Siting Solutions Project

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A Win-Win Solution for Clean Energy Siting:

State Policy Tools for Improving Community Outcomes, Providing Developer Certainty, and Accelerating Deployment

This white paper distills key insights from "Beyond Preemption: New Legal Strategies for Overcoming Local Opposition to Renewable Energy Projects" by David E. Adelman, Harry Reasoner Regents Chair in Law, The University of Texas at Austin School of Law. Readers are encouraged to consult the full article for complete analysis and citations.

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. Learn more at www.sitingsolutions.com.

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Introduction

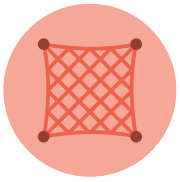
Electricity demand is skyrocketing and electricity prices are on the rise. Artificial intelligence is driving a data center boom, pushing energy demand forecasts from 1% annually to 3% annually by 2027. [1] Meanwhile, retail electricity prices have risen 23% since 2019,[2] and many Americans are feeling the pinch: one third of U.S. households have reduced spending on basic necessities to pay an energy bill, and three quarters of Americans worry that their bills will keep climbing.[3] To meet surging demand and address affordability, more generation is needed on the grid as quickly as possible. Wind, solar, and battery energy storage are the cheapest technologies and quickest to build. They take on average four to six years from announcement to commercial operations,[4] whereas new natural gas generators face supply chain bottlenecks that are pushing delays in turbine delivery out seven to eight years.[5]

Local regulations and community opposition to constructing new clean energy projects have become substantial roadblocks to meeting the United States' electricity demands and addressing energy affordability. According to renewable energy developers, the principal sources of project delay and cancellation are restrictive local ordinances, inefficient permitting processes, and rising community opposition.[6] Recent reports reveal that 20–24% of local governments have adopted restrictive zoning ordinances, moratoriums, or bans on renewable energy development.[7,8] Projects are also facing greater community opposition according to Columbia University's Sabin Center, which identified 498 contested projects across 49 states in 2025, which represents a 32% increase over the prior year.[9]

This report highlights three state policy levers that can be deployed to empower local governments to secure benefits they seek, while reducing downstream permitting risk for developers and thereby enabling advancement of renewable energy projects that are essential to meeting rising demand and reducing electricity prices:

Payments in Lieu of Taxes (PILOTs)—negotiated agreements that allow local property taxes to be traded for predictable, consistent payments that can be allocated in more flexible ways by a local government.

Development Agreements—contractual frameworks that provide developers permitting certainty in exchange for tangible community benefits and customized siting requirements.



Safety Net Model for Assigning Siting Authority—a policy framework for clean energy siting that preserves local control while preventing obstruction.

By adopting these tools, state policymakers can enhance the size, desirability, and visibility of local benefits, strengthen community buy-in, neutralize local regulatory uncertainty, and accelerate development of badly needed clean energy projects.

Why Communities Oppose Beneficial Clean Energy Projects

Renewable energy projects bring real economic benefits—hundreds of millions of dollars in capital investment, significant tax revenue, substantial revenue for landowners, and minimal demands on local infrastructure. Yet local opposition is rising rapidly and shows no sign of slowing. Conventional wisdom attributes local opposition to NIMBYism, but this both ignores contrary evidence and obscures gaps in state laws and structural barriers. Legally, public outreach is hamstrung by policies that pit developers' strategic concerns against early engagement with local communities. Structurally, the costs and benefits of renewable development are not equally visible—economic benefits are indirect and obscure while the costs are magnified by the physical scale of projects.

The Benefits Are Real but Invisible

The long-term economic benefit of renewable projects to local communities derives largely from new tax revenue. Unlike oil and gas development, which has significant multiplier effects—from new jobs and work for local businesses—renewable projects contribute modestly to local employment and have limited secondary economic effects. A 2020 study found that an average-sized 200 MW wind project generates roughly 22 direct jobs and 78 indirect or induced jobs.[10] By contrast, fracking development in top-performing counties added as many as 600 direct and indirect jobs.[11] The recipients of local benefits matter as much as the benefit's size: because most oil and gas benefits flow directly to residents through jobs and to local businesses in the form of increased sales, they are inherently more tangible to local communities.

