Assessment of Renewable Energy Siting and Permitting Policies

Commissioned by CATF, NRDC, and TNC

April 11, 2024

Lakshmi Alagappan, Partner
Sierra Spencer, Managing Consultant
Jordan Shenhar, Senior Consultant
Edita Danielyan, Associate
Paula Charles, Associate

Energy+Environmental Economics

Forward

- CATF, NRDC, and TNC aim to significantly accelerate the pace of renewable energy deployment to achieve decarbonization goals in a manner that centers climate action, community concerns, and conservation priorities.
- Our organizations commissioned E3 to evaluate barriers to renewable energy development in eight key states, with a specific focus on siting and permitting policies.
- Through quantitative and qualitative research, including interviews with 15 renewable energy siting stakeholders, E3 has analyzed renewable energy siting and permitting policies to arrive at recommendations for accelerating renewable energy deployment while minimizing impacts to nature and maximizing benefits for communities
- E3's findings are intended for policymakers, advocacy organizations, and others as states consider siting and permitting reforms to accelerate renewable energy project decision-making while maximizing environmental and social benefits

Disclaimer: The findings from this project reflect E3's synthesis of information gathered from research and stakeholder interviews and do not necessarily reflect the opinions and perspectives of CATF, NRDC, TNC, or the interviewees.

CLEAN AIR TASK FORCE

NRDC

The Nature Conservancy

Acknowledgements

- **E3 would like to acknowledge CATF, NRDC, and TNC for commissioning this study**
- **E3 would like to acknowledge that findings from this project were greatly aided by 15 interviews conducted with:**
  - State and local permitting staff
  - Renewable energy developers
  - Permitting lawyers and consultants
  - Non-profits
  - Renewable energy advocacy organizations
  - Trade associations

Outline

- Executive Summary
- Project Overview
- Key Findings & Recommendations
- Recommendations and Considerations
- Stakeholder Interviews Summaries: For Public Use
- State-Level Development Process Case Studies
- Stakeholder Interview Summaries by Interviewee

Project Overview

Energy+Environmental Economics

Background and Project Motivation

- **Deployment of renewable energy projects at scale is critical to the U.S.' ability to achieve its climate goals**
- **Barriers to deploying renewable energy projects have shifted from technical and economic in nature to institutional and social barriers at regional, state, and local levels**
  - Institutional barriers refer to process-related delays and roadblocks that renewable energy projects have encountered while seeking the necessary approvals to be built
    - Approval can include the necessary siting, land use, and construction permits as well as interconnection agreements
  - Social barriers refer to public opposition to a renewable energy project (or renewable energy more broadly) and any resulting efforts to block project development
- **To achieve positive social and environmental impacts, it is also important that renewable siting and deployment is done in a way that benefits local communities and minimizes environmental impacts**
- **Over the past several years, many states have passed legislation to clarify or modify renewable energy permitting authority**
  - Some states have implemented permitting reforms to accelerate the deployment of renewable energy to meet decarbonization targets, while others have attempted to slow or regulate the growth of renewable energy
  - The modifications or revisions to permitting processes have ranged in outcome – some states (California, Illinois, New York, Washington) have increased state authority over renewable permitting while other states (Ohio) have granted local jurisdictions more siting and permitting control

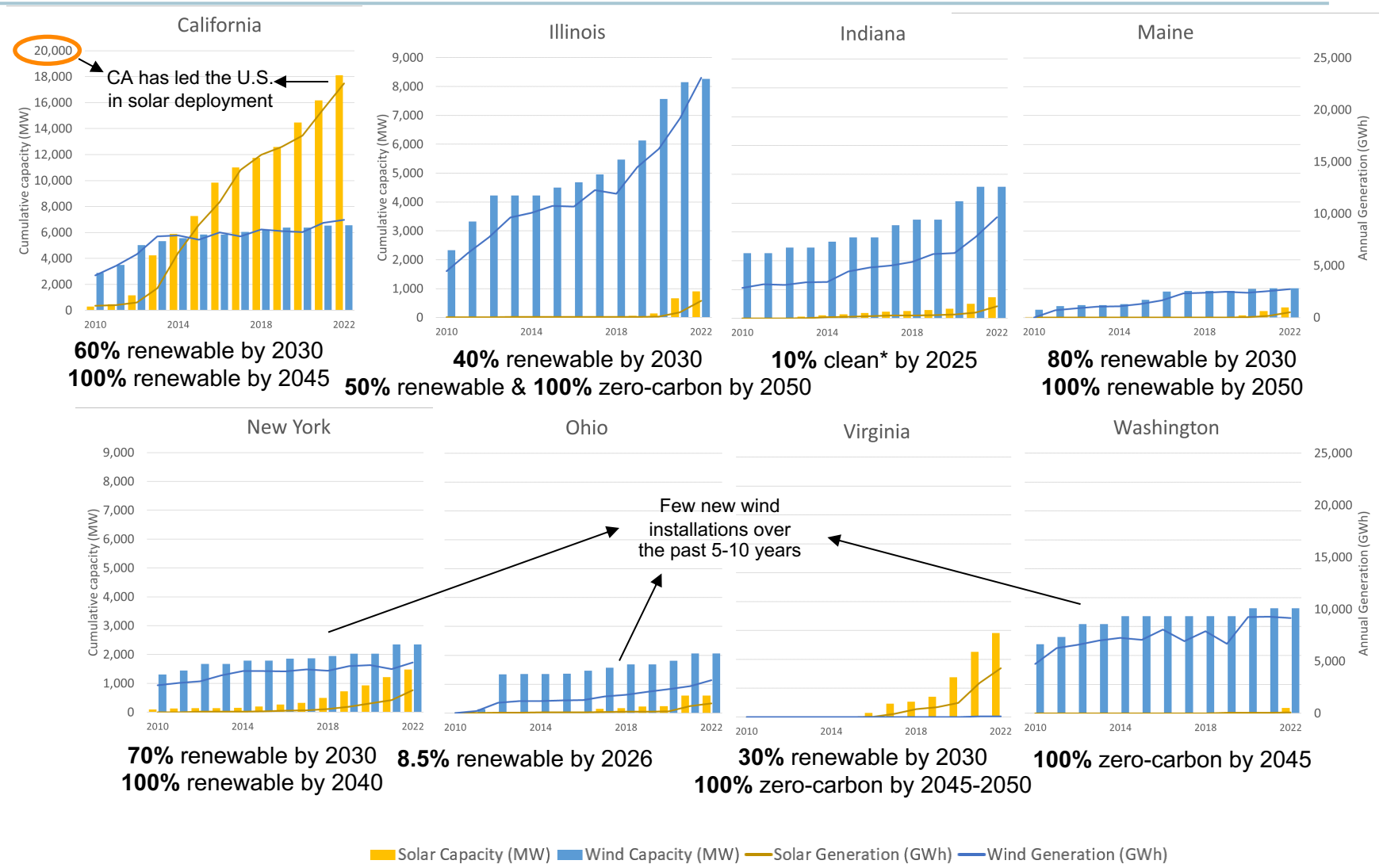
Project Goals

- **This project aims to evaluate siting and permitting policy in eight states selected to be studied in this project to reflect a diversity of permitting policy structures, renewable resource availability, and renewable deployment to date**
- **This project aims to develop recommendations on permitting process best practices that are applicable to states and counties throughout the U.S. regardless of the status of their current permitting process**
  - Recommendations are also provided for different levels of effort given jurisdictional differences in access to policy-making resources and/or political will
- **E3's findings from this project are intended to be used as a reference by policymakers, advocacy organizations, and others as states consider permitting processes as part of the path to accelerating renewable deployment**

Disclaimer: Findings from this project reflect E3's synthesis of information gathered from research and stakeholder interviews and do not necessarily reflect the opinions or perspectives of CATF, NRDC, TNC, or interviewees

Context for Renewable Deployment by State

- The eight studied states have diversity in amounts and types of resources installed over the past 10+ years
- Solar has seen steady growth in some states over the past several years, but most states, with the exception of Illinois and Indiana, have not had significant wind growth over the past 5-10 years
- It is difficult to disentangle siting and permitting barriers and processes from other factors leading to renewable deployment and delays
- It is also largely too early to discern the impact of many of the recent permitting reforms passed in the past several years



