaged and that leaders were more

concerned about short-term monetary gain than long-term results. To keep renewable energy development from creating a similar dynamic, participants suggested finding means for regulating land use planning and development at a local level.

The group agreed that land status would be a critical consideration in community-focused wind energy deployment. Navajo communities' lands are often "checkerboard" (i.e., split into separated, noncontiguous parcels) and heavily regulated by different levels of government. Some Navajo chapter areas, for instance, contain large swaths of land that were once taken for railroad development and have yet to be transferred back to the Navajo. These and other lands are overseen by the U.S. Bureau of Land Management, which has sometimes exchanged land with Navajo communities under the Navajo Exchange Legislative Initiative. Participants felt that the Bureau of Land Management's mentality about Indian land had begun to shift in a positive direction, and they discussed how solar and wind energy development could "push the envelope" on Navajo land ownership and stewardship. Some Navajo chapters may choose to assist in community land management efforts by becoming certified, which could afford them more local-level government control. In some cases, establishing a 501(c)(3) nonprofit could also help Navajo communities access funding for their efforts, though these organizations can be difficult to maintain. Regardless of the methods used to obtain funding and land use approvals, participants felt strongly that energy should be developed in the places where it would most benefit community members.

### **5.3.2 Community Identity**

As was clear throughout the listening session, Navajo identities are culturally rich and filled with resilience and humor. Reducing the experience of Navajo people to a list of traumas does not accurately reflect the fullness of their history or their visions for the future. However, the traumas of past energy development, resource extraction, and political neglect are felt very deeply throughout the community and across generations, from children to elders. Decades of regional uranium mining for nuclear development (and now, hundreds of abandoned uranium mines) continue to expose Navajo communities to contaminated dust, creating a longstanding health crisis. Widespread lack of access to water, electricity, and heating utilities continues to affect many Navajo people's everyday lives, and some listening session participants shared their extremely difficult personal experiences with energy insecurity. Through tears, one participant captured the group's shared sense of frustration: "Why do we have to fight so hard for the things that other people just have?" The group members stressed the importance of communicating effectively about these experiences; they wanted their community's challenges to be recognized in broader conversations about the energy transition. The group, which included health equity and workers' rights advocates, also discussed how workforce factors, like more time off and financial stability, could help community members to manage the physical and emotional stress of energy-related traumas.

### **5.3.3 "NIMBY" Is Too Simplistic**

If local control of energy development was one of the listening session's top priorities, the other was environmental sustainability. Participants described the health of human residents and the health of surrounding lands, waters, and wildlife as one large, interrelated concern. They had personally experienced the continuing consequences of uranium and coal mining on both human and non-human populations. The listening session participants therefore wanted to move away

from extractive industries, and they felt that some of the younger Navajo Council delegates shared their perspective. Wind energy appealed to the participants in part because of its long history—people had been using the windmills as a source of energy for centuries—and also because it was “free of contaminants” that other sources of energy produced. However, past experiences with energy development had taught them to consider proposed projects carefully, regardless of the technology involved. Several participants mentioned, for instance, wanting to see studies on whether the motion of turbine blades had any effect on the dispersal of dust, to ensure that wind energy would not increase levels of uranium contamination in nearby communities. While they supported the growth of renewable energy, they wanted it to happen differently than other energy development had in the past. As one elder said, “Energy needs to come from our hearts to be successful—not the old way.”

## **5.4 Salient Benefits**

While participants were familiar with the concept of community benefits from infrastructure development, experiences with other revenue-generating projects had made many of them skeptical that governmental agreements would serve community members’ best interests. These next sections describe participants’ thoughts on the efficacy of benefit agreements in their community’s context.