Property tax revenue, by contrast, tends to disappear into county and school district budgets without residents noticing. Studies confirm that few residents are even aware that local tax revenues have increased because of a solar or wind project in their community.[12] Renewable facility owners have done themselves no favors by failing to communicate with host communities about the benefits their operational projects are delivering over their lifetime.[13] The extent to which economic impacts are visible depends heavily on a county's population. In very low-population counties, a large project can account for 20–30% of the local property tax base, which is substantial enough to be felt by community members through enhanced school budgets and improved services. But for counties with populations in the tens or hundreds of thousands, even a billion-dollar project can represent less than 1% of combined county and school district budgets.

Constitutional Constraints Prevent Communities from Getting What They Need

Even if local governments sought larger and more visible benefits in exchange for renewable energy project approval, Supreme Court precedent often prevents them from doing so. Local governments have broad authority to block or restrict development projects, but the Fourteenth Amendment's Takings Clause, and Supreme Court rulings in the 1980s (Nollan and Dolan), limit the conditions that they can place on project approvals to those that proportionately address a project's actual impacts.[14] In other words, a local government cannot require a renewable developer to fund a new school, healthcare facility, or other infrastructure unrelated to the project's direct impacts as a condition of local approval or a requirement in their clean energy-related zoning ordinances. Left with no ability to demand the level of benefits they think would make a project appropriate for their community, local governments have little choice but to obstruct development through restrictive ordinances and permit denials, because these actions do not involve conditions on approvals of individual projects.

The result is that communities are often forced into a binary choice of "take it or leave it" that limits or forecloses the potential that might exist in open negotiations with developers. Often, since they see little apparent value in the project and a high degree of local concern, local officials elect to "leave it." More recently, Community Benefits Agreements (CBAs) have emerged as a workaround, but they have significant limitations: when local governments are a party to a CBA, they cannot use project

The Visibility of Tax Benefits Depends on Who's Counting

Three illustrative counties reveal how dramatically population shapes the perceived value of renewable development:

Hansford County, TX (pop. ~5,200): With over 1.2 GW of wind development representing more than $1.3 billion in local investment and yielding $25 million in tax revenue, wind projects increase county and school district budgets by **20–30%**, an amount highly visible to most residents.

Breathitt County, KY (pop. ~50,000): A proposed 810 MW solar project worth ~$1.1 billion would generate roughly $11 million annually in property taxes, but county and school district budgets are roughly ten times larger than Hansford County's, meaning the project's contribution would amount to **less than 1%** of combined budgets.

Fresno County, CA (pop. ~1 million+): Even at massive scale—10 GW of solar representing $13 billion in investment—tax revenue would represent a **small fraction** of the county's $4.8 billion budget.

approval as their consideration in the agreement, which makes them highly one-sided and potentially unenforceable. This fact also eliminates the most valuable potential aspect of the negotiation for the developers—it is often unclear what developers gain from generous CBAs when they don't come with a higher level of certainty on permitting. Federal constitutional takings precedent therefore restricts the dealmaking between local governments and developers that could provide more generous, tangible local benefits, reduce developer uncertainty, and make projects more acceptable to local communities.[15]

Late and Inadequate Public Engagement Poisons the Well

Making matters worse, renewable energy developers often avoid engaging communities early in the project lifecycle for fear of blowback and the knowledge that early agreements may not be durable over the full course of the development cycle. Developers typically delay public engagement until they have secured land rights for a project, because premature disclosure can invite competitors to preempt them, give opponents time to organize, and discourage local officials from sincerely engaging because the project is not yet "real".[16] But this means that communities often first learn of a project only after key siting decisions have been made, causing them to feel shut out of the process. One recent study found that roughly 90% of community members were unaware a solar project had been proposed prior to the beginning of construction.[17] Developer expenditures on engagement reflect this de-prioritization: public engagement budgets account for less than 0.1% of total capital expenses for a typical project.[18]

When communities feel that decisions affecting their landscape and quality of life were made without their input, opposition hardens—regardless of the project's actual merits.