60% renewable by 2030
100% renewable by 2045

40% renewable by 2030
50% renewable & **100%** zero-carbon by 2050

10% clean* by 2025

80% renewable by 2030
100% renewable by 2050

70% renewable by 2030
100% renewable by 2040

8.5% renewable by 2026

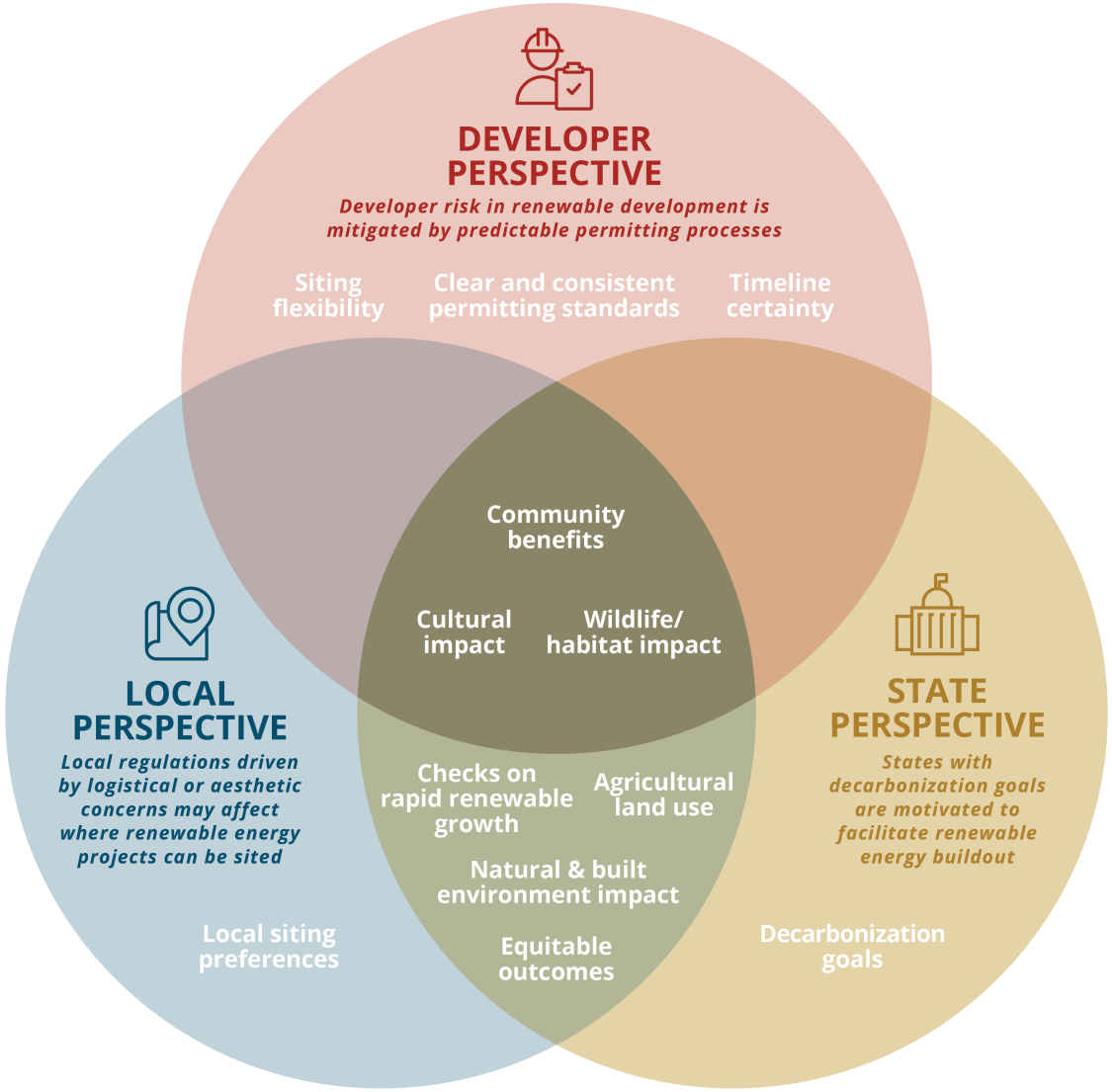
30% renewable by 2030
100% zero-carbon by 2045-2050

100% zero-carbon by 2045

*Includes clean coal

Sources: S&P Global, EIA Annual Generation Data

Considerations in Siting and Permitting by Perspective



Key Findings & Recommendations

Energy+Environmental Economics

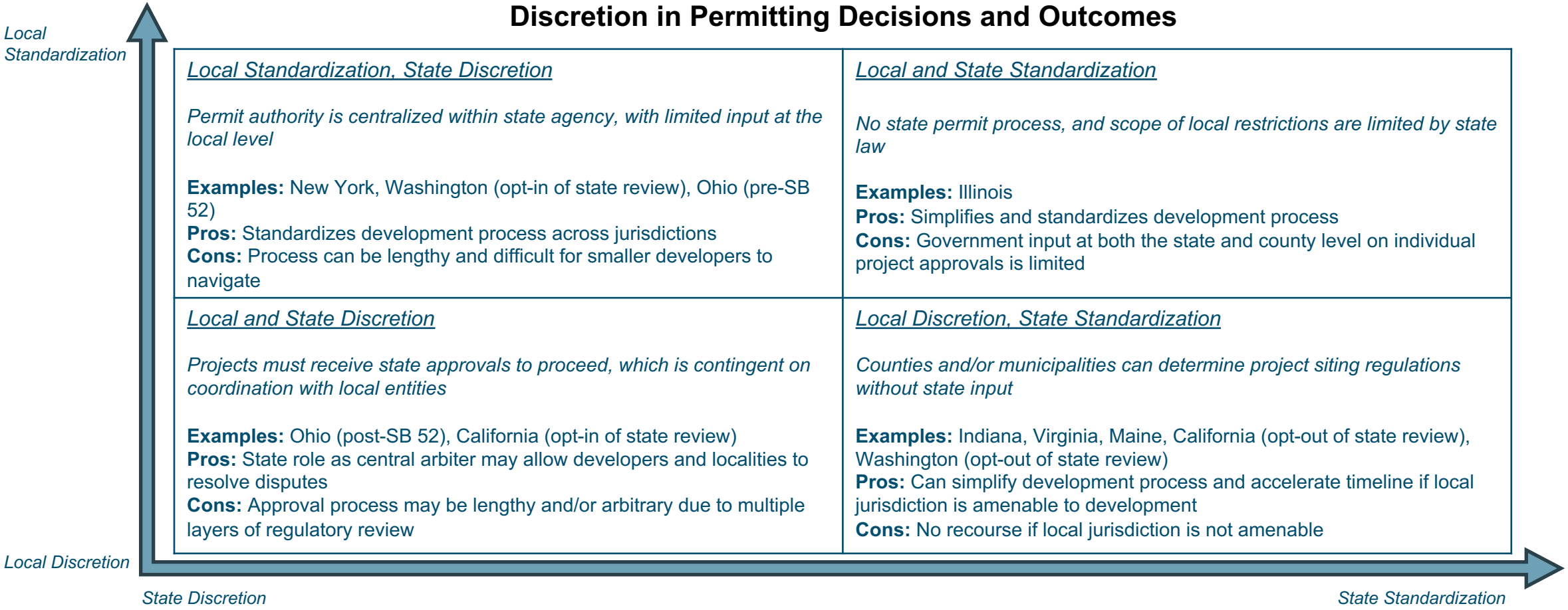
Recommendations for Permitting Policy Frameworks to Facilitate Renewable Deployment

The following are E3 recommendations for policy interventions that can effectively accelerate renewable energy deployment while maximizing social benefits and minimizing environmental impact, as informed by stakeholder interviews conducted by E3:

Category	Recommendation
Permitting Authority	A centralized “one-stop shop” for permitting, rather than a patchwork approach involving multiple agencies with minimal coordination.
Limit Permitting Uncertainty / Discretion	Standardized requirements for all projects and predictable methods of evaluating site-specific conditions. Limited ability for permitting authority to exercise case-by-case discretion, which can increase development risk.
Community Engagement	Clearly defined periods of engagement during which local input is solicited and incorporated into siting and project design, to the extent practicable.
State Pre-Emption of Local Ordinances / Restrictions	State authority to set parameters of standards applicable to renewable energy or pre-empt unreasonably burdensome local ordinances.
Minimized / Transparent Timeline	Transparent and predictable permitting timelines that are streamlined to ensure timely review and approval.

Permitting Process Outcomes by Discretion in Decisions

In addition to the permitting processes themselves, evaluation of the ***outcomes*** from permitting processes is another important layer in assessing the risk and difficulty of project development across states. From an outcomes standpoint, projects are more likely to succeed in jurisdictions where permit review criteria are ***standardized*** rather than ***discretionary***.



