



The Science of Siting Clean Energy

Bridging Planning, Policy, and Practice

Clean Air Task Force & Graham Sustainability Institute,
University of Michigan

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CLEAN AIR
TASK FORCE



GRAHAM
SUSTAINABILITY INSTITUTE
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Introduction

Building clean energy infrastructure at the pace and scale needed to meet state and federal climate targets faces many challenges, but in recent years, these challenges have shifted from technical and economic in nature toward a complex mix of social and institutional barriers. It is increasingly clear that finding communities that are willing and able to host large renewable energy projects, particularly wind and solar projects, will be essential for meeting climate goals. While many communities continue to say “yes” to wind and solar projects, there are growing numbers saying “no,” calling into question whether current siting practices and policies can support the pace of clean energy deployment called for by policymakers. **New understandings and approaches are urgently needed to plan, site, and build clean energy in ways that garner and sustain community support for hosting these climate-friendly technologies at scale.**

Clean Air Task Force, in partnership with the University of Michigan’s Graham Sustainability Institute, hosted a two-part workshop series to bring together perspectives, knowledge, and insights among practitioners and researchers who have firsthand experience working on getting contentious things built. The goal of the workshops was to identify paradigm-shifting opportunities and solutions for building community acceptance of wind and solar infrastructure. These workshops were hosted over two sessions in Ann Arbor, Michigan, in the Fall of 2023.

This document summarizes the key takeaways from the workshops, primarily focusing on new ideas developed by the group. Workshop participants believe that ideas presented here, with further refinement and coordination, could offer a productive path forward that would both support procedurally just decision-making and accelerate the deployment of renewable energy infrastructure.

We purposefully convened individuals with a variety of perspectives and insights. Such a mix of perspectives is invaluable in fostering collaborative learning and innovation within our field. Recognizing the diversity of perspectives present, it is important to emphasize that not all ideas offered here reflect consensus or agreement among the entire group. This document aims to reflect the breadth of discussion that took place, rather than provide an endorsement of those ideas by the Clean Air Task Force, the University of Michigan Graham Sustainability Institute, or the workshop participants. That said, there was significant enthusiasm among participants about the potential impact these ideas could have on addressing the challenges currently faced in building the scale of clean energy necessary to meet climate targets.



Participants

The workshops included 25 participants spanning clean energy siting, community acceptance, and related research and practice, with the goal of building interdisciplinary connections between and amongst experts in the fields. Practitioners included developers, community engagement specialists, rural coalition builders, advocates, and state siting experts. Researchers include rural law experts, rural sociologists, planners, energy researchers, and political scientists. A few participants identified as a “bridge” between research and practice. The following individuals were present:

- Alex Breckel, Clean Air Task Force
- Annie Eisenberg, West Virginia University
- Ben Hoen, Lawrence Berkeley National Laboratory
- Bradley Pischea, Land & Liberty Coalition
- Dahvi Wilson, Siting Clean
- Doug Bessette, Michigan State University
- Drew Christensen, Apex Clean Energy
- Ian Latimer, NYSEDA
- Jeff Danielson, Clean Grid Alliance
- Jeffrey Jacquet, Ohio State University
- Jessi Eidbo, Clean Air Task Force
- Jim Hamilton, Stakeholder Capital Consulting
- Madeleine Krol, University of Michigan
- Maggie Allan, University of Michigan
- Natalie Manitus, Clean Air Task Force
- Nelson Falkenburg, Clean Air Task Force
- Nicole Pavia, Clean Air Task Force
- Parrish Bergquist, University of Pennsylvania
- Robert Goodspeed, University of Michigan
- Samantha Frick, Pivot Energy
- Sarah Lee, University of Michigan
- Sarah Mills, University of Michigan
- Sherrie Gruder, University of Wisconsin-Madison Extension
- Suzanne Tegen, Colorado State University
- Tamara Ogle, Purdue Extension

Participation in the workshops should not be considered an endorsement by the participants or their affiliated organizations of the entirety of the perspectives and ideas presented here. In assembling these workshops, we intended to create a space where diverse perspectives from various geographies, backgrounds, and fields could converge. While the discussions within this small group have been valuable, we acknowledge that there are still numerous voices missing, resulting in a gap in diversity across demographics, expertise, and geographies. Recognizing the need for a more comprehensive dialogue, we wholeheartedly believe that bringing these ideas to a wider group is imperative for making them stronger and more impactful.