It Takes More than Cash to Improve Community Acceptance

Showering a community with tax revenue or a shiny new community center is not enough to change hearts and minds. Rather, the process—and how a community is involved, or not, in decision making—is the true barometer for project success. The social science on this point is unambiguous: perceptions of process fairness are among the strongest predictors of community acceptance of renewable projects, and they are often more important than the actual balance of local costs and benefits.[19]

One recent study of wind development found that where there is more engagement, the attitudes of both supporters and opponents alike are more positive than in places where there is lower engagement.[20] Researchers have also found that the openness and transparency of public engagement is a more important component of the fair process perception than the extent of participation provided.[21] A National Academy of Sciences report synthesizing this body of research on social acceptance of energy projects identifies three core lessons:

Communities value being consulted regardless of outcome.

Accessible and inclusive processes increase the likelihood that decisions will be viewed as acceptable.

Establishing trust can reduce the total time required to achieve project acceptance.[22]

The Three-Part Solution

The good news is that the tools to fix this problem already exist. State legislatures can adopt complementary policy frameworks that, taken together or pursued individually, will change the conditions under which renewable projects are proposed, negotiated, and permitted.

Payments in Lieu of Taxes (PILOTs) are negotiated agreements that allow local governments to set alternative tax rates for renewable projects, replacing fluctuating, assessment-based annual property taxes with a consistent series of fixed payments. However, local governments are authorized to negotiate PILOTs in just eight states for renewable energy projects. Despite their low availability across states, PILOTs offer significant advantages over the status quo because they:

- **Provide tax certainty for developers.** PILOTs replace variable annual property tax rates that are subject to depreciation schedules with fixed annual payments. This eliminates uncertainty and allows payments to be distributed evenly over a project's lifetime. Shifting the timing of tax payments lowers discounted project costs and the certainty of the annual payments reduces financing risk.
- **Give communities stable revenue with fewer constraints on its uses.** Unlike standard property taxes, which decline rapidly as the value of a project depreciates, PILOTs provide stable annual payments. In addition, rather than being absorbed into local budgets (e.g., school district, county), state laws can allow PILOT revenue to be directed toward high-impact projects—new schools, healthcare facilities, or other community investments—that make the benefits of hosting a project tangible to residents.[23]
- **Enable case-by-case negotiation.** PILOTs allow local governments to negotiate payment rates and terms tailored to the specific project and community context, rather than being bound by whatever the standard property tax rate mandates. Most states currently set a specific range for payments, creating a baseline for developer-local government negotiations, or cap PILOT payments at a rate equivalent to the standard property tax rate. Terms for PILOTs are also typically limited from 10 to 30 years, aligning with expected project repowering timelines, which often necessitate renegotiation of project terms.
- **Operate independently of local permitting.** Because PILOTs are grounded in state taxing authority, they do not trigger constitutional takings concerns. This gives local governments a legally sound path to negotiate community benefits outside the constraints of the permitting process.

In their current form, most state PILOT statutes impose significant restrictions on payment amounts, maximum durations, and allowable revenue uses, limiting their flexibility, but offering some protections to developers. They also typically lack robust public hearing requirements, constraining community engagement around negotiations. Existing state laws could be amended and new state laws could be structured to give local governments flexibility in negotiating PILOTs, with reasonable ranges and limitations on exactions.

