

# RESHAPING THE ENERGY FUTURE

## Renewable Energy and Land Trusts

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The Land Trust Alliance's mission is to save the places people need and love by strengthening land conservation across America.

Founded in 1982, the Alliance represents 1,000 member land trusts supported by more than 100,000 volunteers and five million members nationwide. The Alliance is based in Washington, DC, and operates several regional offices. More information about the Alliance is available at [www.landtrustalliance.org](http://www.landtrustalliance.org).

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# FOREWORD

In January 2017 the Land Trust Alliance launched a new program to help land trusts address climate change. Funded by a generous catalyst grant from the Doris Duke Charitable Foundation, the Land and Climate Program is a bold new Alliance program that provides land trusts with the strategies, training and tools they need to both adapt to and mitigate climate change in their land conservation work.

After investing decades of hard work and billions of dollars in conservation in the United States, land trusts are increasingly concerned about the impacts of climate change. They are seeking tools, resources and training to help them adopt climate adaptation and mitigation practices. They also are asking for help in addressing one of the principal ways that the nation ultimately will mitigate climate change: the build-out of large-scale renewable energy facilities.

To that end, the Alliance is excited to make this document available to the New York land trust community, as it reflects the commitment we made when we launched the Land and Climate Program. This document articulates the important role that land trusts can play in renewable energy development and offers specific guidance on ways that land trusts can participate in this important issue. We would like to thank the following land trusts and thought leaders: Audrey Friedrichsen from Scenic Hudson; Hal Brodie from Greene Land Trust; Maxanne Resnick from Woodstock Land Conservancy; Matt Decker from Orange County Land Trust; Chris Maron from Champlain Area Trails; Samantha Levy from American Farmland Trust; Joe Martens from New York Offshore Wind Alliance, and Ethan Winter and Mary McBryde all of whom were instrumental in shaping this resource by sharing their expertise in and experiences with engaging in renewable energy siting in their state and in their local communities.

The next five to 15 years are critical for global action if we want to abate the worst impacts of climate change, and land trusts have an opportunity and an obligation to take action in this arena. As more land trusts seek to play a role in renewable energy issues and siting, we hope this resource will provide some practical points of engagement.

**Kelly Watkinson**  
Land and Climate Program Manager  
Land Trust Alliance

# INTRODUCTION

A major energy transformation is occurring in the United States and will accelerate in the years to come.

Across the country, many state governments are taking immediate and decisive action to transition to a renewable energy system. Many political leaders recognize the need to reduce greenhouse gas emissions in order to avoid the worst impacts of climate change and are committed to building resilient, equitable and sustainable energy systems that ensure the future health of land, water, people and communities (see Appendix A, page 15). The scale of renewable energy development necessary to meet our country's energy demands, however, is considerable and will have a significant impact on the landscape. It is imperative that we strike a balance between this development and the protection of the lands and waters that provide clean air, clean water, food, habitat and special places for humans to live, work and enjoy.

**Renewable energy is not merely an interesting idea**, a new business investment strategy or another form of development: It is critical to mitigating the worst impacts of climate change, such as flooding, loss of native species and habitat and drought. Stakeholders, including land trusts, political leaders, developers, towns, local and state governments, public agencies, clean energy advocacy groups and nonprofits are exploring how to build a clean energy system, how to accelerate large-scale solar and wind development while also preserving the agricultural, ecological, recreational, scenic and other conservation resources that compose New York's natural assets.

**Land trusts can play an important role** in this rapidly evolving discussion. They can be the voice for conservation — helping to ensure that land conservation considerations are embedded into decision-making processes, that priority ecological sites and other important natural areas are not developed and that environmental impacts are minimized. In addition, land trusts can work with stakeholders to identify places where development is appropriate, including where conservation and renewable energy development can coexist.



**At this critical juncture**, land trusts can position themselves as both protectors of priority lands, waters and habitat and as problem-solvers in helping meet renewable energy development needs. As entities that care deeply about the land, land trusts should also care about climate change and renewable energy.

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## Leading the Way: New York's Progressive Energy Agenda

In New York, state government recognizes the need to reduce greenhouse gas emissions and is committed to building resilient, equitable and sustainable energy systems that ensure the future health of land, water, people and communities.