Overview of Permitting Process by Jurisdiction Level

	Local Authority → *State Authority*							
Jurisdiction *Authority over the permitting process and approval of permits*	Local Jurisdiction	State + Local Approval Required			Option for State or Local Review		Local Jurisdiction with State Guardrails	State Jurisdiction
Structure *Organization of permitting process*	County Permitting Process	Permit by Rule (PBR)	State + County Review Process	State Agency with Permitting Authority			County Authority Subject to State Standards	State Permit Office
State *States reviewed by E3*	Indiana	Virginia	Maine	Ohio	Washington	California	Illinois	New York
Authority For Project Approval *Governing body with authority to approve renewable project development*	Counties or municipalities are unilaterally responsible for project permitting	Projects <150 MW receive state permits after meeting requirements, including a requirement for county approval	State completes environmental review after project receives county-level approval	Counties must approve projects before the state can review them	Projects can opt for county or state-level review		Counties are responsible for approving permits	State issues permits
Authority Over Standards and Ordinances *Governing body that determines the standards and ordinances that apply to renewables*	Counties can set ordinances and restrictions. State can offer incentives to adopt certain standards.	State approval is subject to compliance with county standards			The state-level review process can override county restrictions		State places limits on how restrictive county ordinances can be	State can override local ordinances if deemed overly restrictive to renewable development

Considerations for Renewable Permitting Processes

Consideration	Definition	Options for incorporating consideration in renewable permitting process
Local siting preferences	Incorporation of local preferences for siting of renewable projects based on local values and priorities	Locally-defined "least-conflict" siting areas, consultations with local government officials and community members, public hearings and comment periods, engagement by developers with local communities
Checks on scale of renewable growth	Reforms to permitting processes to grant local jurisdictions greater control over project approvals, due in part to negative reactions to high volumes of existing renewable energy buildout in certain regions.	Greater community control over permitting process
Decarbonization goals	State policies requiring electric utilities to procure certain volumes of renewable and/or zero-carbon energy or reduce GHG emissions	State guidelines preempting local restrictions on renewable energy development
Clear and consistent permitting requirements	Requirements for obtaining the necessary permits or approvals that are clearly outlined and consistent across the application review and across projects	Establishment of requirements that apply to all projects as well as clear site-specific considerations that will be made as part of the review process
Timeline certainty	A timeline for permitting that is predictable from the outset	Early engagement with developers by permitting reviewers to ensure developers are aware of all application requirements and timelines
Siting flexibility	Ability for developers to select cost-competitive sites with access to transmission network	Standardization of siting restrictions at the state level
Community benefits	Benefits provided to communities for hosting renewable projects	Standardization of best practices for provision of community benefits
Wildlife and habitat impact	Adverse impacts to wildlife and/or habitats	Standardization of requirements from fish and wildlife agencies around both wildlife/habitat mitigation plans or compensation and resource management best practices
Natural & built environment impact	Alterations to natural condition and/or operation of lands that can impact ecosystems and/or the built environment, such as pollution and stormwater runoff, sedimentation, and erosion	Robust environmental review/compliance process, environmental impact mitigation plans, collaboration/consultation with other state-level agencies as appropriate
Agricultural land use	Siting renewable energy projects on farmland	Consideration of land productivity and local valuation of agricultural land in siting and project design
Equitable outcomes	Assurance that projects help address socioeconomic inequality through community assistance or support for existing tenants on leased land	Direct both community benefit payments and private landowner payments towards economically disadvantaged areas
Cultural impact	Alterations or impacts to historic and cultural resources and sites, including Indigenous sites	Incorporation of local and state valuation of cultural and historic resources, consultation with Indigenous groups and other state agencies as appropriate

Local Priority	*State Priority*	*Developer Priority*	*Common Priority*	*State + Local Priority*

E3 Recommended Best Practices During Renewable Permitting Process

The following are recommended practices that can work to accelerate renewable deployment while minimizing environmental impact and maximizing social benefits:

Best Practice	Recommended Best Practices
Engagement of permitting authority with developer	Developers engage early with permitting authorities to identify potential issues early on, when there is more flexibility in project siting and design
Involvement of Third-Party Organizations	Trusted third-party organizations, such as local universities or state agricultural agencies, provide educational or advisory resources to help local stakeholders develop informed positions about proposed projects
Community Engagement	Developers engage early with local communities and allow for feedback on siting and design In addition to upfront engagement, developers and asset owners continue reporting on project benefits throughout the project lifetime
Agricultural Land Use Best Practices	Plant operators follow third-party guidelines regarding land stewardship best practices to ensure that the project site can be restored for agricultural use after decommissioning

Remaining Challenges to Renewable Deployment

Research and interviews have indicated that several significant challenges to renewable energy deployment currently lack clear solutions:

Challenge	Details on Challenge
Opposition to Changes to Local Character	One of the largest barriers to developing renewables is opposition to perceived or real changes to local character and landscape (such as agricultural character), which poses a conflict with no simple resolution
Unwavering Opposition to Renewables	Some communities may be unwavering in their opposition to renewables for aesthetic or ideological reasons, regardless of the economic benefits or environmental mitigants proposed by developers Positive messaging and information may help, particularly with opposition fueled by political discourse and misinformation, but is not guaranteed to boost support
Environmental Considerations	There is inherent tension between the development of renewable energy and the maintenance of existing land uses, with stakeholders reflecting different levels of concern for undisturbed land, agricultural land, and clean energy production
Equitable Benefit Sharing	Renters, including tenant farmers, are left out of economic opportunities granted to landowners through site control payments for renewable projects

Key Takeaways

- **It is largely too early to discern the effect of recent legislation on renewables permitting**
  - E3 recommendations were developed based on early signs and interviewee experience with components of previous and revised permitting processes
- **Various policies and design elements, encompassing a range of effort levels and potential impact, can be incorporated into state and local renewable siting and permitting processes to accelerate renewables buildout while minimizing environmental impact and maximizing social benefits**
- **There is no one-size-fits-all policy to support renewable energy siting and permitting given that each region and state possesses unique cultural, political, social, and environmental factors**
- **The overarching framework that best supports the development of renewable energy is a one-stop shop for permitting with clear and consistent requirements that will issue permits in a timely manner if a project meets criteria around siting, community engagement, and community benefits**
- **The building blocks for ensuring benefits for host communities and the environment are:**
  - Early and frequent community engagement
  - Providing financial or other material benefits to local communities
  - Consideration of environmental impacts and mitigation to the extent possible

Next Steps

- **Several other states such as Michigan have recently passed legislation changing the renewable siting and permitting process that will likely be useful to track**
- **As more projects go through recently revised permitting processes over the next several years, there will be more evidence to determine which permitting frameworks most effectively accelerate renewable energy buildout while minimizing environmental impact and maximizing social benefits**
- **Transmission and interconnection bottlenecks have been identified as major barriers to renewable energy development**
  - A complete picture of policy reforms that can accelerate the buildout of renewables must include an evaluation of these factors

Recommendations and Considerations

For Renewable Energy Siting and Permitting Policies

Energy+Environmental Economics

Overview of E3 Recommendations and Considerations for Renewable Siting and Permitting Processes

- **E3 has identified a set of recommendations for renewable energy siting and permitting processes that can help accelerate renewable deployment while minimizing environmental impacts and maximizing social benefits**
- **Recommendations are categorized by:**
  1. Process-related recommendations (separate barriers for state, hybrid, and local-level jurisdiction)
  2. Permitting timeline
  3. Wildlife, habitat, and environmental impact mitigation
  4. Agricultural land use
  5. Community engagement
  6. Community benefits
  7. Solar decommissioning
- **Recommendations are categorized by level of effort and level of impact**
  - *Level of effort* can, depending on the recommendation, refer to the amount of political action/willpower and/or the amount of funding required to implement the recommendation
  - *Level of impact* refers to the extent to which execution of the recommendation can facilitate renewable deployment at scale

Background on Renewable Siting and Permitting Processes by Jurisdiction Type

- **The permitting process for renewables varies by state, with jurisdiction typically residing in state and/or county purview**
- **A "hybrid" approach incorporates both state and county jurisdiction in the permitting process**
- **Permitting processes can pose challenges for renewable development if the approval process and requirements are discretionary, inconsistent, and/or unpredictable**
  - Developers have expressed a need for consistency and predictability in permitting processes. Arbitrary reviews can create extended back-and-forth, which can cause secondary issues like project contract expirations
  - Depending on the permitting jurisdiction, counties can establish ordinances or restrictions that prevent renewable development or can reject proposed projects
- **Over the past 2-3 years, a number of states have made significant changes to their permitting processes**
  - In many states, there are early signs but it is largely too early to tell the impacts on renewable development from these changes

Jurisdiction Type	Largest Barrier(s)
State-Level	State-led permitting processes can be longer, more expensive, and/or more complicated given the number/length or inconsistency of requirements
Hybrid	Increased complexity and risk of delays or rejection by having multiple levels of review
County-Level	Room for counties to establish ordinances or restrictions that prevent renewable development