PILOT flexibility allows for unique programs

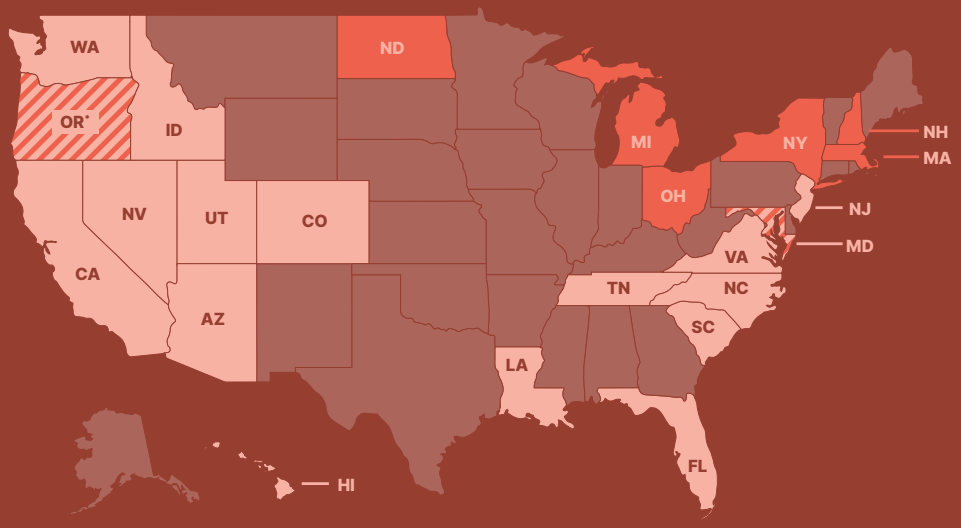
One way local governments with flexible PILOT structures have used PILOT revenues is by directing funds into energy compensation programs that distribute annual payments directly to residents. These programs were modeled on Alaska's Permanent Fund dividend, which makes the community's share of project revenue concrete and personal.[24]

Where Are Development Agreements and PILOTs Authorized?

Development agreements

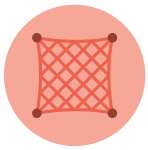
PILOTs

**Oregon PILOTs law sunsets at end of 2027.*



Development Agreements (DAs) are contracts between developers and local governments in which the local government offers regulatory certainty (i.e., freezing zoning requirements for a specified period or negotiating customized zoning requirements, typically 5 to 20 years) in exchange for negotiated community benefits. DAs provide an affirmative benefit to developers and are not subject to constitutional constraints. They are authorized in 17 states but are rarely used for renewable energy projects.[25] Development agreements are particularly valuable because they:

- **Avoid constitutional takings limits.** Because DAs are an independent contractual agreement, and not a condition on a permit, they allow local governments and developers to negotiate benefits that would be categorically prohibited under constitutional takings precedent.[26] Negotiated benefits can include funding for schools, healthcare facilities, direct resident payments, or any other community priorities, and they are not limited to a value corresponding to the anticipated level of adverse impact a project might have.
- **Give developers what they need most:** early regulatory certainty. By vesting project-specific development rights when the agreement is signed, rather than at the time construction permits are issued (the default under state court precedents), DAs eliminate the risk that future zoning restrictions or permitting preferences will upend projects at a later stage of development. This certainty is enormously valuable to developers and provides a significant incentive for developers to offer meaningful community benefits in exchange.
- **Enable earlier, more meaningful community engagement.** The regulatory certainty provided by DAs also gives developers an advantage over competitors with landowners, who will view DAs as a clear sign of the developer's commitment to the project. This neutralizes developer concerns about keeping projects secret until land rights are secured and enables the collection of community input before final project design decisions are made. Most state laws require a public process before a DA is finalized, but augmented procedures should be considered to ensure that the interests of surrounding communities are adequately considered.
- **Provide visible and flexible local benefits.** Unlike property tax revenue, which is legally designated to county or local district budgets, the benefits negotiated under a DA fall outside existing budgetary mandates. They can be allocated, for example, to direct annual payments to residents, investments in high-profile projects or programs, good-neighbor payments to adjacent landowners, or reduced electricity rates for the host community.
- **Allow negotiations over community benefits at any stage of the development process**, which provides greater flexibility to meet the interests of project developers and needs of local communities.



