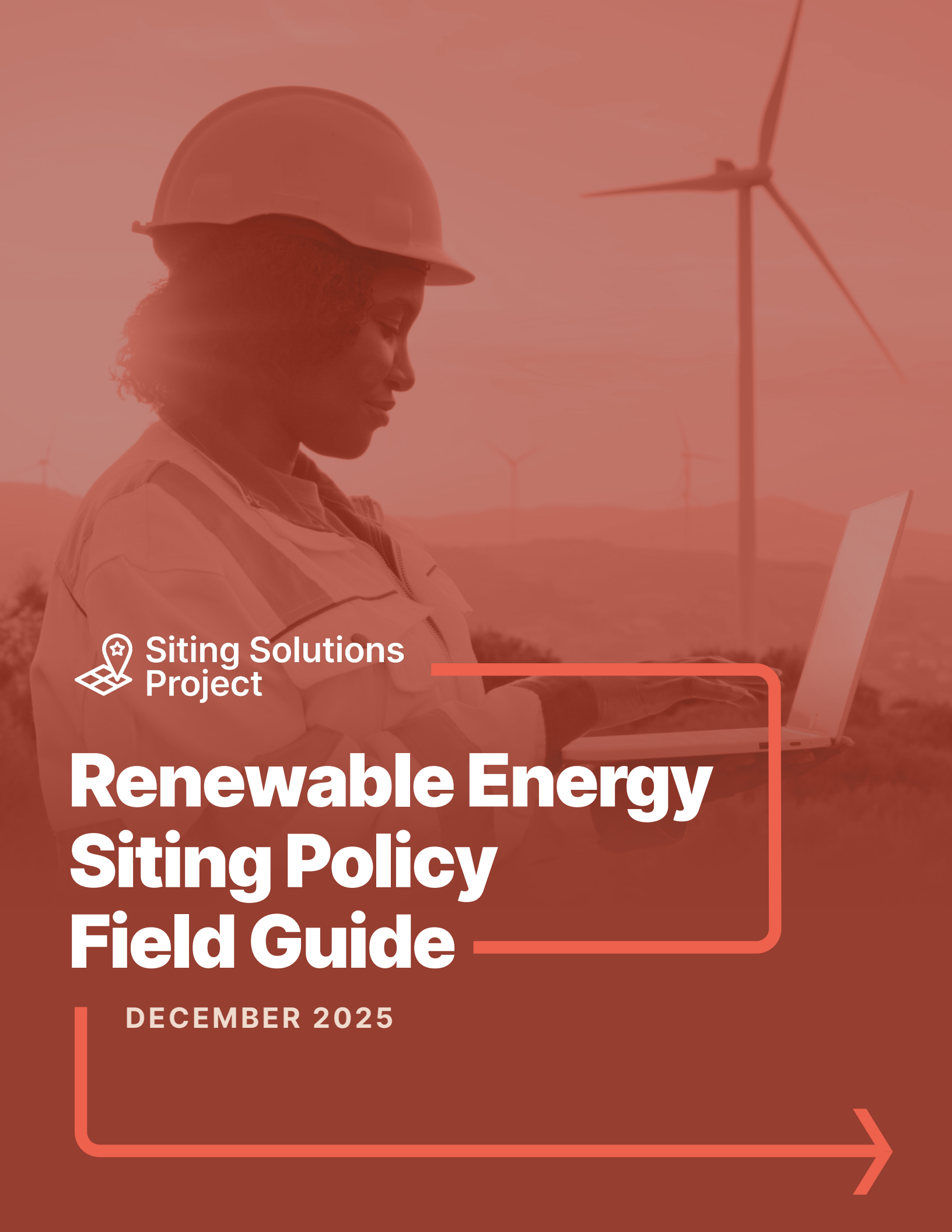

Siting Solutions Project

# Renewable Energy Siting Policy Field Guide

DECEMBER 2025

## ABOUT

# Siting Solutions Project

The Siting Solutions Project conducts research and engages with stakeholders to identify the most promising siting policies to maximize the benefits clean energy provides — for communities, the environment, and the electric grid. We support a wide variety of stakeholders and state policymakers across the political spectrum.

Our work, up to this point, has focused exclusively on describing siting policy as it is. This report is the first that offers our perspectives on how siting policy ought to be designed. This report draws from external research, collaborations with partners like Data for Progress and Strategic Economic Research, and several years of our own internal analysis on this topic. We intend this report to be used by state policymakers, agency officials, and advocates to critically examine existing siting approaches and imagine productive reforms.

For inquiries or to provide feedback, please contact:
siting@cleantomorrow.org

www.cleantomorrow.org/policies/siting

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# Executive Summary

The United States faces a critical challenge in deploying renewable energy at the pace and scale necessary to meet surging energy demand and address soaring electricity rates. While technological and economic barriers have largely been overcome, regulatory obstacles—particularly restrictive local permitting processes—have emerged as the primary constraint to clean energy deployment.

This report presents an actionable framework for state policymakers and advocates to design effective renewable energy siting reforms based on a set of six principles and four workable models from across the country. Drawing from extensive analysis of recent state-level reforms, as well as surveys of state policymakers and stakeholders, we identify what works, what doesn't, and how to adapt policy solutions to different state contexts.

## 6 Principles for Effective Siting Policy

**Effective siting policies must balance competing interests while advancing clean energy deployment. We identify six principles for effective policy design and key elements to make them actionable:**

### 1 Clear Rules

Create predictable, transparent permitting processes with consistent standards.

### 2 Timely Decisions

Establish enforceable timelines that provide certainty for all stakeholders.

### 3 Fair Process

Base decisions on objective criteria rather than political pressure.

### 4 Economic Opportunity

Protect the rights of landowners, workers, and communities to benefit from clean energy development.

### 5 Community Benefits

Ensure meaningful local input and tangible benefits for host communities.

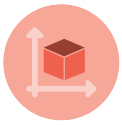
### 6 Land Stewardship

Plan for and manage impacts on agricultural lands, wildlife, and habitat.

## Four Siting Policy Models that Work

Rather than prescribing a one-size-fits-all solution, this report presents four policy models that can be tailored to each state's unique circumstances. We also provide implementation guidance and examples where states have put these models into practice, often combining them into comprehensive siting policy frameworks.

**The Safety Net Model:** Projects are sited locally unless local policies are too restrictive, triggering state-level permitting.



**The Threshold Model:** Local governments site smaller projects while state agencies handle larger projects above defined capacity thresholds.

**The Guardrails Model:** Projects are sited locally subject to statewide standards that set a ceiling on local requirements.

**The Referee Model:** Projects are sited locally, but developers can appeal unreasonable restrictions to courts or state agencies.

## Critical Implementation Factors

Policy design alone does not guarantee success. This report identifies three phases critical to effective reform:

**Before passage:** Build broad and diverse coalitions, conduct transparent stakeholder processes, and consider electoral timing

**After passage:** Ensure adequate state and local administrative capacity, engage in rulemaking and implementation, plan for enforcement, and prepare for legal challenges

**Future iterations:** Establish clear metrics to measure policy outcomes, require regular review by third parties, and maintain flexibility to adapt

Siting policy also rests in a web of other related policies, including taxation, environmental protection, and public safety; pulling one thread tugs on all the others. Effective reforms will address the many threads by bringing them all into alignment.