Framing and Gathering Purpose

The following statements were co-created by the convening organizations before the workshops began to serve as the gathering purpose and framing statement that would be used to design the workshops and unite participants around a shared vision.

Gathering Purpose Statement

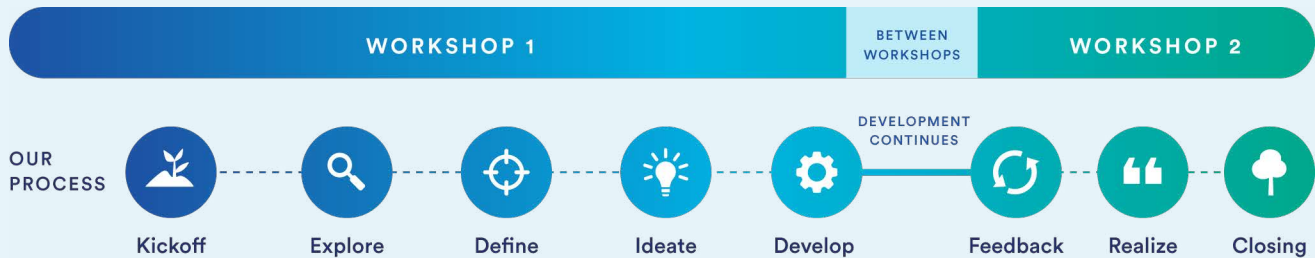
Our purpose is to bring together perspectives, knowledge, and insights among practitioners who have firsthand experience working on getting contentious things built, with the goal of identifying paradigm-shifting opportunities and solutions for building community acceptance of rapid siting.

Framing Statement

The workshops will explore the efficacy of where and how siting decisions are made and approaches to planning and community engagement that would best support just decision-making and accelerate renewable energy deployment.

Workshop Process

The framing statement informed the two-part workshop process. The first session focused on exploring the efficacy of where and how siting decisions are made, defining questions that could be used to develop new approaches, and beginning to develop some ideas on innovative opportunities or solutions that could improve siting outcomes. In between workshops, participants worked in small groups to research and reflect on these ideas. The second workshop was spent further developing and refining the ideas into concepts that could be developed into projects.



Bright Spot Themes

During the first workshop, attendees read and analyzed “bright spot” case studies that represented an approach or solution that, despite its imperfections, exhibits meaningful progress forward from the status quo. While some of these bright spots were drawn from the renewable energy space (e.g., wind energy development in Denmark), they also included examples of siting nuclear waste storage, cannabis retailers, and a small business incubator in a rural community. From across these cases, **the following themes were identified as contributing to the success of some or all the cases.**

- Local champions helped lead success
- The community had a strong local identity
- The initiative brought tangible economic development
- Government support aided the initiative
- Local institutions were ready for engagement
- The initiative encouraged local ownership
- The community had experience and familiarity with the form of development
- Local solutions contributed to a broader cause
- The community had the spirit of entrepreneurship
- A trusted third party was brought in to provide information
- Development served as a form of justice
- Negotiated community benefits were part of the development
- Policies structured to provide a broader mandate with flexibility at local levels
- The initiative took place in an environmental justice community
- Community consent was present

Paradigm-Shifting Opportunities & Solutions

Participants worked in small groups to develop the following ideas that could serve as innovative opportunities or solutions that would **best support just decision-making and accelerate renewable energy deployment**. Each idea stems from a “How Might We” (HMW) question developed by the group. These HMW questions were developed to make the bright spot themes more actionable and to guide the development of new ideas and approaches. The group came up with over 25 HMW questions and voted to narrow in on the following four during the workshop. The additional HMW questions, listed in the appendix, which were not focused on in this workshop offer a good starting point for additional exploration. Each idea presented below lists the associated HMW question, a brief articulation of the problem space, and a description idea developed by the working group. It is important to note that these ideas are not mutually exclusive but can serve to be complementary to each other.

IDEA 1

Innovative Policy Frameworks, Focused on a Fair Share Policy

How might we build broader coalitions of support for state policy that meet the mandate with flexibility paradigm?

Key challenges to clean energy siting involve achieving equitable distribution of the benefits and burdens of clean energy infrastructure across diverse communities and balancing local preferences with the state and national need for renewable deployment. New thinking is required to account for growing restrictions on development in states with local siting authority, to address inequities in current reform approaches that reduce local control, and to keep pace with a rapidly evolving energy landscape that requires innovative solutions to tackle deployment obstacles.