### **5.4.1 Income and Tax Diversification**

The listening session participants were interested in renewable energy’s potential to create high-quality, well-paid jobs for young people, many of whom were leaving Navajo communities to find economic opportunities. They discussed the possibility of having local options for wind and solar energy career training, perhaps at Navajo Technical University. However, they were wary of development due to how other infrastructure projects had happened on Navajo land in the past. They described how, for example, a construction company operated by the Navajo government had failed to return its profits to community members. The lack of shared financial benefits from these types of projects had created intense anger and disappointment among participants, especially because much of the Navajo community continued to struggle with economic despair. One participant shared that over 6,000 Navajo families were experiencing food insecurity in the region. (While NREL’s background research did not find the source for this specific statistic, there is abundant documentation of food insecurity throughout Navajo Nation and in Navajo-majority communities [Bennion et al. 2022]). Though they trusted some local government leaders, participants worried that a large, government-managed wind energy development would lead to a similarly inequitable situation, and they “don’t want to help get someone else rich.” Some members of the group did consider tax exemptions for communities that used wind or other renewable energy sources as a possible method for delivering financial benefits directly to communities.

### **5.4.2 Community Benefit Agreements**

While the session attendees were interested in examples of community benefit agreements shared in the NREL team’s presentation, they reminded the NREL facilitators that wind energy development in their communities happened in a very different context. For instance, one participant quickly researched to find that the median income in our example community was nearly twice the median income in McKinley County. While the example community had negotiated a generous benefit agreement by organizing as a community and hiring experts, that



sort of time, capacity, and money was not as readily available in Gallup and other communities in the area. In addition to capacity and funding support to engage in planning processes, the group discussed the benefits of training and education programs that could give a boost to the local workforce. While they hadn't heard of any community benefits related to the nearest wind energy project, they liked the idea of having funding for wind energy job training, starting in high school. Training programs would need to address current challenges in the education system, like low reading levels and graduation rates. Some of the group members felt that such an opportunity could help young community members “remember that they are capable.”

### **5.4.3 Distribution of Benefits**

One of the central questions participants had about renewable energy was, “Who is it being built for?” So far, utility-scale wind energy and solar energy projects had not made energy more affordable in the community, and many community members' homes were not connected to the grid in the first place, as power lines were “too expensive to build out to remote areas.” While many in the community had heard about the benefits of residential solar energy, participants said that it was still largely unavailable there. Even if it were to become available, they worried about the ability of some community members, like elders living in remote places, to maintain their own solar panels. Due to the access and affordability issues related to both utility- and residential-scale energy, the group was very interested in microgrids and community-scale projects, with the goal of creating energy for locals rather than selling electricity to the grid. Focusing on distributed, community-level energy options was their solution for addressing a mismatch between their energy goals and those of the energy system as a whole: While they wanted to improve energy equity in their communities, they felt that the energy system was largely designed to make money. Participants wanted to make sure that wind energy projects built near them would take care of their community first, rather than last. They described “wind energy equity” as using wind energy projects to help people get resources that are tailored to their specific, immediate needs, rather than propping them up with a new set of “phone books.”

### **5.4.4 Life Cycle Impacts**

In McKinley County, community members had concerns related to different stages of wind energy development, from siting through decommissioning (or repowering). Outside of the listening session, some community members had expressed concern that a nearby wind project had been sited in an area where the turbines obstructed views of Tsoodzil (Mt. Taylor), one of the four sacred mountains and an important place for ceremony. Listening session participants were also concerned that the construction of wind energy projects would bring in a large external workforce while failing to create local jobs. Other infrastructure projects, like a recently constructed pipeline, had primarily employed workers from outside the community. For the wind project's operations stage, participants also wanted to know whether the turbines could withstand harsh environmental conditions, like tornadoes, while keeping impacts on local wildlife minimal. Finally, the group was curious to learn more about decommissioning and repowering processes; would the blades be recycled? Having already felt the effects of leftover energy infrastructure in the past, like the abandoned uranium mines, they wanted to avoid adding a wind turbine blade “graveyard” to their list of local environmental concerns.