## The Path Forward

The combination of rapidly increasing energy demand, rising utility rates, and the economic viability of cheap wind, solar, and battery storage creates both urgency and opportunity for siting reform. However, local restrictions increasingly block renewable development and organized opposition to renewable energy is intensifying, sometimes funded by fossil fuel interests. State policymakers must be prepared for sustained opposition while building durable pro-reform coalitions.

The technology is ready, the economics are favorable, and successful policy models exist. What remains is the political will to act strategically. By learning from successful state examples, applying proven design principles, and maintaining focus on effective implementation, state policymakers can create the frameworks needed to unlock America's renewable energy potential and meet the nation's urgent energy needs.

## INTRODUCTION

# Why States Should Improve their Renewable Energy Siting Policies

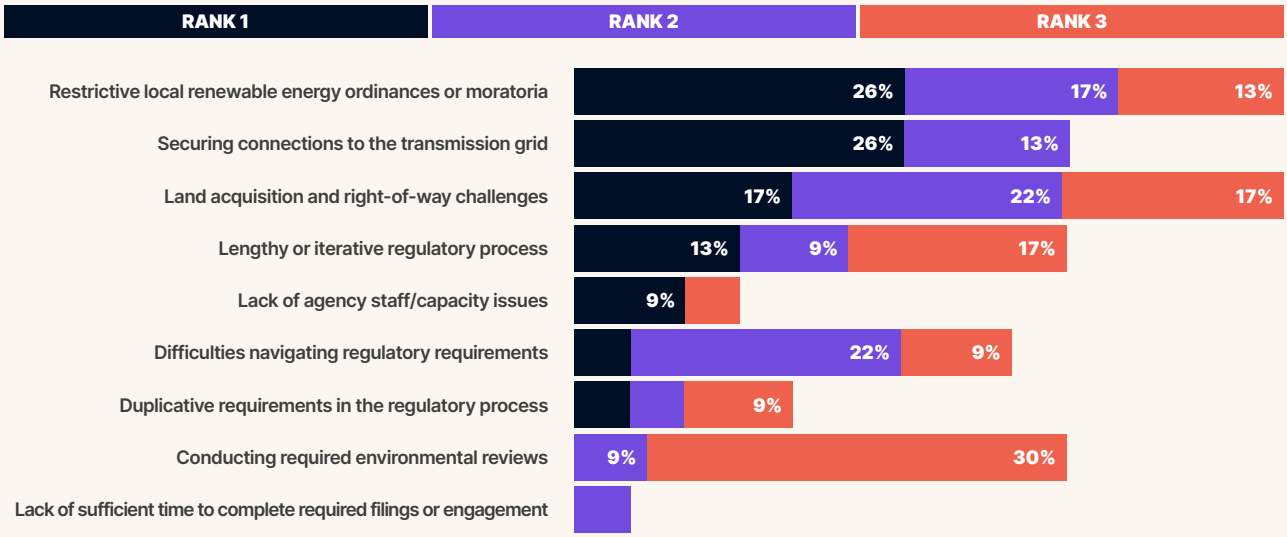
## Restrictions on Clean Energy Siting Increase Electricity Costs

Demand for electricity is surging in America to its fastest pace in decades.[1] The AI-fueled data center boom, electrification of cars and buildings, and a rise in industrial manufacturing are driving demand for energy. As energy demand increases, it puts upward pressure on electricity rates, which, along with increasing investments in transmission and distribution infrastructure, results in higher household energy bills. And Americans are feeling the pinch; recent polls show energy bill increases are a major source of household budget stress in all regions and for most demographic groups across the political spectrum.[2, 3, 4]

The pace of adding new resources to the grid lags current need and demand projections. Wind, solar, and battery storage—the fastest technologies to build and lowest cost options in many parts of the country—wait years for permitting and interconnection.[5] While there has been significant progress in renewable energy deployment over the past decade, in part due to the substantially decreased costs of wind and solar technologies, there are a number of roadblocks to meeting the Unites States' electricity demands and addressing energy affordability.[6]

The principal cause of slower annual additions, as reported by renewable energy developers, is restrictive local ordinances, inefficient permitting processes, and a rise in community opposition.[7, 8] A recent survey of state policymakers by The Siting Solutions Project and Data for Progress also identified restrictive local ordinances as the most significant barrier to renewable siting (Figure 1).[9] In the past three years, the number of counties restricting wind and solar construction has doubled to 20 percent, making roughly 17 percent of the United States' total land mass subject to a renewable energy ban or restriction.[10] Local opposition and community organizing are also halting a number of projects.[11] As a result of these headwinds, developers canceled one-third of wind and solar projects between 2018 and 2023, representing 36 gigawatts and billions of dollars of unrealized energy development.[12]

**Figure 1:** State policymakers and agency staff rank restrictive local ordinances as the most significant barrier to renewable energy deployment.




*May 30-July 10, 2025 survey of 23 renewable energy siting stakeholders*

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## Federal Policy Headwinds Increase the Importance of Effective State and Local Permitting

The federal government has historically supported the growth of wind and solar industries in the United States through sustained innovation investments and tax credits for wind and solar, but the wild swing of the political and policy pendulum under the current administration highlights the importance of effective state and local permitting processes. The Inflation Reduction Act (IRA) and the Infrastructure Investment Jobs Act (IIJA) increased investment in clean energy projects, helped modernize grids, and provided tax credits that spurred new energy infrastructure manufacturing.[13] But the One Big Beautiful Bill Act (HR 1) will phase out many of these tax incentives—some experts are predicting the annual solar, wind, and battery additions will be halved, resulting in 300 gigawatts less solar and wind on the grid by 2035.[14] In addition, the Trump Administration has sought to block clean energy via discretionary permitting processes while subsidizing or mandating continued coal and natural gas generation. Members of Congress have also promised upcoming federal-level permitting reform, but the timeline and the impact on clean energy projects remain uncertain.[15]

**The opportunity and stakes for improved clean energy siting at the state and local level have never been higher.**

# Local Siting Processes are Hard to Get Right

Renewable energy siting occurs principally at the hyper-local level in most states, with developers required to navigate hundreds or thousands of distinct permitting requirements at the county and municipal level. The National Renewable Energy Laboratory (NREL) alone catalogs 840 solar regulations and 560 wind regulations across local jurisdictions.[16] There are thousands more local governments that have jurisdiction over wind and solar resources but do not have any regulations on the books.[17]

**This fragmented approach of local siting creates several critical problems:**

**1 Lack of Expertise and Resources:** Most local governments lack the staff capacity and financial resources to fully adjudicate competing claims and make informed decisions about complex energy infrastructure projects.[18] The result is often arbitrary or uninformed decision-making that fails to balance legitimate community concerns with broader energy system needs.