The Safety Net Model of Clean Energy Siting — preserving local control while preventing obstruction

State laws determine whether permitting of projects is conducted at the state level, by local governments, or some hybrid mix of both. While all three approaches involve tradeoffs, the strengths of pure state or local permitting are outweighed by their weaknesses. Broad state preemption of local permitting, now the law in more than a dozen states for larger projects,[27] can reduce opportunities for local governments to secure meaningful community benefits, and fuel local resentment by taking control away from the communities most directly impacted by proposed projects. But pure local control, without any procedural backstop, enables bad-faith obstruction from vocal minorities of community members, politically polarized local officials, or ideologically motivated representatives of outside organizations.

Research suggests that a "Safety Net Model," which favors local permitting but provides a backstop process at the state level, avoids the pitfalls of either pure local control or state-level preemption.[28] This policy model treats local permitting as the default but allows for state-level permitting as a backup to force local stakeholders to the table or, if they refuse, to overrule obstructive local regulations.

How the Safety Net Model works:

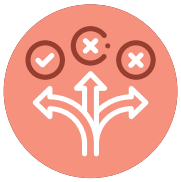
1 **The state establishes reasonable baseline standards** for renewable projects including setbacks, noise limits, height restrictions, screening requirements, and lighting rules that operate as model for acceptable local ordinances.

2 **Local permitting is the primary path for siting approval.** If a local government adopts an ordinance that enables renewable energy development consistent with state standards, it retains full permitting authority. However, local governments can adopt custom ordinances that differ from state standards so long as the developer agrees that it can feasibly move forward under the regulation.

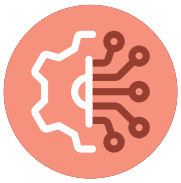
3 **If a local government deviates from the baselines state standards**, or if the developer deems the local regulations infeasible, the developer can opt to progress through the state-level permitting process. The state-level process is designed to be the option of last resort and is deliberately structured to have higher processing costs, including stricter technical reviews, high bars for labor agreements and community benefits, longer permitting timelines, and significant per-MW fees to maintain strong incentives for local permitting.

4 **Community benefits can be required under both permitting processes**, at the local level through direct negotiations, paired with a high per MW incentive paid by the state, and at the state level through a permitting fee paid by the developer.

Why it works:



Removes the veto power of entrenched opponents. Community members and local governments must choose between controlling the process and shaping outcomes versus ceding control to the state.



Creates a constructive dynamic between locals and developers. Under the Safety Net Model, local governments retain meaningful leverage to negotiate because they control the default permitting path. Developers, therefore, have strong incentives to reach agreement locally. The Safety Net model incentivizes both sides to negotiate a mutually beneficial agreement, especially when paired with a policy enabling development agreements and PILOTs to expand opportunities for incentives and negotiations between local officials and developers.

Maximizes the options for agreement. Communities and developers can agree to terms that are stricter than state standards if it serves their mutual interests. This flexibility provides opportunities for developers and local governments to find common ground.

Michigan's 2023 Renewable Energy Siting Law

Michigan enacted landmark legislation in 2023 that closely mirrors the Safety Net Model. The law maintains local permitting below specified thresholds (50 MW for solar, 100 MW for wind) and requires state permitting at the Michigan Public Service Commission above those thresholds if a local government does not have a compatible ordinance, while also preserving local authority for governments willing to adopt reasonable standards. The local process is incentivized through a $5,000/MW grant, paid by the state, while the state process includes a $2,000/MW fee paid by developers, which is also a less enticing amount for local governments. The state process is also a contested case proceeding, mandating public hearing requirements with strict notice and timing provisions, and high administrative overhead (filings are in the thousands of pages). Developers seeking state-level permits must also enter into a community benefits agreement with either the local government or a community-based organization.