E3 Recommendations for State-Level Permitting Processes

- **State-level authority to override county ordinances and restrictions can enable the development of projects that might otherwise be affected by overly restrictive ordinances**
- **States tend to be more likely than counties to approve renewable projects in spite of local opposition to projects**

Level of Effort	Level of Impact	State Authority Recommendations
Low	**High**	Create clear, consistent, and predictable permit requirements
Medium	**Medium**	State has authority to override overly restrictive local ordinances ➢ *This authority can be granted through jurisdiction given to state agencies or through legislation*
Medium	**High**	Establish or clarify jurisdiction of existing agencies to have opt-in authority over renewable permitting ➢ *This gives developers the option to undergo state review if a project is likely to be denied by a county, but also preserves the option for a quicker, simpler, and less expensive county review in counties amenable to renewables*
Very High	**High**	Create a renewable permitting-specific state agency to oversee permitting ➢ *ORES and its regulations took ~1 year to develop following New York's passage of the Accelerated Renewable Energy Growth and Community Benefit Act*
Very High	**Very High**	Create robust guidelines on site-specific permit requirements to increase developer certainty

E3 Recommendations for State-Local Permitting Coordination

+ Local government perspectives on renewable energy siting may vary

- Some localities prefer authority over siting decisions, while others would prefer to shift permit authority to state officials, due to both the lack of resources to evaluate projects and the potential for political backlash

+ Hybrid processes have emerged as a middle ground between county preferences for local input on permitting decisions and state-level needs for deploying renewables to achieve decarbonization targets

- Depending on the design, hybrid processes have the potential to simplify and shorten the permitting process (such as in Illinois) or to complicate and add risk to the process (such as in Ohio)

Level of Effort	Level of Impact	Local Authority Recommendations
Low	**High**	States prohibit counties from setting moratoriums or bans on wind and solar projects
Medium	**Medium**	Develop state standards and give counties incentives if their standards are not more restrictive than state standards ➢ *May be challenging to get funding (from state, federal, or developers) for these incentives*
High	**High**	Set a requirement that county standards cannot be more restrictive than state standards
Very High	**High**	Create regional renewable buildout requirements with flexibility for communities to determine how to meet those requirements ➢ *Not done for renewable buildout yet, but has been done for affordable housing development*

E3 Recommendations for Permitting Timelines

- **Long permitting timelines can pose challenges to project development, particularly if the timeline is unpredictable**
- **Long permitting timelines are particularly acute in more complex state-level processes**
- **The Permit by Rule (PBR) process is one example of a process designed for fast and predictable permitting processes, but may not be appropriate for all permitting processes**

Level of Effort	Level of Impact	Recommendations
Low	**Medium**	Early engagement of developers with state agencies or counties ➢ *Developers have more flexibility earlier in the process, so may be able to modify project design components that could cause issues later in the process* ➢ *Early engagement can also ensure developers provide all necessary materials in their application and are aware of all requirements and components of the review process, such as additional fees*
Low	**Medium**	Increased resources, particularly staffing, to prevent bottlenecks in agency review, especially given an increasing volume of renewable project applications ➢ *Funding agency operations via project application fees may help ensure that staffing levels keep up with project caseload*
Medium	**Medium**	Enhanced interagency coordination to ensure timely permit review based on standardized guidelines and schedules, including processes to resolve and/or escalate coordination delays within set timelines
Medium	**Medium**	Expedited timelines offered for projects sited on contaminated or degraded land as one way to incentivize siting on these lands

E3 Recommendations for Wildlife, Habitat, and Environmental Impact Mitigation

- **In addition to wildlife and habitat impacts, environmental impacts also include impacts to natural environments (e.g. wetlands, sedimentation) and interactions with the built environment (e.g. stormwater runoff)**
- **Many states require an environmental review process as part of the approval process for renewable energy project permits**

Level of Effort	Level of Impact	Recommendations
Low	**Medium**	Incorporate environmental reviews as early in the project review process as possible ➢ *Environmental impact can have a greater role in determining siting selection if evaluated earlier in the process* ➢ *Developers have greater flexibility with changing project design to mitigate environmental impacts earlier in the process* ➢ *Can help avoid projects going through much of the permitting process before reaching blocks from environmental impacts*
Low	**Medium**	Requirement of environmental mitigation plans based on clear and consistent regulatory standards, to encourage selection of low-impact project sites
Medium	**Medium**	Require compensatory mitigation, proportionate to project impact, to incentivize siting in areas with lower environmental impacts and to fund conservation and habitat/wildlife protection efforts
Medium	**Medium**	Clear, consistent guidelines or requirements around environmental impact mitigation efforts

E3 Recommendations for Agricultural Land Use

+ **There is a delicate balance between providing farmers lucrative opportunities for using farmland for solar and taking farmland out of commission**
+ **Using agricultural land for renewables has been a major source of local opposition in some areas**
  - Particularly difficult to address rooted in opposition to change, particularly industrialization, of agricultural character of communities

Level of Effort	Level of Impact	Recommendations
Low	**Low**	Adopt land decommissioning best practices into state and county-level regulations ➢ *Ideally, the federal government would conduct research and develop guidance on preserving farmland while developing solar and wind that could be incorporated into state or local regulations or guidelines* ➢ *There is currently no process in place requiring states to adopt federal guidance*
Medium	**Medium**	Adopt mitigation fees or compensation mechanisms to proactively incentivize siting on preferred lands and fund "like for like" replacements of farmland taken out of commission by renewables ➢ *Land preferred for renewables varies by community, so preferred lands should be determined at the county or potentially more geographically granular level*
High	**Medium**	Incorporate agrivoltaics whenever possible ➢ *Requirements for agrivoltaics may be premature given limited viability in some locations, but requirements may be needed to incentivize incorporation of agrivoltaics given the higher cost* ➢ *Some developers are willing to voluntarily pay the extra cost, but others are not* ➢ *Further research is needed to determine if/how to incorporate agrivoltaics*
Very High	**Medium**	Further development of policies to protect tenant or renter farmers is needed to ensure these farmers do not lose out on the economic benefits from converting farmland to renewables

E3 Recommendations for Community Engagement

- **Local opposition has led to significant delays and/or cancellations of renewable projects**
- **Causes for local opposition vary by area, but some of the most pervasive causes for local oppositions are land use and visual impacts**
- **Community engagement is a core recommendation to address local opposition, with specific recommendations on community engagement detailed below**

Level of Effort	Level of Impact	Recommendations
Low	**Medium**	Positive messaging and information about renewables can help boost local willingness to host renewable projects
Low	**High**	Early engagement by developers with local communities can increase local support for projects ➢ *The price of community engagement is small relative to other project development expenses and could yield significant savings later on*
Medium	**Medium**	Provide funding for engagement by local groups, organizations, and individuals to support involvement
Medium	**Medium**	Incorporate a third-party organization trusted by the host community in the community engagement process ➢ *Developers have not been trusted sources of information on renewable projects given their profit motive* ➢ *University research groups/extensions are often trusted by communities* ➢ *Although developers are often willing to fund third-party organization participation, funding should come from elsewhere to preserve trust*
High	**High**	Develop forums that will work best for that community to solicit and incorporate local input ➢ *Public informational meetings, hearings, and/or comment periods may not be the most effective forums for incorporating local input and preferences into site selection or project design*
High	**Medium**	A transparent and just process may lead to greater acceptance of the process's outcomes ➢ *For example, community acceptance of renewable projects may be higher in New York since the creation of ORES*

E3 Recommendations for Community Benefits

+ **Community benefits help ensure that local communities benefit from renewable deployment**
+ **Community benefits can also effectively address local opposition by outweighing concerns over renewables**

Level of Effort	Level of Impact	Recommendations
Low	**Low**	Reporting of benefits and outcomes of projects beyond the project development phase (i.e. once operational) ➢ *Reporting of benefits realized over the lifetime of a project, as opposed to only promises of benefits at the outset of a project, grow support for a specific project and renewables more broadly* ➢ *Some developers already do this but others can do a better job at this*
Low	**Medium**	Requirements for projects to provide community benefits for permit approval ➢ *Many states already have requirements that projects provide community benefits in the permitting process* ➢ *Community benefits that have been effective at garnering local support of projects have been in lieu of property taxes, support of other public programs or infrastructure (such as for schools, fire departments)* ➢ *The types of community benefits preferred vary by community, so the types of community benefits offered by projects should not be prescribed and should instead be informed by local preferences/needs* ➢ *In some areas, however, particularly in wealthier communities whose incremental benefit from renewable projects may be lower, community benefits have not been enough to increase support of renewables*