**2 Inconsistent and Unpredictable Outcomes:** The patchwork of local regulations, and inconsistent application of standards within jurisdictions, creates uncertainty for developers, who cannot predict where projects will be welcomed and where they will face arbitrary permitting barriers.[19] This uncertainty increases project costs and development timelines, ultimately raising energy costs for consumers.[20]

**3 Unrepresentative Democratic Processes:** Research shows that small oppositional minorities often have outsized influence in local permitting processes, creating what scholars term a "democratic deficit," where broader community interests are subordinated to narrow opposition voices.[21] This puts marginalized rural communities, which have elevated rates of socioeconomic risks and energy burden, at risk of missing out on the benefits and opportunities brought by renewable energy, further entrenching the inequities they face.[22]

**4 Organized Opposition and Misinformation:** Communities across the political spectrum are increasingly opposing clean energy projects, often due to a lack of trust in developers and permitting authorities, a mismatch of perceived impacts and benefits received, changes to rural character, and political ideology.[23] However, in some cases opposition is led by well-organized, fossil industry-funded misinformation campaigns that have operated for decades.[24, 25, 26] Due in part to the "democratic deficit" mentioned above, local permitting processes provide ripe opportunities for organized opponents to effectively stop project development, even when they represent a small minority of community opinion.[27]

**5 Limited Tools to Gain Local Economic Benefits:** The Supreme Court's interpretation of the U.S. Constitution limits local governments' options for ensuring projects proposed in their communities deliver meaningful benefits and minimize impacts. Local governments are particularly hamstrung in states that have not proactively passed laws that create options for significant economic benefits to accrue to project host communities. Absent these options, restrictive zoning, coupled with special use permits, is often used as an informal means to block clean energy projects that fail to gain sufficient community support.[28]

### Constitutional Limitations on Local Permitting Conditions

The Supreme Court's interpretation and precedent regarding the fifth amendment's "takings clause" limits the conditions a local government can place—and thereby the concessions and benefits a local government may extract—when permitting a project. The two-part test to evaluate takings determines whether a government's condition has "essential nexus" to a legitimate interest and "rough proportionality" to the nature and extent of the condition.[29] In other words, concessions and benefits must be tied directly to the project's impact and be proportional to that impact. If, for example, the primary impact of a wind facility is visual, the local government cannot condition project approval on funding for a new fire truck, or a per-MW fee.

Despite these obstacles, developers often prefer the option of siting and permitting projects through local government processes rather than state processes. Project development with a willing and interested local government is often more efficient, in both time and money, than state-level permitting, which can be bureaucratic and time-intensive.[30] And local governments still offer the best venue for surfacing and addressing community concerns in most cases. However, as the obstacles described above become more entrenched and wide-spread, policymakers need novel policy solutions to advance the projects necessary for affordably meeting rising energy demand.

## State Policy Solutions are Key to Improving Deployment Outcomes

Ignoring or overcoming each of the problems associated with local permitting in every jurisdiction is neither realistic nor sustainable, but state-level siting may not be possible or even preferrable. Additionally, state-level siting may not necessarily be possible or even preferable. Rather, comprehensive siting policy reforms offer the most promising path forward because they can:

**Create** consistent, predictable permitting frameworks across jurisdictions

**Ensure** decisions are made by qualified experts with appropriate technical knowledge

**Balance** local concerns with statewide energy policy objectives

**Improve** the efficiency of permitting processes without sacrificing public input, or the review needed to protect public interest

**Provide** clear legal frameworks that reduce litigation risk and project delays

**Signal** to developers and industries state-wide growth opportunities

Several states have recently passed reforms demonstrating the potential for well-designed, comprehensive siting policies to accelerate renewable energy deployment while maintaining community support. While it is too early to tell the impact of these reforms, as many are still being implemented, the opportunity is clear.

To be sure, siting policy reforms can also degrade the quality and character of clean energy permitting and thereby slow the deployment of cost-effective electricity resources, inadvertently or maliciously. Opponents of clean energy were particularly active in their attempts to pass malicious state-level siting and permitting laws in 2025. The Siting Solutions Project's recent "State of Siting" report, which provides a round-up of siting legislative action nationwide in 2025, found legislators in 47 states introduced more than 300 bills that would impact renewable energy siting.[31] The Siting Solutions Project's recent "State of Siting" report found that state houses considered twice as many bills designed to restrict renewables as bills meant to improve the siting process (see Figure 2).

**States that recently passed reforms**

**2021**

New York

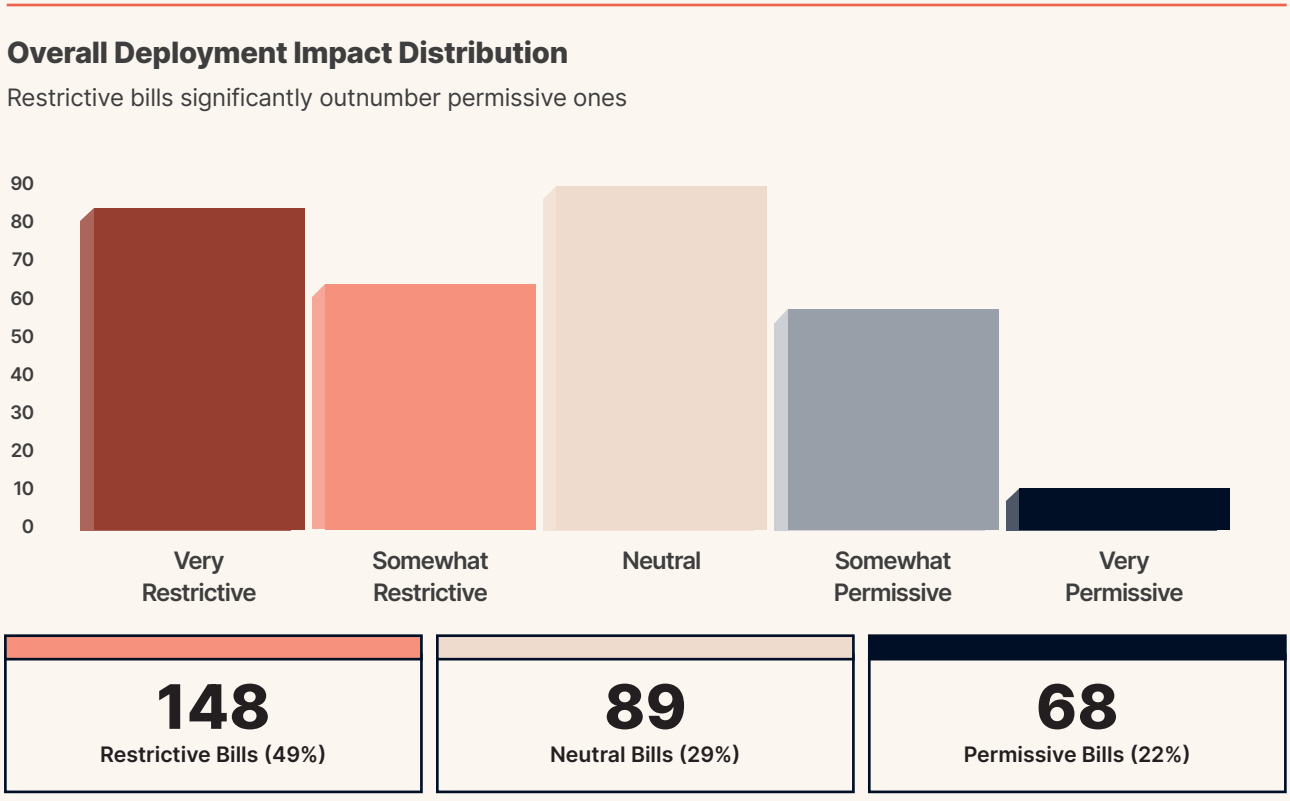
**2023**

Illinois
Michigan
Washington

**2024**

Massachusetts
Minnesota

**Figure 2:** Overall deployment impact distribution of siting-related legislation introduced in 2025.



# PRINCIPLES FOR Effective Siting Policy Design

Effective renewable energy siting policies must balance the rights of landowners with role of government, parse the jurisdiction of state and local officials, and contend with a multitude of other competing objectives and stakeholder interests. Based on our analysis of successful policy approaches and stakeholder feedback, the following six design principles emerged as essential for effective siting policy frameworks.