New York is committed to building a clean energy economy. In 2015, Governor Cuomo launched his Reforming the Energy Vision that set forth ambitious targets to reduce reliance on fossil fuels and transition to a renewable energy system. New York established a Clean Energy Standard, including the adoption of a goal that 50 percent of New York's electricity should be generated by renewable sources by 2030, also known as "50 x 30." This goal is part of a strategy to reduce statewide greenhouse gas emissions by 40% by 2030. As reflected in the Governor's Green New Deal, announced in January 2019, even more ambitious targets may be established. Additionally, the Governor announced \$1.5 billion in competitive awards to support large-scale solar, wind and energy storage projects. Regardless of the final plans and budgets, the transition to a renewable energy system in New York is happening and on a very large scale.

## New York — Article 10

In New York, electric generating facilities larger than 25 megawatts are sited according to New York State's Article 10 (see Appendix B, page 16), which encourages public participation at all stages of project development.

More specifically, at the project level, land trusts can engage at multiple points from beginning to end of a project.

- 1. Pre-project proposal.** Before projects are proposed, land trusts can work with communities to raise awareness and increase understanding; partner with municipalities to develop planning documents, such as codes and ordinances (see Appendix D for sample language you can customize, page 18) to guide siting; and serve as key stakeholders to identify areas that might be appropriate and suitable in the community for such projects versus areas with significant ecological, cultural or community value that should be protected.
- 2. Proposed projects.** Land trusts can participate in the public review process — writing letters, joining community meetings and engaging in other forms of outreach.
- 3. Permitted projects.** Land trusts can work with stakeholders to ensure that best practices will be used for siting and construction (pollinator friendly, etc.). There may also be opportunities to engage with developers directly in mitigating potential projects, particularly if they impact conservation easement lands despite best efforts to minimize harm.

## STATE OF NEW YORK ARTICLE 10

The public can participate in the Article 10 decision-making process by offering support, voicing concerns or asking questions about public health, safety, **the environment** and other factors. This process begins during the initial planning of a facility and continues throughout the siting review, construction and operation.

NYSERDA, <https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Siting/Article-10>, emphasis added.



## RULES OF THE ROAD

### LAND TRUST STANDARDS AND PRACTICES AND TERRAFIRMA

The land trust community is committed to excellence in its work and upholding the public's confidence in land conservation. Together land trusts have established a set of guidelines for how to run a land trust responsibly: *Land Trust Standards and Practices*.

These guidelines describe how to operate a land trust legally, ethically and in the public interest, with a sound program of land transactions and land stewardship. All Land Trust Alliance member land trusts must adopt the Standards as their guiding principles.

Standard 11 requires land trusts to have a program of responsible stewardship for their conservation easements. As part of a responsible program, land trusts must visit conserved lands annually to ensure that landowners are following the terms of the easement. It also requires land trusts to defend the easement terms when they find landowners are not in compliance. Defense can range from a simple reminder to the landowner to full-blown legal remedies.

To assist land trusts in their duty to uphold the terms of their easements, in 2011 the Land Trust Alliance and its member land trusts formed Terrafirma, an

insurance company to insure its members against the legal costs of defending conservation. Land trusts have no way of knowing when they will need to litigate to protect an easement or conserved property, how long litigation may take or how much it may cost. Terrafirma minimizes this risk and uncertainty by reducing a land trust's exposure to potentially high litigation fees. Terrafirma sends a clear signal that a land trust has the capacity to defend its easements and conserved lands, and coverage provides participating land trusts with access to a national team of experts.

Terrafirma provides a safety net for legal expenses so that land trusts have the confidence and capability to uphold conservation in perpetuity. These actions will help to create favorable case law, avoid unfavorable case law and protect the permanence of conserved land.

For more information on *Land Trust Standards and Practices*, go to [www.lta.org/standards](http://www.lta.org/standards).

For more information on Terrafirma, go to [www.terrafirma.org](http://www.terrafirma.org).



## Land Trusts and Renewable Energy: Key Questions

### What is the relationship between land conservation, climate change and renewable energy?

Land conservation, climate change and renewable energy are undeniably connected. Land trusts can protect as much land as possible, but if they do not address climate change — in particular, eliminating greenhouse gas emissions, in part through the transition to clean, renewable energy — those conservation investments and lands and waters will be jeopardized as the impacts of climate change continue to worsen and accelerate. Renewable energy development is part of the solution to mitigating the single biggest long-term threat to the lands that land trusts have already conserved and those they aspire to protect.