The Idea

A “fair share” approach to renewable energy siting policy, where every part of a state hosts locally appropriate clean energy and other climate-friendly solutions, might offer a compelling new policy option for policymakers who recognize the need to enable renewable deployment in their states. Borrowed from existing policy approaches to affordable housing, industrial facility siting, and other domains, this approach to clean energy siting could better distribute the burdens and benefits of clean energy development across communities.

A fair share framework would:

- Establish statewide clean energy buildout targets and mandate that each locality assume its fair proportion of capacity needed to meet the overall goal.
- Create a state entity to coordinate and oversee the fair share allocation process.
- Implement complementary policies to encourage community acceptance and maximize local economic benefits.
- Provide technical assistance, planning grants, and financial incentives to aid localities in planning for their fair share of renewable projects.
- Establish clear siting guidelines, decision timelines, and legal recourse options.

IDEA 2

Aspirational Planning Approaches

How might we empower local communities to self-determine what it is they desire from a renewable energy project, without significantly raising renewable energy cost?

Many communities are not equipped to proactively consider how clean energy may be a part of their long-term vision in current planning processes, especially when communities are confronted with this question only when a project has already been proposed. This reality, combined with poor community engagement practices that lack opportunities for meaningful community input, leaves projects more susceptible to political whims and delays. New thinking is needed to establish improved systems, processes, and approaches that allow for thoughtful evaluation, stakeholder involvement, and a common understanding of renewable energy more generally before moving to the decision-making phase about specific renewable energy projects. These improvements nurture more fair and informed consideration of projects in communities.

The Idea

Off-the-shelf “modules,” adapted from diverse, existing methods in visioning and scenario planning available to communities that outline a clear series of steps to help them discern, discuss, and evaluate future visions relevant to a potential development project. Components of the module include the **3 P’s**:

- **Practitioners:** On-the-ground resources to guide host communities through the process.
- **Process:** A defined, but somewhat customizable, series of steps that allow host communities to envision and evaluate projects. Research indicates that there are already several processes out there to accomplish these goals.
- **Potential:** This is a fundamental key to success. By first collaboratively identifying what a host community’s potential is, they are better able to discern how a proposed development project may help them realize that potential.

An initial step would be to assess the prevalence and success of existing visioning processes to determine which models provide the best outcomes and refine approaches into one best suited for this intention. These modules could then be piloted across a cohort of communities.

IDEA 3

Creating New Local Structures, Task Forces, Key Local Features

How might we cultivate local capacity with trust, expertise, and longevity to get lots of projects built in ways that benefit communities?

Current energy and land use planning and energy siting processes often face capacity constraints at local levels, a lack of trust of external entities within communities, poor timing of interaction and community engagement practices from developers, and the absence of holistic community benefit considerations. New thinking is needed to shift the conversation from binary decisions on a project-by-project basis to broader collaboration and engagement between communities and developers and improved processes for determining community benefits.

The Idea

Augment the capacity of local leaders to increase engagement in both renewable energy planning and community benefit agreements development by creating local task forces and connecting them with locally trusted facilitators and technical assistance. The following is a list of ideas of actions that could be taken by higher government entities, academic institutions, and third-party organizations.

- Provide support for local elected officials, zoning commissioners, and staff on high-conflict planning and zoning decisions.
- Provide facilitation and technical assistance administered by a trusted entity, i.e., DOE R-STEP, Extension, County, or Town Associations. Pilot a program for extension offices to provide facilitation and technical assistance to engage local governments in siting processes across a cohort of communities.
- Develop an informed, participatory community decision within a planning or siting process for clean energy.
- Professionalize facilitation through certifications within law, planning, and finance fields.
- Develop a model to measure the costs and benefits of a project to inform community benefits agreements.



IDEA 4

Using Policy to Incentivize New Ownership Models

How might we encourage new models of ownership for renewable energy projects?

Most ownership models in place today for renewable energy projects primarily follow utility or corporate ownership structures; these structures offer little opportunity for input from the community and limited distribution of benefits to the community. At the same time, communities lack the capacity, resources, and finance needed to develop and own projects outright. New thinking is required to develop meaningful new ownership models that are feasible for communities, which could lead to greater acceptance while also empowering communities and offering greater benefits.