Yet principles alone are helpful only to an extent—discrete solutions are needed to translate principles into policy. To achieve the six siting policy principles, policymakers and advocates must incorporate policy elements into siting laws. For each siting policy principle, we describe key policy elements that help to animate them. These elements can be applied to existing siting policy frameworks or combined into highly effective siting policy frameworks as discussed in the section that follows.

## 6 Principles for Effective Siting Policy

- Clear Rules
- Timely Decisions
- Fair Process
- Economic Opportunity
- Community Benefits
- Land Stewardship

PRINCIPLE #1:

# Clear Rules

**Developers, communities, and investors should be able to understand clearly and in advance what the permitting process will entail and what standards will be applied. Permitting processes should be clear, predictable, scaled appropriately, consolidated where possible, and consistently applied.**

Predictability reduces transaction costs, enables better planning, and increases investor confidence in renewable energy markets. It also helps communities better engage in the development process. **To implement this principle, siting policies should:**

- Establish clear, standardized application processes and requirements
- Protect vested rights of a project in the permitting queue by limiting the ability for rules to change after a clearly defined grandfathering milestone (filing notice of intent, application submittal, etc.)
- Provide optional pathways for permitting at the state or local level, with choice of venue determined by the developer, or state permitting authority
- Define transparent criteria for permit approval or denial
- Consolidate permits and agreements (environmental, road use, land use, etc.) into a single approval issued by the permitting authority (i.e. “one-stop shop” permitting)
- Ensure consistent application of standards across similar projects and jurisdictions
- Create tiered permitting systems scaled to project size, impacts, and land use context

PRINCIPLE #2:

# Timely Decisions

**Siting and permitting decisions should be made expeditiously. Renewable energy developers, property owners, government officials, and community members all benefit from enforceable timelines that deliver definitive decisions.**

Whether the outcome is permit approval or denial, moving efficiently creates more certainty for landowners, the renewable energy industry, and community members. A speedy process also reduces project risk, opposition, misinformation and disinformation, and the opportunity for protracted litigation. **To implement this principle, siting policies should:**

- Establish clear, enforceable timelines with defined shot clocks for key milestones (including completeness determinations), consequences for missed deadlines (such as constructive approval), and provisions for reasonable extensions when requested by either party
- Set a pre-application period and process to facilitate early collaboration and consultation between the permitting authority and developers
- Designate an efficient appeals pathway to avoid protracted litigation—either at the state supreme court (most efficient route), circuit court, administrative law judge, or via a state agency like the public utilities commission
- Provide local governments with financial assistance, technical assistance, and implementation tools to expeditiously permit projects
- Establish state-level coordination roles to provide technical assistance to permitting authorities and shepherd projects through the review process

PRINCIPLE #3:

# Fair Process

**Siting decisions should be based on objective criteria rather than political pressure. Limiting case-by-case discretion and maximizing transparency reduces risk for developers, builds community trust, and provides a clear basis for resolving disputes.[32]**

This principle ensures that permitting decisions are based on objective analysis of project impacts and benefits rather than political popularity. It requires both institutional design and procedural safeguards. **To implement this principle, siting policies should:**

- Ensure decision-making is informed by technical experts and not just elected officials
- Establish clear, objective criteria for evaluating a project's health and safety impacts using uniform standards based on the best available science and zoning best practices
- Tailor standards to specific technologies while allowing flexibility for project-specific design solutions
- Design transparent processes that safeguard against undue political influence
- Limit appeals to technical and legal issues
- Set permitting fees based on a published fee schedule and/or reasonable and actual costs of processing applications

PRINCIPLE #4:

# Economic Opportunity

**Landowners, workers, developers, and communities should not be denied economic opportunities from clean energy projects that protect health, safety, and public welfare.**

This principle recognizes that renewable energy development typically occurs on private land with willing landowners who receive economic benefits from hosting projects. Economic benefits also accrue to workers, local businesses (predominantly during construction), and local taxpayers. Policies should protect these economic opportunities while ensuring appropriate safeguards. **To implement this principle, siting policies should:**

- Prohibit bans on renewable energy development
- Prohibit or limit exclusionary zoning for renewable energy
- Limit the number and length of moratoria
- Require that restrictions on renewable energy development serve legitimate public purposes (health, safety, welfare)
- Encourage local purchasing of materials and services, preference local hiring where possible, and encourage collaboration between developers, local chambers of commerce, and trade associations
- Establish clear criteria for what constitutes "reasonable" restrictions

PRINCIPLE #5:

# Community Benefits

**Siting decisions should be based on objective criteria rather than political pressure. Limiting case-by-case discretion and maximizing transparency reduces risk for developers, builds community trust, and provides a clear basis for resolving disputes.**

This principle ensures projects are built for more than just efficiency and speed; the benefits of projects accrue beyond individual landowners, uplifting the entire community. Policies that achieve this principle create more durable politics for renewable development in the long term by providing effective venues for community engagement and distribution of benefits. **To implement this principle, siting policies should:**

- Solicit meaningful community input in the project development period after landowner agreements are secured, but prior to submission of the final permitting application, so that community feedback may be considered in the project design process
- Require that community engagement plans, or summaries of community outreach, be submitted to the permitting authority during the permitting process, including a justification of any changes to the project in response to community engagement
- Ensure dedicated, stable tax revenues to communities by authorizing a payments in lieu of taxes (PILOT) program or property tax guarantee; consider incentivizing more permissive siting standards through access to higher PILOT payments
- Enable local governments to enter into Economic Development Agreements, which are negotiated with developers and can include both siting and payment provisions, providing both developer certainty and tangible, tailored local benefits[33]
- Clarify a local government or community organization's ability and process for entering into host community agreements
- Where local officials are not making the decisions, provide local government representatives with intervenor funding to engage effectively in the permitting process

PRINCIPLE #6:

# Land Stewardship

**Permitting authorities should plan for and manage the impacts of renewable energy projects on communities, agricultural lands, wildlife, and habitat.**

Renewable energy is a crucial part of climate mitigation, providing outsized benefits for wildlife and sensitive habitats over the long-term. At the same time, solar, wind, and battery facilities also have place-based environmental and community impacts during construction and operation. **To implement this principle and manage these foreseeable impacts, siting policies should:**

- Encourage siting on previously disturbed lands (mines, landfills, brownfields, etc.), through financial incentives or expedited permitting, while also allowing for greenfield development
- Incentivize co-location of energy projects with other land uses, such as farmland (agrivoltaics) or pollinator habitat, through preferential tax treatments or other incentives
- Require reasonable decommissioning and site restoration to ensure land can return to pre-development condition, maintain long-term property values, and enable project financial viability
- Establish best management practices and technology-specific siting guidelines at state fish and wildlife agencies and/or departments of environment and agriculture
- Adopt a tiered, risk-based consultation framework with state fish and wildlife agencies—ranging from voluntary for low-impact projects to mandatory for projects potentially affecting sensitive habitats or threatened species
- Coordinate and streamline state and federal environmental reviews, for example by allowing a National Environmental Policy Act (NEPA) review to satisfy state environmental requirements
- Encourage post-construction impacts monitoring through simple reporting tools, project assurances, and state agency staff support

# Siting Policy Models that Work

While the previous section identifies distinct elements of effective siting policies, this section identifies how states have combined many of these elements into state siting policy frameworks.