E3 Recommendations for Solar Decommissioning

- **Solar decommissioning has largely not posed barriers to renewable development and is relatively standardized across the industry regardless of regulatory requirements**
- **Solar decommissioning is typically funded through performance bonds paid for by developers and issued by the construction contractor**
- **Concerns that have emerged around solar decommissioning have stemmed from misinformation**

Level of Effort	Level of Impact	Recommendations
Low	**High**	Standards and guidelines around solar decommissioning should be included as part of the permit approval process ➢ *Many states already include financial assurance and decommissioning plan requirements as part of the permit approval process*
Medium	**Medium**	Increase education around solar decommissioning to combat concerns over decommissioning that stem from misinformation

Transmission

- **Transmission capacity is one of the biggest if not the biggest factor in site selection**
- **Transmission interconnection studies can take several years in some areas and are a significant barrier to renewable development**
- **There are not many examples of coordinated transmission and generation planning in practice to support deep decarbonization**
  - One example framework could be the California Renewable Energy Transmission Initiative (RETI), which aimed to identify identifying potential transmission that could support renewable buildout[1]
- **Further development of recommendations related to transmission were out of scope for this project, but are likely important for accelerating renewable deployment**

[1]https://reti.databasin.org/

Permit By Rule (PBR)

- **Rather than reviewing permit applications on a case-by-case basis, some state offices (e.g., the Virginia Department of Environmental Quality) will issue permits automatically to projects that complete a standardized checklist of development prerequisites**
- **This level of standardization of the permitting process facilitates the buildout of clean energy by:**
  - Providing developers with upfront transparency around permit requirements
  - Minimizing uncertainty and delays associated with state officials determining whether or not to permit a project that has met its state and local legal obligations
- **PBR processes can also incorporate best practices for developers to follow in accordance with state preferences, creating an avenue for states to incorporate conservation and equity considerations into the development process in line with state preferences**

Sample Permit by Rule (PBR) Checklist

A **"Permit by Rule" (PBR)** differs from a discretionary permit in that the regulatory agency responsible for review must approve any permit application it deems "complete." A complete application demonstrates that a project has met certain predetermined development milestones and requirements. Allowing projects to receive permits by-rule accelerates development by standardizing the permit review process.

A model "checklist" for determining a state permit application's completeness for a PBR should include the following items:

Item	Description
Local Permits	
Special Use Permit	Local entity responsible for zoning approves project location
Public Comment Period	Developer and local regulators host meetings for public to provide feedback on project. States may ask developers to provide responses to public feedback as well.
Real Estate	
ALTA Survey	Developer submits American Land Title Association-compliant survey of project site and adjoining properties indicating holders of land deeds, leases, and easements
Site Control	Demonstration of site control (leases, lease options, or purchase options) across all parcels required for both project and substation construction
Environmental & Cultural	
State environmental permits	Required state environmental permits, or correspondence with relevant agency indicating that project is compliant with environmental regulations
Federal environmental permits	Required federal environmental permits, or correspondence with relevant agency indicating that project is compliant with environmental regulations
Phase I Environmental Site Assessment	Desktop study summarizing environmental condition of project site, including presence of protected species and adverse conditions such as hazardous chemicals
Cultural Impact Survey	Survey identifying project impact on potential sites of historical, archaeological, or religious importance, particularly with respect to Native American heritage
Mitigation Plan	States may have different standards around what mitigation plans need to include (e.g. payments to local governments or conservation funds, native vegetation onsite, etc.)
Transmission	
Interconnection studies	State can work with relevant system operators or balancing authorities to determine appropriate level of interconnection progress required to determine if a project is viable

Note: the above list is meant to represent a minimum set of criteria that a PBR process should consider. While limiting the complexity of the PBR process would facilitate clean energy deployment, some states may prefer to incorporate additional prerequisites.

Sample Menu of Community Benefits

Clean energy developers often agree to contribute to local government priorities as a condition for siting approval, or as a replacement for property taxes. A **standardized menu of options for community benefit payments**, set at the state level and capped at a state-defined value, can help streamline the negotiation process and allow local stakeholders to select methods of support in line with community preferences.

A model "menu" for determining allowable forms of community benefits could include:

Item	Description
Public spaces	
Educational facilities	Upgrades or renovations to local public schools, after-school programs, or other educational infrastructure
Civic infrastructure	Construction of new roads, bridges, hospitals, community centers or emergency service stations
Parks	Establishment of new parks, fields, or other publicly accessible outdoor spaces
Funding support	
Emergency services	Funding for police, fire departments, and EMT services for a set period of time
Property tax abatements	Payment of local property taxes for residents for a set period of time
Economic equality	
Tenant farmer financial support	Support for tenant farmers whose livelihood would be affected by project construction

Note: the above list is meant to represent a minimum set of criteria that a standardized community benefit allocation process should consider. Under this framework, developers and local governments may mutually agree to a higher level of community support than the level established by state law.

Stakeholder Interview Summaries

Energy+Environmental Economics

Siting and Permitting Process

+ **Model permitting framework: The model permitting framework for developers is a one-stop shop for permitting with clear and consistent requirements that will issue permits in a timely manner if a project meets requirements**
+ **Opt-in state-level processes: Several states have an opt-in state-level review process (CA, WA)**
  - State agencies have seen a split between projects opting-in to the state-level review process versus opting for a county process
  - Developers typically select the process projected to be most favorable for that project
    - State-level review processes tend to be more expensive, complex, and can take longer, but can have higher predictability and the ability to overcome local restrictions
    - County-level processes can be quicker and simpler, but are subject to county discretion
+ **Local jurisdiction: Some counties are very opposed to giving up local autonomy to make permitting decisions**
  - The importance of local autonomy stems from seeking to exercise local preferences in permitting decisions (i.e. permitting is not one-size-fits-all at the state level)

Recent Siting and Permitting Legislation

+ **Impacts of recent legislation: It is largely too early to discern the impact of recent legislation in CA, IL, NY, OH**
+ **New York's Office of Renewable Energy Siting (ORES), created in 2021, has shown early progress at higher rates of renewable project approval than the previous permitting process (which had been designed to permit conventional generation facilities)**
  - Interviewees generally thought ORES was a good model for renewable permitting, but some developers have found siting in New York under ORES to be difficult given the strictness and uncertainty of ORES requirements, particularly during the project amendment phase (i.e. when projects have made amendments, the approval process may find issues with the project unrelated to the amendment that had not been raised previously)
+ **Only two projects have opted-in to the California AB 205 renewable permitting process as of January 2024, making it too early to tell the impacts of availability of this new process**
  - Interviewees have expressed uncertainty that the AB 205 process will have faster timelines since there are additional steps beyond the 270-day CEC review process that could elongate the timeline (such as CA Fish and Wildlife Department (CDFW) and completeness timelines)
+ **Renewable projects in Ohio are still partially grandfathered from SB 52, making it too early to discern the full impacts of the legislation**
+ **It is too early to measure any impacts from Illinois' HB 4412. There are several legal challenges that may be worth watching to uphold the state's ability to set standards for renewable projects**

Timeline

+ **Permitting authority early engagement: Early engagement by permitting authorities with developers can help ensure application requirements will be met, therefore minimizing incompleteness determinations, which can extend development timelines**
  - New York ORES Upfront Consultations: For example, ORES requires local governments and developers to hold consultations prior to the submission of state permits to help preempt litigation and adjudication and to streamline the state approval process
+ **Maximum review timelines: A number of states (CA, ME, NY, VA) have maximum review timelines beyond which a permit is automatically granted**
  - Clocks on review timelines can be restarted if additional information is required from developer or if additional consultation with other agencies is required
+ **Developers prefer standardized and consistent timelines for state permit approvals, even if application processes are lengthy or rigorous**
  - Variable or discretionary processes introduce uncertainty around the project's commercialization timeline, which can affect the status of major contracts like PPAs, equipment supply agreements, and financing documents

Interactions of Renewable Permitting With Other Legislation

+ **States and localities may have specific laws or regulations that pose challenges to renewable development that may need to be addressed outside a permitting process to facilitate development**
+ **Land use laws: laws surrounding land use may pose barriers for renewable development**
  - For example, the Williamson Act in California, enacted in 1965, sets restrictions on land use to preserve agriculture that creates barriers for renewable development. A streamlined process for contract cancellations under the Williamson Act can speed up and reduce costs for renewable development in California
+ **Species/habitat protection: states may have additional protections for endangered or threatened species and/or habitats that support these species beyond federal requirements**
  - For example, the Western Joshua Tree Conservation Act in California, passed in 2023, establishes additional permitting requirements and fees for renewable energy and housing projects that impact Western Joshua Trees beyond requirements for endangered species