The Idea

Develop co-ownership or co-management models that can be adopted in a variety of contexts that take the financial and technical burden off communities, while giving them both perceived and real shared ownership of the project, including input on decision-making and profit-sharing. Meaningful and impactful involvement in the planning process is key.

- Conduct a literature review and case studies on existing models and laws around community ownership as well as potential partner or shared owner configurations.
- Assess the efficacy of existing models and how they are perceived by community members.
- Consider revised regulation around tax benefits for community ownership.
- Develop a toolkit of community ownership options.

Unresolved Tensions

Throughout the workshops, participants uncovered many tensions that remain unresolved but were noted and held. These tensions represent the variations in participants' perspectives and approaches to the challenge, the difficulty of reconciling the best path forward with many conflicting goals and objectives, or questions that feel unaddressed. **Some tensions included:**

- The tension between the urgent need for rapid and widespread infrastructure deployment and the speed at which trust and meaningful engagement with communities is built.
- The tension of whether “no” to hosting clean energy infrastructure is an acceptable answer from communities given the urgent need for rapid decarbonization.
- The tension of whether ideas should aim for incremental change or complete paradigm shift.
- The tension of how to recognize that every energy source has local positives and negatives and how to mitigate local impacts while not letting the perfect be the enemy of the good.
- The tension between the urgent need for rapid and widespread infrastructure deployment and ensuring adequate environmental protection and conservation processes.
- The tension between framing the problem about “siting,” which implies a top-down perspective, and the perspective of communities seeking to achieve greater local sustainability using infrastructure and other approaches in concert.

Some areas were flagged for needing further thought and exploration:

- Clarifying language used in practice and its implications (Ex. Wind “farm” vs. “park,” siting vs. hosting, consent vs. community acceptance).
- Further discussing what community acceptance means, how to determine when community acceptance is achieved, and who represents “community.”

Conclusion

The challenges faced in scaling clean energy infrastructure deployment have evolved into a complex mix of **social and institutional barriers that require new and innovative approaches** for meaningful engagement with and support from communities that will host projects.

The Science of Siting workshops sought to confront these challenges head-on, bringing together diverse perspectives to identify paradigm-shifting opportunities to support just decision-making and accelerate renewable energy deployment. Further work, by a broader group of actors, is needed to more fully develop, refine, and build off the ideas presented in this document. It is our hope that these ideas will spark ongoing conversations, research initiatives, and pilot projects.

Project Team

Clean Air Task Force

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Facilitators

Carlotta Pham, Experiential Workshop Designer and Facilitator

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For more information on these workshops, contact Natalie Manitius at infrastructure@catf.us

Appendix

Additional “How Might We....” Questions

HMW use federally funded economic initiatives to build support for renewable infrastructure siting?	HMW build bridges between distressed communities and funding sources for clean energy?	HMW solicit and identify communities who want to host projects?	HMW encourage groups of small and large landowners to collaborate to negotiate renewable energy development?	HMW encourage new models of ownership for renewable projects?
HMW build broader coalitions of support for state policy that meet the mandate/flexibility paradigm?	HMW connect community leaders, including in non-climate motivated communities, to share lessons and learnings?	HMW engage private developers in solutions that inspire local development?	HMW define and measure community readiness for renewable development?	HMW promote community benefits that enable the community to get what they desire without significantly raising the cost of renewable energy?
HMW accurately and honestly measure/define local support for renewable energy development?	HMW invite artists and multidisciplinary perspectives into the renewable energy space?	HMW build local leadership with shared local vision?	HMW create a compelling common narrative around renewable energy?	HMW seed and initiate new ownership structure pilots in the U.S.?
HMW determine when and how economic factors move the needle on local siting issues?	HMW define and provide a framework for community collaboration and factors to get to consent?	HMW establish an environmental justice/ social equity program in each state while balancing local priorities vs. broader social inequities?	HMW define energy justice in the context of utility-scaled renewables in non-marginalized communities?	HMW cultivate local capacity with trust, expertise, and longevity to get lots of projects built in ways that benefit communities?
HMW empower local communities to self-determine what it is they desire from renewable projects, without significantly raising renewable energy cost?	HMW develop new process for negotiating community benefits using expert third party mediators or facilitators?	HMW craft negotiations so that development is seen as a justice initiative and is an opportunity for justice in non J40 communities?	HMW regulate predatory developers who do not care about or are hostile to community benefits?	HMW create community benefits and policy that are quantifiable and fair (a value-based fair)?