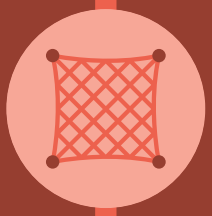
The laboratories of democracy have generated several siting policy frameworks effective for enabling renewable energy deployment while maintaining appropriate community engagement and environmental protections. The best frameworks are those that balance the role of the state and local permitting authorities by placing guardrails on local siting or creating hybrid state-local permitting pathways. The most effective siting policy frameworks also incorporate the principles described above by providing economic opportunity, achieving timely permitting decisions, and laying out clear rules in a fair process, all while maximizing benefits for communities and carefully stewarding the landscape.

No policy framework is a silver bullet and none of the following model policy frameworks should be adopted whole cloth. Instead, it's common for the four exemplary models to be combined to achieve different policy goals, depending on the state's environmental and political context. First, policymakers must decide whether to site projects using a state or local pathway, either through physical project criteria (Threshold Model) or by the decision of a developer or state entity (Safety Net Model). Then, policymakers must decide how to implement the state or local pathway to deliver on the principles of siting, using either standards set by the state (Guardrails Model), or through a definition of "reasonableness" by which local governments must make siting decisions (Referee Model). States looking to reform their siting policies should start with these model frameworks and tailor them to their specific environmental and political context. In this report, we describe each model in detail, give real-world examples from leading states, and provide recommendations for tailoring each model to the principles of good siting policy.

## 4 Exemplary Models

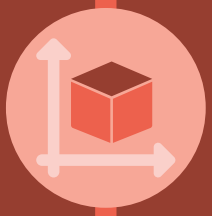
### The Safety Net

Where projects are sited locally unless local policies are too restrictive or locals opt out, triggering state-level siting.



### The Threshold

Where local governments site smaller projects and state governments site larger projects based on capacity thresholds.



### The Guardrails

Where projects are sited locally subject to statewide standards that set a floor and ceiling on local requirements.

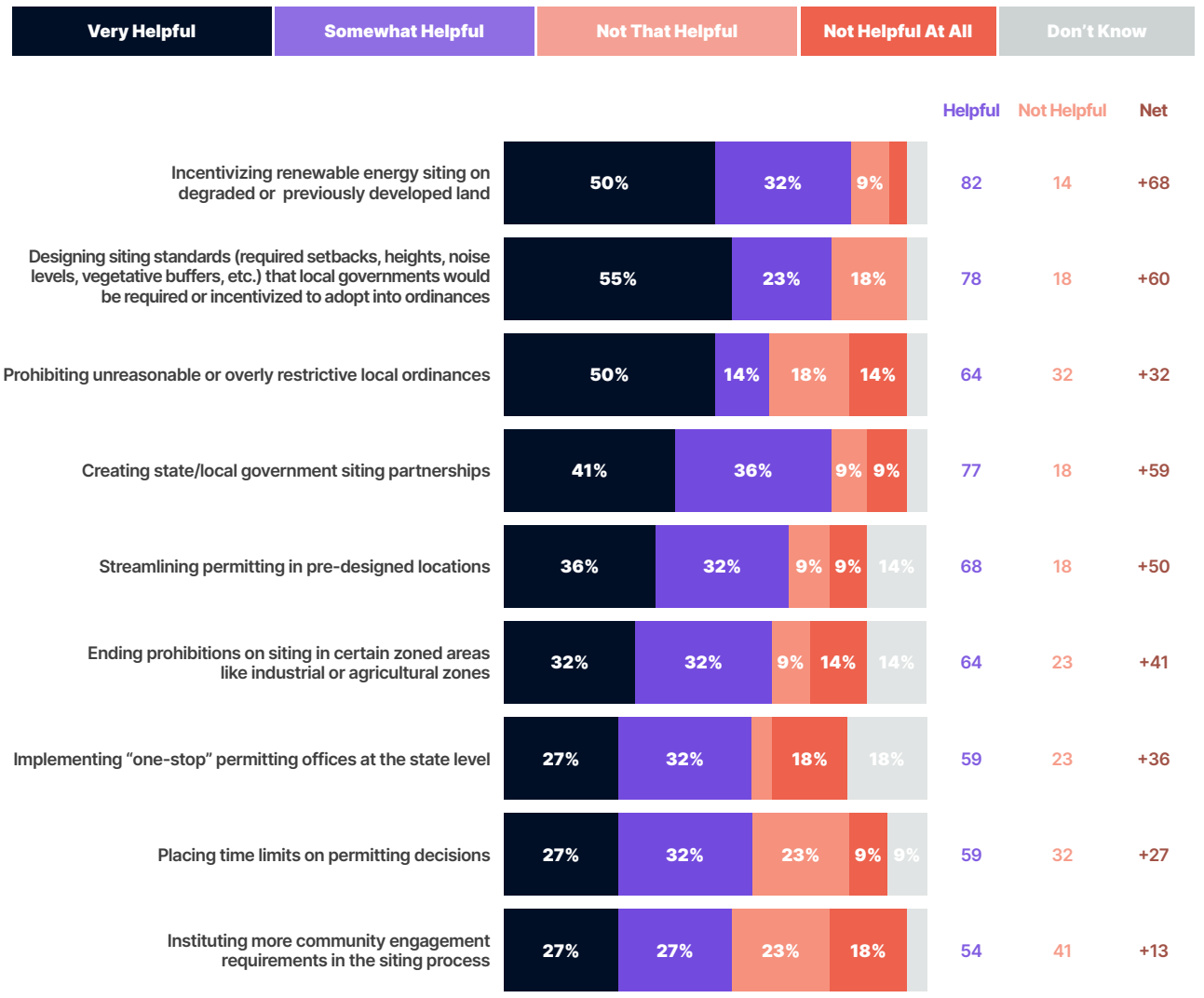
### The Referee

Where projects are sited locally, but developers can appeal overly restrictive rules to courts or state agencies for review.

## What Siting Policy Professionals Think about Model Policy Frameworks

Participants in our survey of state-level policymakers highlighted specific policies to improve siting and address local obstacles. Their top recommendations are reflected in the exemplary policies we highlight in this report: "Mandating or incentivizing statewide standards for local government adoption" feature prominently in the Guardrails Model, "Prohibiting overly restrictive ordinances" is the essence of the Referee Model, and "Creating state/local government siting partnerships" is a common element of the Safety Net Model.

**Figure 3:** Policies Aimed at Local Barriers to Renewable Siting, Like Model Siting Standards or Prohibiting Restrictive Local Ordinances, Were Seen as Most Helpful




*May 30-July 10, 2025 survey of 22 renewable energy siting stakeholders*

## The Safety Net Model

Our research consistently finds that local governments and project developers alike prefer to conduct siting at the local level when local permitting processes follow our principles for effective siting policy design. Yet not all local governments want to be responsible for siting projects, local preferences may not align with state needs, and many do not have effective siting processes in place. The Safety Net Model is designed to allow local siting where it can proceed productively and provide a state siting option when local governments prefer or refuse to adopt reasonable processes and standards. The Safety Net Model is also designed to set a high—yet still attainable—bar for entry into the state process, incentivizing local siting and permitting as the priority, while providing the state pathway as a last resort.

One of the primary drawbacks of this approach is that it requires significant state resources to conduct state-level reviews (which are, hopefully, rarely used), and the multiple permitting pathways may introduce complexity and confusion. Yet this novel approach, adopted by Michigan, Washington, and California, is among the most promising policy frameworks for states that would like to maintain primary local siting authority yet ensure projects can ultimately get sited and built.