Siting Incentives

+ **Mitigation fees: A number of states have mitigation fees as part of the permitting process**
  - Mitigation fees exist for agricultural land in California and, as of 2024, in Virginia
  - Developers have found these fees manageable as long as there is sufficient upfront transparency around fees that will be incurred
  - Mitigation fees will only influence site selection if set high enough
+ **Maps to inform siting decisions: Interviewees had mixed opinions on the usefulness of publicly-available maps with information or incentives on siting on different lands within a county/state**
  - Those who opposed cited the potential for market and competition distortion (landowners may jack up their land prices if seeing their land is preferred for development)
    - Opponents tend to think developers have sufficient information on their own to make these decisions and that the market and resulting competition will yield optimal outcomes on its own
  - Those who supported cited the increased ability to proactively site on preferred lands, such as contaminated lands or lands identified as least-conflict

Community Engagement

+ **Requirements for community engagement: many permitting processes include a requirement for community engagement and soliciting community input on projects**
  - The degree to which this solicited input is incorporated varies, with some states doing nothing beyond gathering input and others more successfully ensuring that input gets incorporated into the project
+ **Boots-on-the-ground engagement: Interviewees have indicated that there is no replacement to on-the-ground engagement and relationships with local communities**
+ **Early engagement: Engagement with communities conducted early in the development process can help identify any concerns early on and allow the developer to address them to the extent possible while project siting and design may have more flexibility**
+ **Third-party organizations: Many interviewees believe that involvement of trusted third-party organizations can help develop community support for a project**
  - Developers, given their profit motive, are often not trusted actors and instead, third-party organizations are needed in the process
  - Funding for third-party organization participation must come from outside the developer to preserve trustworthiness of the third-party organization
  - The types of third-party organizations trusted may vary by community, but university extensions are often trusted
+ **Engagement not a guarantee for acceptance: While an emphasis on community engagement can boost local support for renewable projects, some regions may not be amenable to renewables under any circumstances**

Local Ordinances and Restrictions

+ **Avoiding counties with restrictive ordinances under county-level permitting jurisdiction: developers have reported that they avoid counties with restrictive ordinances entirely in areas with permitting under local jurisdiction**
+ **Fees as workaround to ordinances: Some developers and state agencies have reported that the biggest barrier to renewable projects has been fees rather than ordinances or restrictions**
  - For example, several counties in California have instituted $/acre/year fees on land occupied by renewables, which makes projects uneconomic
+ **Non-complying ordinances: in Illinois, where HB 4412 has set maximum standards of local ordinance restrictiveness to renewables, some counties have ordinances that do not comply. Developers are beginning the legal battle to challenge these non-complying ordinances**

Community Benefits

+ **Local preferences/needs incorporated**: ORES requires developers to offer community benefits but strategically leaves the types of benefits to be determined on a project-by-project basis to allow for incorporation of community needs and priorities
+ **Wealth of community**: wealthier counties may place lower value on community benefits and benefits may be less likely to spur support for a project. On the other hand, community benefits may be more effective at driving support
+ **Reporting benefits**: even if projects achieve benefits, it may take developers reporting on benefits for communities to realize fruition of the promises made as part of renewable projects

Environmental Impact

- **Agency conducting environmental review: the agency responsible for conducting environmental reviews varies by state**
- **Mitigation plans: many states require environmental mitigation plans as part of the renewable project approval process**
- **Mitigation fees: some states have environmental mitigation fees or other compensatory structures in place to incentivize siting in areas with lower environmental impacts and/or compensate for impacts of a project through like-for-like replacements**
- **The California Department of Fish and Wildlife (CDFW) has recently adopted requirements and mitigations fees around habitat and wildlife protections that are intended to not cause barriers to solar development, but it remains to be seen if this will provide a positive model for addressing habitat/wildlife issues**
  - Some developers believe that prior CDFW regulations have been discretionary and inconsistent with state and federal law

Land Use

- **Transmission**: Transmission capacity is the biggest factor in site selection and is therefore a key determinant in which lands are sought for renewable development
- **Tradeoff of impacts**: The tradeoff between environmental impacts from undisturbed land and loss of agricultural land for disturbed land means that developers can pick their battles rather than eliminate impacts of renewable projects
- **Local determination of "least-conflict" siting areas**: "least-conflict" siting areas must be defined at the local level to incorporate local perspectives on high-value agricultural land (such as least-conflict studies developed in WA and CA)

Agricultural Land Use

+ **Best practices for using farmland: state and county-level regulations should incorporate best practices to protect soils during project construction and decommissioning**
  - Development of guidance for preserving farmland while developing renewables could be done at the federal level. These guidelines could be incorporated into state or local level guidance, although there is currently no process in place that would require state or local governments to incorporate guidelines
+ **Mitigation fees: to be able to disincentivize siting projects on prime agricultural land, mitigation fees would have to be set high enough**
+ **Agrivoltaics: agrivoltaics offer the potential for a win-win solution and require further research to determine if/how agrivoltaics can be incorporated in communities throughout the U.S.**
  - Agrivoltaics may not be suitable in all places, though. For example, water shortages make agrivoltaics potentially less viable in CA
+ **Tenant farmers: Further development of recommendation and policies to protect renter farmers is needed to ensure renter farmers do not lose out in the economic benefits from converting farmland to renewables**
+ **Economic valuation of land: Some states may have processes or valuation methodologies that make it more economic to preserve farmland**
  - For example, Indiana uses a standardized process to value agricultural land for property tax assessments that leaves some counties economically better off leaving farmland intact

Local Opposition

- **Visual impacts: one of the most pervasive causes for local opposition is residents not wanting to see renewable projects in their communities**
- **Political discourse and misinformation: other common sources of local opposition reported were political discourse, particularly since the election of Donald Trump in 2016, and misinformation**
- **Mixed opinions on use of agricultural land: interviewees reported varying levels of opposition versus support for using farmland for solar**
  - Some residents have supported renewable development given economic opportunities offered
  - Other residents have opposed renewable development even if economically favorable to develop solar
    - One of the sources of local opposition that is most pervasive and difficult to overcome stems from sense of place and the perception of industrialization of the agricultural landscape
- **Underlying factors driving opposition: communities are more likely to be amenable to renewables if they are in need of economic benefits and/or are experiencing job losses in other sectors (such as in coal infrastructure)**
- **Transparency to address opposition: some interviewees believed that even if permitting processes did not always given community members everything they want, a transparent and just process would promote local buy-in of permitting decisions**
- **Local responsibility for meeting state decarbonization targets: there is a need for building up local buy-in of communities carrying their weight of meeting renewable targets**

State-Level Development Process Case Studies

Energy+Environmental Economics

California

- **Historically, counties have been responsible for issuing permits for renewables**
- **Due to misalignment between state climate goals and pace of local approvals, California implemented AB 205 in 2022, allowing projects >50 MW to opt into a state-level certification process that can override local restrictions**
- **Thus far, few projects have elected to pursue state-level approval process**
  - Developers prefer constructive relationships with local stakeholders, so state process may be viewed as last resort
  - State process includes 270-day review period that can be extended due to project design changes or judicial review, so may not reduce permitting timeline overall
  - Unclear how state will resolve potential misalignments between California Energy Commission, which tends to reply on expert testimony from other agencies, and state Dept. of Fish and Wildlife, which often requires mitigation plans that are stricter than existing state guidelines
- **Developers view largest local barrier to project development as per-acre land use fees assessed by counties, rather than bans or moratoria on project approvals**

State at a Glance

Decarbonization Goals	60% clean energy by 2030, 100% by 2045
State Permit Authority	Projects >50 MW can opt into California Energy Commission certification process
Local Permit Authority	Counties have permit authority for projects <50 MW or that forgo state process

Illinois

+ **Illinois has historically taken a patchwork approach towards renewable energy siting, with authority shared between townships, counties and state**
  - 2017 legislation removed township authority, leaving counties as sole local authorities on project siting
  - Passage of Clean Energy and Jobs Act in 2021, which included a 100% clean energy standard by 2050, made local siting restrictions untenable
+ **New legislation (HB 4412) creating state standards for county-level siting restrictions has yielded mixed results**
  - Too early to fully evaluate, as bill only passed in 2023, but two renewable energy projects have been approved in counties that had previously restricted development
  - Many counties adopt recommended standards issued by state Department of Natural Resources
  - Some counties have refused to revise ordinances and remain out of compliance with state law, while others have adopted restrictive permit fees in an effort to restrict development within the confines of the state law