The Importance of an Integrated Approach

When communities are excluded from consequential decisions, monetary compensation is not a substitute—it is perceived as a bribe. Studies confirm that where trust is lacking, offers of community benefits can actually deepen opposition.[29] This illustrates how the three policy components described in this report are mutually reinforcing and thus most effective when enacted together. PILOTs, development agreements, and hybrid siting regimes create the conditions for better outcomes by empowering local governments to negotiate deals with developers that serve their respective interests better. The three components work together to address the economic and legal barriers to development:

1 **Visible benefits change the cost-benefit calculation.** Property taxes absorbed into general budgets don't register with residents or local officials. When communities see tangible benefits from development that are aligned with their priorities, and when they are involved in the negotiation through a fair process, public acceptance is much more likely. DAs and PILOTs enable local governments to negotiate benefits that are visible and valued.

2 **Development agreements enable early, meaningful engagement.** Developers delay community engagement because of strategic concerns about competitors and fears that earlier notice will give project opponents more time to organize. Communities view this delay, which is typically tied to the securing of land rights, as a means to circumvent public input on siting decisions and thus grounds for questioning the good faith of developers.

By providing regulatory certainty early in the development process, DAs reduce the risks to projects that lead developers to delay public engagement. When communities are brought in before key siting decisions are made, they may develop genuine ownership of the process—and the benefits negotiated become part of a genuinely mutual agreement rather than an after-the-fact pay out.

3 **The Safety Net Model prevents bad-faith obstruction without sidelining the communities most effect by development.** Research shows that community opposition is typically a response to the disparities in the visibility of the costs and benefits of renewable development and inadequate processes. But organized ideological opposition is a growing concern, and vocal minorities can dominate local processes in ways that are undemocratic, insofar as the views of vocal minorities systematically prevail over those of a more passive but supportive majority.[30]

The Safety Net Model directly addresses this challenge by preserving local permitting as the default while providing a state-level backstop. This channels most projects towards constructive negotiations and prevents entrenched opposition from vetoing beneficial projects.

The combination of PILOTs, DAs, and the Safety Net Model bolsters local democratic processes by facilitating earlier public engagement and providing tangible community benefits. Together they make it harder for vocal minorities or ideological opponents to dominate local processes, and should this fail, state-level permitting is available to prevent obstructionist opponents from vetoing projects.

Policies that Work

Policymakers committed to increasing the economic benefits of clean energy projects in their states and fostering community acceptance should pursue the following actions:

Authorize development agreements and PILOT agreements

Most states do not have laws that authorize local governments to negotiate development agreements or PILOTs with renewable energy developers. Passing authorizing legislation is the essential first step. Most of the 17 states with DA laws, including California, Florida, North Carolina, and Virginia, have adopted similar legal frameworks.[31] Drawing on these existing state laws, the key elements of an effective law are:

- **Authority for local governments to enter binding contracts** that freeze zoning requirements for specified periods, typically 5 to 20 years.
- **Authority for local governments to negotiate customized zoning terms** for individual projects that deviate from existing ordinances but are consistent with the local general plan or the public interest.
- **Robust public hearing requirements** before final approval, with meaningful notice and timing provisions.
- **Reserved authority** for state and local governments to enact subsequent laws protecting public health and safety, and stipulations that local government agreements are not binding on the state or federal government.
- **Community representation requirements during negotiations.** This element is particularly important for counties where the project site is geographically distant from the county seat and rural community interests may not be adequately represented by county-level officials.