### The Safety Net Model in Practice:

## Michigan

Michigan's groundbreaking 2023 law (HB 5120, PA 233) created a compliance-based framework that allows local governments to retain control over permitting large renewable energy projects if they adopt a renewable energy ordinance no more restrictive than state siting standards.[34] The law establishes detailed standards for setbacks, noise limits, and other technical requirements. Local governments that fail to adopt compliant ordinances may have the developer by-pass them and instead get a permit from the state.

**The Michigan approach includes several innovative features:**

- **Financial incentives:** Through the Renewable-Ready Communities program, local governments that permit projects locally receive $5,000 per MW instead of the typical $2,000 per MW per jurisdiction if the project is approved through a state-based pathway.[35]
- **Flexibility for developers:** If local ordinances are not compliant with state standards, or if the local government denies the project, then developers can opt for the state siting process.
- **"Workable" ordinance option:** Developers may work with communities to develop ordinances that deviate from state guidance but are still acceptable for their specific projects.
- **Community benefits:** A developer may enter into a Community Benefits Agreement (CBA) with local organizations if the host community refuses to enter into a host community agreement. The minimum for CBA payments is set at the same level as the state-based pathway ($2,000 per MW).

**Policymakers wishing to adopt the Safety Net model should consider the following opportunities to maximize principles of effective siting design, in addition to the general policy elements discussed above.**

- The Safety Net Model protects **economic opportunities** of clean energy development by providing multiple permitting pathways and investment-friendly standards.
- Policymakers should ensure **timely decisions** by creating definitive shot clocks and timelines for local and state permitting processes with clear consequences for overshooting, such as constructive approval.
- The Safety Net Model provides **clear rules** through explicit siting standards and processes at the local and state levels. Policymakers should ensure these standards and processes are clear, explicit, and complete.
- A **fair process** based on transparency at the state and local levels, paired with objective permitting criteria, is crucial for success under the Safety Net Model.
- Ensure **communities benefit** whether the project is sited locally or with the state; provide enhanced community benefits to local governments and financial incentives to project developers to encourage productive local siting.
- Policymakers should ensure adequate **land stewardship** measures for both local and state siting pathways by including standards of approval that take these into consideration.

## The Threshold Model

Local governments often lack the expertise and capacity to permit and site large energy infrastructure projects, but are often the best venue for efficiently permitting smaller projects. By setting bright line thresholds, a larger project may be sited at the state level, while a small project is sited at the local level. Typically, these thresholds are based on the size of an energy project's electrical output in megawatts, though some states base thresholds on the amount of acreage a project will occupy, the number or turbines, or other metrics. Often, requirements and thresholds differ across technologies.

There are several drawbacks to this approach that should be addressed in policy design. The biggest challenge is that this approach may encourage project sizing or sequencing to avoid the typically more strenuous state review.[36] Additionally, developers typically have less discretion over the venue for their review, unless there are pathways to opt-in or opt-out of state-level review. Finally, establishing an appropriate threshold level is challenging and may lead to arbitrary or outdated regulations.

The Threshold Model in Practice:

## New York

New York's state Office of Renewable Energy Siting and Electric Transmission (ORES) has contingent state authority, which means a state agency has exclusive siting authority for projects above a certain size threshold. In New York, solar and wind projects >25 MW, as well as co-located battery storage and major electricity transmission projects, are sited and permitted by ORES.[37] Municipalities retain authority over siting smaller energy facilities.

**The New York approach includes several innovative features:**

- **Intervenor funding:** ORES requires developers make per MW deposits into a Local Agency Account for use by local governments and community intervenors in the public hearing process.[38]
- **Brownfield siting incentives:** New York created a 6-month expedited permitting timeline for brownfield projects at ORES, and a locally-initiated, state-led "Build-Ready Program" to transform underused land into renewable energy facilities.[39]
- **Uniform Standards:** ORES has adopted uniform permitting standards and conditions for all projects under its siting process.

The Threshold Model in Practice:

## Massachusetts

Massachusetts passed SB 2967 "An Act Promoting the Clean Energy Grid" in November 2024, providing a comprehensive reform of the state's siting policies.[40] Under this policy, local governments have primary siting authority for clean energy projects less than 25 MW, while projects above that threshold are sited and permitted by the Energy Facilities Siting Board. The new law also includes a consolidated permit and appeals process at both the local and state levels, as well as clear timelines and shot clocks for permitting decisions, including constructive approval if timelines are missed. Finally, the law allows local governments to request the Energy Facilities Siting Board review any permit in lieu of local review.

**The Massachusetts law includes several innovative features:**

- **Community Benefit Plans:** The Office of Environmental Justice and Equity is tasked with developing standards and guidelines for community benefit plans and cumulative impact analyses.
- **Dashboard:** The Facility Siting Division shall maintain a publicly accessible, real-time dashboard for all clean energy infrastructure projects proposed at both the state and local levels, including information on applications filed, duration of reviews, and staffing levels.[41]
- **Technical Support to Local Governments:** The Division of Clean Energy Siting and Permitting will create standards and criteria for small clean energy projects, which local governments must adhere to, and provide technical support and assistance to local governments.

### How to maximize principles of good siting policy for the Threshold Model:

- Protect **economic opportunity** by ensuring that strategies exist to preserve "reasonableness" (see Referee Model) and "timeliness" in both the state and local venues with siting authority.
- Ensure **timely decisions** at both the local and state levels by codifying a completeness determination period, shot clocks for issuing a final permitting decision, and consequences for missed timelines. For projects under state-level review, which are larger and typically have greater impacts, consider a longer review period for the more intensive state-level review.
- Lay out **clear rules** by consolidating state and local reviews into one-stop-shop processes at each level of government.
- Establish a **fair process** through uniform permit standards and conditions for all projects at both levels of review.
- Provide **community benefits** by incentivizing some combination of utility bill credits, a payment in lieu of taxes (PILOT) program, and host community agreements.
- Require **land stewardship** through consultation with state agencies for large projects, or projects built in sensitive environments.

## The Guardrails Model

Uncertainty makes it harder to do business in any industry. In many states, clean energy project developers have hundreds of local government siting rules and procedures to navigate which can be changed at any time. Those same rules that confound project developers also make it hard for property owners to know if or how they can welcome new commercial activity on their land. And communities don't know if they will get a voice in the siting process.

The Guardrails Model provides explicit, substantive, and uniform siting standards applicable across an entire state. The state, through legislation or subsequent regulatory proceedings, establishes setback distances, height limits, noise requirements, and other project design standards that local governments adopt into compliant zoning ordinances. Statewide siting standards are among the most definitive and effective policies for predictable, uniform, and impartial clean energy siting, while still having projects reviewed at the local level.

One challenge of this approach is that local governments are on the hook to incorporate the state siting standards into their zoning rules. Particularly for smaller zoning authorities with few resources, proactively incorporating these standards—especially if they are required to do so outside of an anticipated or regular zoning update process—can be costly and time consuming. Furthermore, if standards are set to minimize discretion—as they should be to enforce predictability—local governments may be left with the dirty work of conducting the public hearings for projects that they have little ability to shape.

Another critical challenge of this approach is the "whack-a-mole" issue. A local government seeking to restrict renewable development will likely find a way by exploiting loopholes or exceptions, therefore requiring constant adjustment of the guardrails, or the inclusion of a referee.

The Guardrails Model in Practice:

## Illinois

Illinois' novel 2023 law, HB 4412, establishes substantive and uniform siting standards for all utility-scale wind and solar projects.[42] It prohibits local governments from banning solar development on agricultural or industrial zoned lands and directs counties to incorporate siting standards into existing zoning ordinances, or to promulgate new ordinances. The law also provides a "ceiling" on several requirements, including minimum height limitations, maximum setback distances, maximum shadow flicker, and minimum sound requirements.