## 6 Conclusion

The key themes of wind energy equity that WEEES had previously identified—Early Planning and Capacity; Identity and Agency; and Salient Benefits—appeared to have relevance to each community’s experiences. The full meaning and relative significance of each theme varied across communities, accounting for differences in historical, cultural, political, and economic contexts. For example, while each community saw value in meaningfully engaging in local wind energy decision-making processes, community control was the overarching priority of the participants in Gallup, New Mexico. Their personal experiences with the health consequences of extractive energy technologies and inequitable energy access, as well as a distrust of government processes, had made community-based energy planning a critical priority. While participants in Elizabeth City also distrusted government processes and wanted more community-based control over wind energy development, they primarily channeled their concerns into a desire for measurable job growth and community benefit agreements, drawing on positive experiences with other workforce training programs. Community members in Bloomington-Normal also prioritized workforce training programs, but their emphasis was on increasing access to climate-related jobs for vulnerable groups, as informed by their advocacy for Illinois’ Climate and Equitable Jobs Act legislation. A summary of some of the primary similarities and differences between the communities’ wind energy experiences and priorities is provided in Table 1.

Similar variations in priorities and focus can be expected to occur across any set of communities—and very likely within a single community, depending on who participates in the discussion. Shared themes will not provide a one-size-fits-all summary of wind energy equity considerations. Instead, they can offer helpful connections for sharing knowledge across communities and guiding broad efforts toward improving equity in wind energy deployment. For NREL, defining, validating, and expanding key themes of wind energy equity can help to inform future research and technical assistance programs.

	Bloomington-Normal	Elizabeth City	Gallup
Desire for clear benefits for “ordinary people”	X	X	X
Feeling of disconnection from local wind energy projects		X	X
Concern about the accountability of local or Tribal governments during wind energy development		X	X
Lack of energy access for many community members			X
Need for more affordable energy rates and reduced energy burdens	X	X	X
Experience with dense wind energy development	X		
Interest in community-scale wind energy projects	X		X
Desire for equitable jobs and training programs in wind energy	X	X	X
Potential for both offshore and onshore wind energy projects		X	
Interest in local research on the environmental and community impacts of wind energy	X	X	X

**Table 1. Comparison of Experiences Shared in the Listening Sessions**

## 6.1 Areas for Future Research

### 6.1.1 Regulatory and Policy Landscape Analyses

Participants in each of the communities described the importance of policy in determining the scale and shape of potential wind energy projects. They also all described uncertainty associated with navigating relevant laws and regulations. Research to compile (or in some cases, update) geographically specific information on wind energy policy landscapes could provide a useful tool for communities looking to understand the wind energy development process. NREL’s database of local solar and wind energy siting ordinances, for example, demonstrates the value of collecting and maintaining local-level data. Such research would also lay the groundwork to consider whether and how policies and regulation affect wind energy projects’ equity outcomes.

### **6.1.2 Outcomes of Community Benefits**

Only a few participants knew whether their communities had benefit agreements from local wind energy projects, and many noted that it was difficult to tell whether these agreements were producing their intended effect. Case study or database research into the mid- to long-term effects of community benefit agreements would help to evaluate which types and characteristics of community benefits are linked to the most successful community outcomes. Presented in a user-friendly and accessible format, this research could form the basis for a decision-making tool for local governments and community members, helping them to identify the most effective strategies for promoting an equitable distribution of wind energy benefits in their communities.

### **6.1.3 Continuing Local Projects and Partnerships**

WEEES enabled NREL to define internal best practices for research involving partnerships with communities. The findings produced by these partnerships have been well received, creating value both for NREL and partner communities. Building from these experiences, NREL could continue to develop mutually beneficial, codesigned projects with communities. These efforts allow for the representation of perspectives that are often sidelined or generalized in broader energy discussions.

### **6.1.4 Support for Community Energy Planning**

Throughout the WEEES project, community partner organizations and participants expressed strong interest in community-led renewable energy planning. Partners encouraged NREL to continue supporting these efforts through technical assistance programs and to work to make the programs more accessible to community stakeholders. In some cases, for instance, community members felt that requirements to recruit local government entities to an applicant coalition could make participation in technical assistance programs difficult. Future program tasks could include exploring options for building community capacity and expanding participation from community-based organizations.

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