Riverside County, California: A Template for Solar Development Agreements

Anticipating significant solar development in the region, county officials in Riverside, California got community buy-in on the important elements to include in development agreements and in 2015 enshrined these provisions in a Board of Supervisors Policy.[33] Under the policy, the county ensures expedited review and approval of solar projects, plus vesting rights, while securing annual payments from solar projects ($150 per acre increasing by 2% annually) and the maximum construction sale and use tax allocation possible to the county.[34] Approval of a conditional use permit from the county is contingent on entering into the development agreement. As of June 2025, Riverside ranked second in solar capacity in California with 4.8 GW.[35]

Establish hybrid siting models

States should enact legislation that incorporates the Safety Net Model. The 2023 Michigan law is a useful template for laws in other states. Key provisions include:

- **State-level benchmarks** for local ordinances that strike a fair balance between limiting impacts on communities and enabling clean energy project deployment.
- **Minimum MW-based thresholds** for state permitting eligibility that preserves local authority over smaller projects while ensuring that large utility-scale projects have a viable path forward.
- **Preserve local permitting** as the default and state-level permitting as backstop by setting a high bar for entry into the state process, including an extended permitting timeline, increased permitting requirements, and higher permitting fees paid by the developer, which should be directed to fund technical assistance grants for local governments and benefits for host communities. Fees and benefits should be calibrated to incentivize local permitting without making state-level permitting economically inaccessible.

Require meaningful engagement

Community engagement should be embedded in development agreement statutes rather than treated as a separate standalone obligation. That said, it's crucial to strike the right balance between early consultation with directly impacted communities and limiting procedural steps for developers. At minimum, state development agreement laws should mandate:

- **Early notice** to affected communities, with timing requirements that ensure engagement begins early in the project development lifecycle, well before permit applications are finalized.
- **Public hearings** with adequate lead time, accessible venues, and procedures designed to ensure representative participation rather than domination by organized opposition.
- **Disclosure requirements** for developers covering project design, expected impacts, and proposed community benefits.
- **Mechanisms for communities** to influence the terms of an agreement, not merely to register preferences after key decisions have been made.

Provide technical assistance

Rural communities typically lack the legal, financial, and technical expertise needed to negotiate effectively with sophisticated developers. States should fund technical assistance programs to ensure that local governments and community organizations can retain qualified and vetted experts to help them evaluate projects independently and negotiate agreements that reflect their informed judgment. Research confirms the value of using trusted third parties to provide technical assistance to local communities.[32]

Local governments often interpret their legal authority instrumentally, that is in favor of whatever they would like to do. Thus, if a local government has the authority to abate local taxes, local officials may interpret this as giving them the authority to negotiate a PILOT. Similarly, local officials frequently believe that their local zoning powers give them the authority to negotiate development agreements. Thus, although local governments may technically lack the legal authority to negotiate PILOTs or development agreements, they often do so in practice.

Conclusion

Renewable energy development can be a substantial economic boon for local communities, and these projects are more likely to be approved and accepted when the legal frameworks and public processes are in place to ensure that benefits are visible, meaningful, and fairly distributed. The research is clear: local opposition to clean energy projects is not primarily a product of irrational NIMBYism or partisan ideology. It is a structural policy failure, rooted in constitutional constraints that prevent communities and developers from negotiating mutually beneficial agreements and structural disincentives that lead companies to conduct inadequate community engagement processes that leave residents feeling excluded from decisions that affect their lives.

The good news is that effective legal tools exist to address these barriers to renewable development. Development agreements, PILOTs, and Safety Net Model siting legislation do not require inventing new legal frameworks; they require state legislatures to adopt established frameworks and apply them to the renewable energy sector.

The time to act is now. Electricity demand and energy prices are rising. Opposition is hardening. Every project delayed or cancelled by avoidable community conflict is electricity that will not reach the grid, demand that will be met by more expensive alternatives, and an opportunity lost to demonstrate that clean energy development and community benefit are not in conflict. Policymakers, developers, and community leaders all have a role to play in getting this right.

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