**The Illinois approach includes several innovative features:**

- **Required Approvals:** If a project meets the standards dictated by the law, then it must be approved by local officials. Local governments cannot reject projects that meet the setback standards
- **Agricultural Impact Mitigation Agreement (AIMA):** As a form of standard-setting for construction, decommissioning, and restoration, Illinois has established a process for landowners and developers to enter into AIMAs, which ensure that the land affected by energy infrastructure projects is restored to a pre-construction state.[43]
- **Environmental Review:** A county may require adherence to Illinois Department of Natural Resources natural resource reviews and demonstrated avoidance of protected lands.

### How to maximize principles of good siting policy for the Guardrails Model:

- Protect **economic opportunity** by requiring local governments to allow renewable energy in areas zoned for agricultural or industrial uses, thereby protecting the rights of landowners to develop their land.
  - Policymakers can further protect economic opportunity by streamlining reviews and permitting based on project size by allowing by-right permitting for small projects if they meet a set of standard conditions.
- Ensure **timely decisions** with shot clocks for public hearings and local government permitting decisions, while also providing technical assistance to support officials in adapting their ordinances.
  - Policymakers can enable timely decisions by providing an implementation toolkit to assist local governments with incorporating state standards into local zoning ordinances, which requires substantial capacity and resources.
  - Policymakers can enable timely decisions by providing more robust technical assistance through a state agency or third-party for developing permitting programs and processing permits upon local government request.
- Require localities with noncompliant standards to adopt **clear rules** that adhere to state law, ensuring predictability and certainty for developers and landowners.
  - Policymakers can adopt clear rules by carefully defining key terms in legislation such as "more restrictive" and "reasonable fees" to avoid loopholes and litigation.
  - Policymakers can adopt clear rules by directing projects spanning multiple overlapping jurisdictions to designate a lead siting authority and a single permitting process.

- While under normal circumstances the Guardrails Model provides a **fair process** given the uniformity and predictable of siting standards, the lack of a formal appeals process means that noncompliant local government standards or processes must be addressed through costly and lengthy litigation.
  - Policymakers can provide a fair process by creating a formal appeals pathway through the utility regulatory commission or state energy agency, by having appeals fast-tracked to a designated court proceeding, with clear timelines for resolving appeals.
- Unlike state authority models, which lend themselves more readily to public engagement processes through a state agency, providing avenues for distributing **community benefits** in state standards is more complicated.
  - Policymakers can maximize community benefits by requiring developers hold pre-application community meetings to the local government permitting authority, along with a response matrix of concerns raised and project modifications to address community concerns.
  - Policymakers can maximize community benefits by pairing reforms under the Guardrails model with complementary tax reforms that ensure ample community economic benefits.
- **Land stewardship** in the Guardrails Model requires indirect methods when compared to a different approach, like the Safety Net Model.
  - Policymakers can further land stewardship goals by enabling counties to require state agency natural resource reviews to avoid impacts on protected lands and high-priority habitats.

## The Referee Model

The diversity of local circumstances makes it nearly impossible for state lawmakers, agency officials, or regulators to know in advance precisely which siting standards strike the right balance of commercial, community, and government interest—particularly for states with highly diverse geographies. In these cases, it may be best to let the state play an arbiter role, calling balls and strikes only when needed.

The Referee Model does just that for clean energy siting: it keeps the siting process at the local level but creates a review process to ensure local siting standards and conditions are justified and appropriately applied. Lawmakers must specify who the referee is, what standard they must use to review the actions of local siting officials, and what happens if there is a foul on the play. The referee may be a state agency, a regulator, or a judge. The state can set broad guidance for review—typically barring any permitting conditions that do not serve a compelling health, safety, or public welfare rationale. Local siting decisions that are deemed incompliant with this state guidance may be sent back for reconsideration or over-ruled.

Over time, decisions by the referee can become de facto statewide standards: if a highly restrictive noise ordinance was found to be unreasonable in one community, siting officials elsewhere in the state will know they have a high burden of proof to justify standards as or more stringent for projects in their jurisdictions.

One advantage of the Referee Model is that it can be implemented with minimal disruption to business-as-usual in many states: local governments may not need to make any proactive change to their zoning procedures, and the state—either an agency or court, depending on how the legislation is written—are only needed when called upon. One downside of this model is that disputes over reasonableness are typically settled through litigation, which may take valuable time to resolve and deepen distrust between developers and communities.

The Referee Model in Practice:

# Three-State Comparison

A total of nine states have incorporated the Referee Model into their laws through a reasonableness standard. In some states these laws have not been tested, while in others litigation or state-level review is common. We compare three states—Wisconsin, Nevada, and Massachusetts—to explore how each applies the Referee Model.

**Massachusetts** law broadly prohibits local zoning or regulations that would restrict solar development. The law states that "no zoning ordinance or by-law shall prohibit or unreasonably regulate the installation of solar energy systems or the building of structures that facilitate the collection of solar energy, except where necessary to protect the public health, safety or welfare." This provision has been in place for 40 years and was enforced by the courts five times between 2022 and 2023.[44, 45] For example, in Tracer Lane II Realty, LLC v. City of Waltham, the Massachusetts Supreme Judicial Court ruled that City officials violated the reasonableness standard by prohibiting an access road on residentially zoned land for a one-megawatt solar project on commercially zoned land.[46] Additionally, the Court found the City's zoning code "unduly restricts" solar energy systems by limiting development to land zoned for industrial purposes, which is only one to two percent of the land area.[47]

**Innovative feature**

All zoning by-laws in Massachusetts require review by the state Attorney General. The Attorney General may disapprove any zoning by-law inconsistent with state law.[51, 52]

In **Wisconsin**, the Public Service Commission (PSC) has authority over siting and permitting wind projects larger than 100 MW; smaller projects require approvals from local governments (see Threshold Model). Wisconsin law prohibits local governments from placing restrictions on solar energy systems, or on wind energy systems if they are more restrictive than rules promulgated by the PSC (see "Guardrails model," above), unless the restrictions: (1) serve to preserve or protect public health or safety, (2) do not significantly increase the cost of the system or significantly decrease its efficiency, or (3) allow for an alternative system of comparable cost and efficiency. In Wisconsin, the PSC arbitrates appeals of project decisions and unreasonable restrictions on wind projects sited at the county level.[48] Decisions by the PSC are subject to judicial review. Recent cases, including Marathon Wind, LLC v. Town of Brighton and Town of eau Plaine, are testing the durability of Wisconsin's Referee model, with a circuit court judge upholding restrictive ordinances in two counties on procedural grounds.[49, 50]

**Innovative feature**

The Wisconsin law directed the PSC to develop siting regulations through the Wind Siting Council, which local governments must then adhere to when permitting projects under their authority.

In **Nevada**, local governments are prohibited from adopting ordinances or regulations which would prohibit or unreasonably restrict the use of a wind or solar system.[53] Although local ordinances are limited by law and cannot be "unreasonable," counties can deny permits for wind projects for a variety of reasons due to a 2017 law (SB 314).[54] For example, localities may deny a permit for a wind project if the system represents a health or safety risk to the public, or if the project is not compatible with the character of the area.[55] For solar, the statute defines "unreasonable restrictions" to include any requirement or restriction that "decreases the efficiency or performance of the system by more than 10 percent," which is a unique approach. The Referee in Nevada is the Director of the Office of Energy, which hears appeals for any unreasonable restrictions on solar projects.[56]

**Innovative feature**

The Nevada law sets a clear threshold of 10 percent performance reduction for determining an unreasonable standard and designates a state agency as the arbitrator.