State at a Glance

Decarbonization Goals	50% clean energy by 2040, 100% by 2050
State Permit Authority	State has placed guardrails around how restrictive county ordinances can be
Local Permit Authority	Counties have ultimate permitting authority, but any restrictions must comply with state guidelines

Indiana

+ **Current process gives counties discretion over siting decisions and permit approvals, with no avenue for state to override local restrictions or moratoria**
  - Minimal coordination between state and local policymakers with respect to renewables
+ **Local objections to wind helped slow development of the industry after a period of rapid growth, and similar process currently underway for solar**
+ **Two recently enacted laws intended to slow the rollout of local restrictions have had limited success**
  - SB 411 created voluntary statewide standards for how restrictive local siting barriers for renewables should be, but uptake has been limited
  - SB 390 would provide incentives for counties that comply with state guidelines, but incentive is not sufficient to drive uptake of state standard, and many counties believe that additional incentives for renewables may reduce other forms of economic development payments from developers
    - Some counties affected by coal retirements have adopted state standards

State at a Glance

Decarbonization Goals	10% renewable energy by 2025
State Permit Authority	None
Local Permit Authority	Counties have ultimate permitting authority

Maine

- **Maine does not have a centralized permitting process – state Department of Environmental Protection reviews projects that have been procured by the Public Utilities Commission**
- **Local opposition and restrictive municipal zoning requirements have posed greater barrier for renewable energy projects in Maine than state-level permitting process**
  - No mechanism for state to preempt local restrictions
  - Local moratoria increasingly common in the wake of state regulations to fast-track DER deployment, which led to a wave of small projects in rural areas that were not subject to the same setback requirements as utility-scale projects
- **Opposition often centered on visual impacts, particularly for wind and transmission projects**
- **New statewide process includes broadly construed natural resource protections that add discretion to the process, which has disincentivized developers**

State at a Glance

Decarbonization Goals	100% renewable energy by 2050
State Permit Authority	State agency reviews and approves all projects
Local Permit Authority	Municipalities can adopt ordinances and zoning requirements

New York

- **Historically, municipalities and counties have been responsible for issuing permits for renewables**
- **Misalignment between state climate goals and local approval timelines led New York to create the Office of Renewable Energy Siting (ORES) in 2020 to expedite the permit process for wind and solar projects >25 MW**
  - ORES attempts to mediate conflicts between developers and local governments within specific timeframes, but has the authority to override local restrictions if necessary
  - ORES requires a pre-application process to identify major siting issues from state and local perspectives and to assess and when possible, mitigate, potential impacts
  - While ORES caps the timeline for negotiations between projects and local governments, state permit process is still easier when towns are amenable to revising restrictive laws
- **Introduction of ORES has helped limit effect of local restrictions on renewables development in New York, but developers believe agency requires more standardized review process to relieve uncertainty around both permit timelines and approval criteria**

State at a Glance

Decarbonization Goals	70% clean energy by 2030, 100% by 2040
State Permit Authority	State agency reviews and approves all projects and can override local restrictions
Local Permit Authority	Municipalities and counties can adopt ordinances and zoning requirements

Ohio

- **Historically, Ohio Power Siting Board (OPSB) has been responsible for permit reviews and approvals for projects >50 MW, with limited authority granted to local governments**
  - OPSB process is lengthy, but agency aims for consistency and seldom rejects projects outright
- **In response to rapid expansion of solar industry, state passed SB 52 in 2021, which requires projects to receive county permit approval in addition to OPSB permit**
- **Many developers believe that SB 52 has had a chilling effect on solar industry**
  - OPSB regulators lack full visibility into local restrictions, which can lead to contradictory review decisions at state and local level
  - Counties lack resources to make educated decisions around energy infrastructure siting
  - Third-party sources of reliable information such as local universities can fill in knowledge gaps between state, local, and private actors

State at a Glance

Decarbonization Goals	8.5% renewable energy by 2026
State Permit Authority	State agency reviews and approves all projects
Local Permit Authority	Counties can adopt ordinances and zoning requirements both proactively and retroactively, even after projects have been approved at the state level

Virginia

+ **Historically, Virginia Department of Environmental Quality (VDEQ) has been responsible for overseeing permit approvals for solar and wind projects <150 MW via Permit By-Rule (PBR) process**
  - Purpose of the PBR process is to bypass regulatory hearings, allowing projects to receive state permitting approval automatically ("by-rule") following completion of a standardized checklist of development items
    - PBR process includes 15 checklist items, including receipt of all necessary local approvals and certifications and completion of a public comment period and hearing held in the relevant jurisdiction
    - Confirmation of interconnection study progress is part of the PBR checklist, so state permitting approvals have been delayed by the PJM interconnection queue backlog and moratorium on new project studies
  - Larger projects are subject to more discretionary review process by State Corporation Commission (SCC). SCC review is also required for utility-built projects to be included in customer rate base.
+ **New legislation (HB 206) has disincentivized development by requiring projects disturbing >10 acres of forestland or prime agricultural soils, which includes most utility-scale renewables, to submit mitigation or conservation plans to DEQ**
+ **While limited local restrictions and streamlined state approval process led to rapid expansion of solar industry in Virginia, in 2020, a requirement for solar and storage projects to sign a siting agreement with the host locality was introduced**
  - Local governments can exercise veto power over solar projects by refusing to sign siting agreements or requiring prohibitively high financial compensation

State at a Glance

Decarbonization Goals	100% clean energy by 2050
State Permit Authority	Standardized state review process for projects <150 MW
Local Permit Authority	Municipalities and counties can adopt ordinances and zoning requirements

Washington

- **Energy Facility Siting Evaluation Council (EFSEC) is a centralized agency responsible for siting major energy facilities in Washington**
  - EFSEC was designed to overrule local objections to unpopular fossil-fuel and nuclear infrastructure and is mandated to make effective permitting decisions based on state priorities, although sites themselves are selected by developers
- **Projects can opt into EFSEC review, but most renewable energy projects opt for county-level processes which are simpler, faster, and cheaper**
  - Developers must pay fees for EFSEC review of projects
- **EFSEC does not have a history of recommending denial of permits, but does often condition its approvals on environmental and/or community impact criteria being met**
- **Transmission capacity remains main bottleneck affecting buildout of renewables, although local objections to industrialization of rural / agricultural land can slow down projects by forcing developers into EFSEC review**

State at a Glance

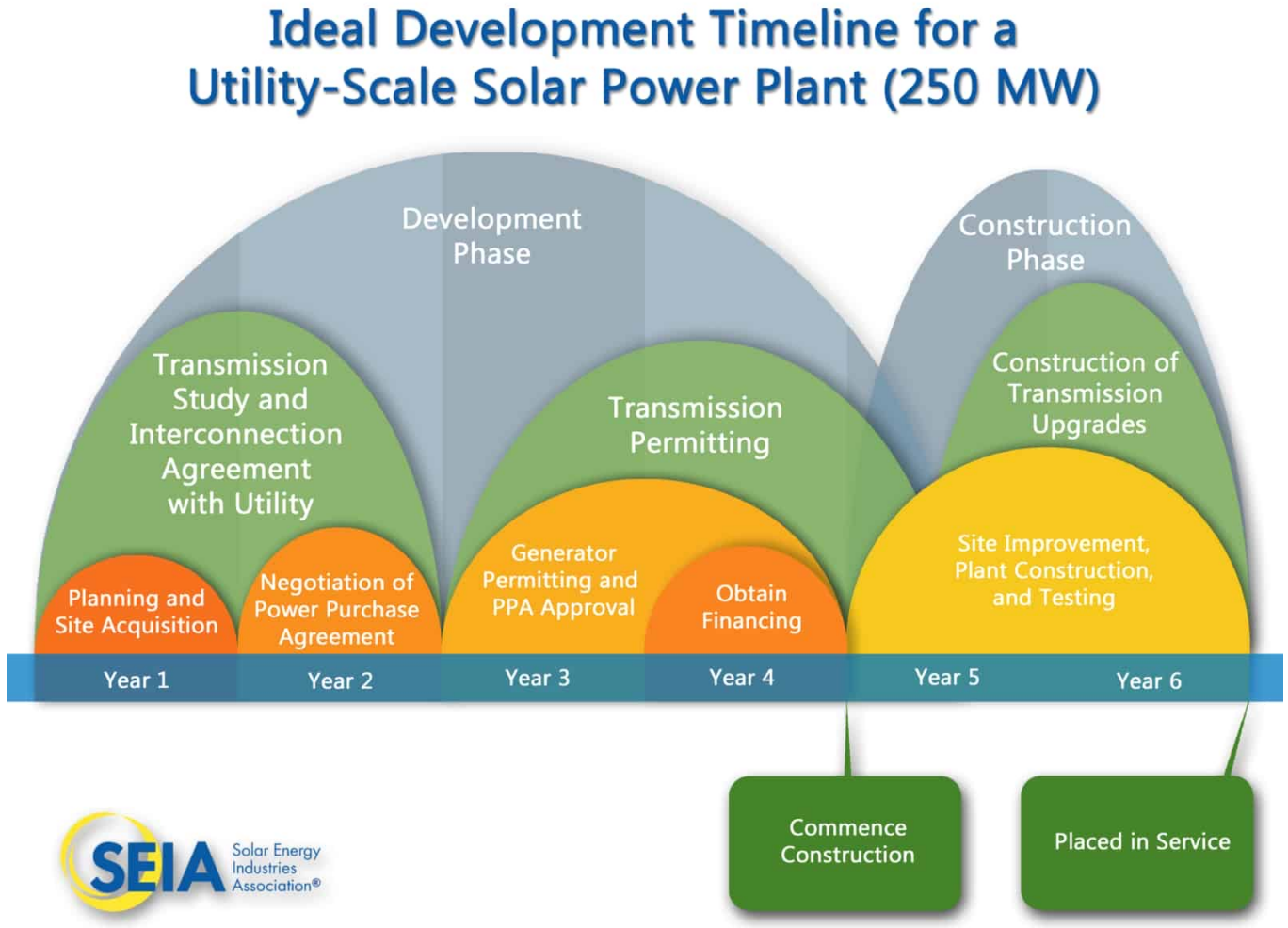
Decarbonization Goals	100% clean energy by 2045
State Permit Authority	State review council can override local restrictions and recommend approval to governor's office, which has final authority
Local Permit Authority	Projects can opt into county-level review process