## How to maximize principles of good siting policy for the Referee Model:

- The Referee Model safeguards **economic opportunity** by protecting against unreasonably burdensome zoning ordinances.
- Ensure **timely decisions** with shot clocks, constructive approval, and a streamlined judicial review process.
- "Reasonableness" standards can be ambiguous and difficult to enforce and require uncertain, costly, and time-consuming judicial or state review to adjudicate. However, the record of state-level reviews can create de facto standards resulting in **clear rules** and more definitive expectations for all parties over time.
  - Policymakers can adopt clear rules by explicitly defining terms like "unreasonable regulation" and "reasonable restrictions" to reduce confusion during judicial reviews.
- The Referee Model provides a **fair process** by limiting arbitrary or politically motivated restrictions on project development that do not serve a compelling public interest yet maintains local flexibility to address local preferences and legitimate concerns.
  - Policymakers can ensure a fair process by creating an appeals pathway with dispassionate review by the courts or state agencies, using clearly established criteria.
- Protections for public safety, health, and welfare in the Referee Model should be paired with **community benefits** to ensure locals are protected from project impacts and receive maximum benefit.
- Policymakers should consider exceptions under the Referee Model for reasonable restrictions that allow for **land stewardship** and environmental protections where warranted.

# The Virtuous Cycle of Siting Policy

Successfully developing and implementing renewable energy siting reforms requires careful attention to not only policy design, but also political strategy, implementation, and evaluation. Based on analysis of successful and unsuccessful reform efforts across multiple states, several key implementation principles emerge.

**BEFORE THE POLICY**
Stakeholder Engagement and Political Strategy

**AFTER PASSAGE**
Design for Implementation Success

**FUTURE ITERATIONS**
Measuring Outcomes and Making Adjustments

## Before the Policy: Stakeholder Engagement and Political Strategy

**Build Broad Coalitions Early:** Successful siting reforms typically involve extensive stakeholder engagement before legislation is introduced. This should include not only environmental groups and renewable energy developers, but also agricultural organizations, labor unions, local government associations, and business groups that benefit from clean energy development.

**Conduct a Transparent Process:** Stakeholders impacted by siting policy reforms should have transparent and timely information about the policy development process. Informing and including all affected stakeholders during policy development avoids the perception of impropriety. The state or organizations interested in siting policy reform should consider creating formal stakeholder processes, which can increase buy-in and more durable policy solutions over the long term, but may create near-term opposition and blowback from groups motivated to prohibit projects.

**Consider Electoral Timing:** Siting reforms can be politically contentious, and timing relative to election cycles may affect both passage and implementation. Some states have found success by passing incremental legislation in one session—a study bill, or direction to a particular agency—and more comprehensive reforms in the next legislative session. However, this approach can also backfire if stakeholders believe an issue has been resolved, or there is limited political capital for a multi-year campaign.

## After Passage: Design for Implementation Success

**Ensure Adequate State and Local Administrative Capacity:** Siting reforms are only effective if the permitting authority has sufficient staffing, technical expertise, and financial resources to handle the workload. Several states have siting laws that remain largely unused because the state and/or local governments lack implementation capacity.

**Plan for Enforcement:** State siting frameworks require active oversight and enforcement to be effective. States must be prepared to intervene when local governments fail to comply with state requirements and should have clear procedures for doing so.

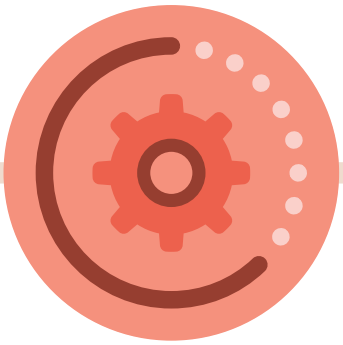
**Prepare for Legal Challenges:** Siting reforms often face legal challenges from both local governments and opposition groups. States should ensure their frameworks have solid legal foundations and be prepared to defend them in court. State agencies should also be prepared to continue implementing new siting authorities while facing litigation.

## Future Iterations: Measuring Outcomes and Making Adjustments

**Establish Clear Metrics:** States should establish clear metrics for evaluating the success of their siting reforms, including permitting timelines, approval rates, project costs, and community satisfaction measures.

**Include Regular Review and Revision:** Siting policies should include provisions for regular review, reporting, and revision based on implementation experience. Technologies, markets, and community concerns evolve, and policies must be able to adapt accordingly.

**Don't Stop at Siting Reform:** Align tax policy, grants for capacity-building, and other complementary levers, to ensure renewable energy projects are meeting their full potential to deliver affordable energy and tangible, predictable benefits for communities.



## CONCLUSION

# Building America's Clean Energy Future

Renewable energy siting represents both the greatest barrier and the greatest opportunity for accelerating America's clean energy deployment. While local opposition and fragmented permitting processes have emerged as significant constraints on renewable energy deployment, the solutions are increasingly clear. States across the country are demonstrating that well-designed siting policies can dramatically improve permitting outcomes while maintaining appropriate community engagement and environmental protection.

## Key Takeaways for Policymakers:

1 **There is no one-size-fits-all solution, but there are clear principles that effective policies share and several useful models.** States must assess their own circumstances—including administrative capacity, political dynamics, existing legal frameworks, and renewable energy deployment needs—to determine the most appropriate approach.

2 **Ensure any policy reform includes the six principles.** Any effective siting policy must strike the right balance between state and local authority and reflect principles of economic opportunity, timely decisions, clear rules, fair process, community benefits, and land stewardship.

3 **Borrow from other states.** No state has entirely solved the challenges of clean energy siting and permitting, but there's no need to start completely from scratch either. Several models and state approaches are best-in-class and deserve emulation and iteration.

4 **Implementation is as important as design.** Many states have excellent siting policies on paper that fail in practice due to inadequate implementation planning, insufficient resources, or lack of political will. Success requires sustained attention to implementation details and adequate resources for enforcement.

5 **Reform is urgent but must be durable.** The rapid rise in energy demand and ensuing affordability crisis demands immediate action on renewable energy deployment, but hasty reforms that lack broad support may prove counterproductive. The most effective approach balances urgency with the need to build lasting political coalitions.

## The Path Forward

State policymakers have unprecedented opportunities to advance renewable energy siting reforms in 2026 and 2027. The combination of rapidly increasing energy demand, growing economic benefits from clean energy, and increasing awareness of climate risks creates favorable conditions for policy change.

However, opposition to renewable energy development is also intensifying, often funded by incumbent fossil fuel interests and amplified by sophisticated misinformation campaigns. State policymakers and advocates must be prepared for sustained opposition and have strategies for building and maintaining pro-reform coalitions.

The stakes could not be higher. America's ability to meet rapidly growing energy demand, maintain energy security, and capture the economic benefits of the clean energy deployment depends largely on our ability to build renewable energy infrastructure quickly and efficiently. State siting policies will largely determine whether we succeed or fail in this critical challenge.

By learning from successful state examples, applying proven design principles, and maintaining focus on effective implementation, state policymakers can create the policy frameworks needed to unlock America's vast renewable energy potential. The technology is ready, the economics are favorable, and successful policy models exist. What remains is the political will to act decisively and strategically to build the clean energy future that America needs.

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