Appendix: Overview of Project Development Process

Energy+Environmental Economics

Project Development Timeline

- **Process takes ~6 years from start to finish**
- **4-5 years consist of interconnection studies and approvals, with all other development activities taking place in parallel**
- **Construction of solar project itself takes ~2 years; transmission facilities can be built within months if equipment is procured in advance**
  - Wind development process is similar, albeit with longer lead time for site acquisition
- **Development timelines are lumpy; many tasks take place concurrently**



Source: Solar Energy Industries Association

Project Development Task List – Early Stage
Site Control / Project Siting

+ Step 1: Site Identification

- Involves desktop environmental and geotechnical studies to identify physical and/or regulatory barriers to building solar/wind infrastructure in project area
  - Common issues include presence of endangered species, zoning restrictions, protected habitat, or poor soil conditions
- Wind sites also undergo multiyear meteorological surveys to identify favorable microclimates for turbine siting

+ Step 2: Land Acquisition

- Typically structured as a 5-year lease option, which developer can execute at any time to secure land for 30-40 years once project is sufficiently de-risked to move forward
- Some developers favor sale-leaseback structures in which sites are purchased outright before construction, then sold and leased back to the project after COD

+ Step 3 (if necessary): Mineral Rights

- Some jurisdictions (e.g. Texas and Oklahoma) require separate deeds for surface and underground (i.e. mineral) property; securing mineral rights for solar projects can be challenging due to competition from oil and gas exploration
- Less impactful for wind because mineral rights owners can still maneuver around turbines to access subsurface

+ Step 4: Title Cleanup

- Investors require projects to have airtight title insurance to ensure that no other stakeholders can claim access to the project site based on prior leases or ownership rights, as these claims could provide grounds to litigate against the project after it gets built
  - Other stakeholders with valid claims to a project area might include: farmers, ranchers, gas pipeline operators, telecom providers, billboard companies
- Solar projects can carve title risks out of the lease area to avoid issues because of their smaller total land footprint than wind
- Wind projects are larger and require more siting flexibility, so developers need to execute side agreements with other land rights holders to cure title risks

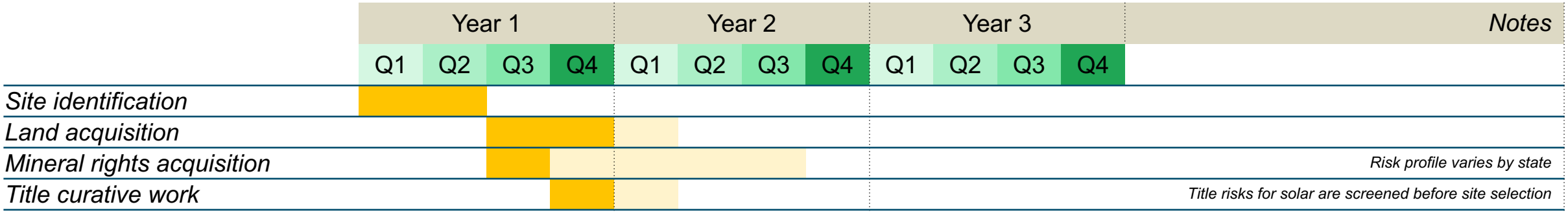
Solar vs. Wind Development

+ **Wind development is inherently riskier and more cost-intensive than solar, which leads to reduced competition and greater equity returns for wind developers**

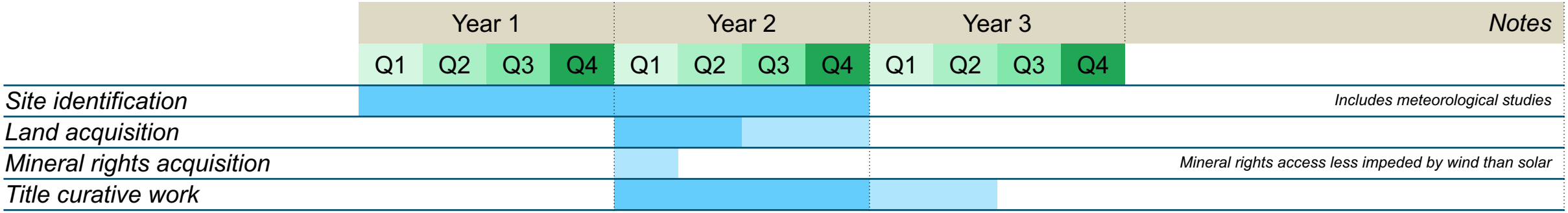
Category	Solar	Wind
Site Control / Real Estate	*Relatively few leases with title risks carved out in advance; mineral rights may be needed as well*	*Many leases and title risks cannot always be screened out, requiring case-by-case mitigation*
Environmental	*Stormwater runoff risk can affect native vegetation; construction activities limited in critical habitat*	*Risk of impact on migratory birds and bats; construction and operating activities limited in critical habitat*
Permitting	*Depends on jurisdiction*	*Depends on jurisdiction; FAA permits can be long-lead item*
Interconnection timeline	*Major queue backlogs and cost uncertainty*	
Offtake agreements	*Lots of competition and overlapping production shapes drive down price*	*More even production profile helps buyers avoid major price volatility in renewables-heavy markets*

Site Control / Project Siting Timeline

Solar Site Control Timeline



Wind Site Control Timeline



= potential timeline delays

Appendix: Overview of Permitting Process by State

Energy+Environmental Economics

Permitting Process by State

State	State Authority	Local Authority
California	Projects >50 MW can opt into the California Energy Commission (CEC) project certification process, which can overrule county restrictions	Counties have permitting authority for projects ≤50 MW and projects >50 MW that do not opt into the CEC process
Illinois	State legislature has established binding guidelines around how restrictive county zoning ordinances can be towards renewables.	Counties are responsible for establishing zoning codes within state guidelines and approving projects that meet requirements.
Indiana	None	Counties have sole discretion over project approvals
Maine	The Maine Department of Environmental Protection (DEP) provides an environmental review and approval of projects	Municipalities can adopt ordinances and zoning requirements
New York	State Office of Renewable Energy Siting (ORES) processes project applications and issues permits if all state and local requirements are met.	Counties and municipalities can implement zoning codes that restrict development, but may be required to adjust codes as part of a settlement process arbitrated by ORES in the state permit approval process.
Ohio	Ohio Power Siting Board (OPSB) is responsible for approving renewable energy projects after counties have approved projects	Under SB 52, individual counties have the right to restrict project development prior to OPSB review.
Virginia	Virginia Department of Environmental Quality (VDEQ) issues permits by rule (PBR) for projects <150 MW. The State Corporation Commission (SCC) approves projects >150 MW	Individual counties may issue Special Use Permits to renewable energy projects on a discretionary basis. Receiving local approvals is a precondition for a completed PBR application.
Washington	Projects can opt into the Washington Energy Facility Site Evaluation Council (EFSEC) review process. EFSEC can override county restrictions and makes recommendations of approval to the Governor, who provides the final approval of projects	Projects can opt into the county-level approval process