### What is the role of land trusts and what constraints do they have?

Land trusts possess an abundance of information and knowledge about the landscape — conservation data, maps, ecological monitoring and, also important, environmental and cultural history. Feeding this information into the policies and decisions that are being made now and will impact the landscape for generations is critical if they are to succeed in balancing land conservation and renewable energy development. These are complex issues, and engaging is not without challenges but, as this guide shows, land trusts are finding productive and meaningful ways to participate. However, no matter how they participate, they must follow industry best practices as described in *Land Trust Standards and Practices*. At the core, land trusts can help

1. **Institutionalize land conservation** considerations into policies and decision-making processes;
2. **Minimize environmental impacts** across the landscape and on a project-by-project basis;
3. **Protect priority ecological sites** and other natural areas while also working with partners to identify places where development is appropriate, including where conservation and renewable energy development can coexist.

### When do land trusts get involved?

At a macro level, there is good reason for land trusts to get involved now, when roles, responsibilities and expectations are being defined and policies are being made. Land trusts can collaborate with community and government

leaders to understand the challenges and opportunities associated with renewable energy development; partner with stakeholders to evaluate the impacts of specific projects; educate their constituents and community at large regarding land trust work and renewable energy concerns; work with developers to direct siting decisions away from sensitive areas and maximize mitigation activities; and help create broad community awareness of, and support for, this energy transition.

## GREENE LAND TRUST

**To preserve and protect the rural character of Greene County**, the Greene Land Trust works with a wide range of partners to facilitate a balance between sound development and effective conservation. The Greene Land Trust's primary goal is to work with the public and private landowners to protect natural and cultural resources for future generations.

Engaging in energy: The accredited Greene Land Trust, which hired its first part-time executive director in 2019, is conserving land near a proposed solar development. The property provides habitat for two endangered and threatened bird species, the northern harrier and the short-eared owl, and the development facility would consume approximately 3,000 acres, of which approximately 1,000 acres would house solar panels. Given its expertise regarding the biological resources of this area and its passion for protecting this important habitat, the land trust jumped in — submitting comments as part of the Article 10 review process during the preliminary scoping statements (to view the letter, see <https://on.ny.gov/2LuVity>). (See Appendix B for a description of the Article 10 process, page 16.)

HAL BRODIE, VICE PRESIDENT, BOARD OF DIRECTORS



## Land Trusts in New York

New York land trusts — both large and small — are responding in various ways to renewable energy development. Some land trusts are jumping in and engaging with town planning boards, state licensing agencies and developers and trying to be part of the stakeholder group that delivers on the administration’s ambitious energy goals. For example, Hal Brodie, vice president of the Greene Land Trust reflected:

*“We usually do not take positions, but we must now. We must at least monitor and participate in these proceedings because we care about the grasslands, the habitat and the birds. We are participating in the Siting Board meetings and have drafted and submitted comments on preliminary scoping statements — we are learning as we go.”*

Other land trusts are staying focused on traditional land protection, conserving highest priority lands, and are not yet inclined to get involved for a variety of reasons, including, but not limited to, capacity issues and demands on time away from existing programmatic work. For example, Matt Decker, director of conservation and stewardship for the Orange County Land Trust, shared:

*“The development pressures in our region are significant, and it just doesn’t make sense for us to be heavily involved in renewable energy and solar development when there are so many other development threats. We are running as fast as we can and focusing our limited resources to take advantage of the land protection opportunities that exist and are not involved in advocacy on individual developments — we just don’t have the capacity, and it is not practical.*

*“We do engage in addressing climate change in our conservation planning and considering the carbon impacts of our projects. Our role at this time is to prevent development on the most important places.”*

## Overcoming Challenges

It is understandable that some land trusts are reluctant to tackle renewable energy. It is a complex issues and many challenges exist. Key challenges include:

- 1. High degree of complexity.** Renewable energy siting and design is inherently complex and is compounded by differing requirements for different types and sizes of development, multiple government agency involvement and unfamiliar partners. At this early stage, however, when these issues are actively being discussed, it is an opportune moment to get involved, to learn and to collaborate with other stakeholders who are charting a path forward to deliver on the state's clean energy goals.
- 2. Capacity constraints.** Land trusts with limited staff and/or technical expertise or time constraints may need to explore ways to balance this work with other priorities. They can learn from, and partner with, land trusts and other nonprofits, reach out to new partners and community leaders and discuss how they can bring their expertise and knowledge to the table.
- 3. Managing relationships with stakeholders.** Land trust members, donors, landowners, staffs and boards may have differing views about renewable energy and how to weigh the costs and benefits of proposed
- 4. Community risks.** Community opposition to renewable energy projects is common and often contentious. Land trusts can help by getting ahead of difficult projects. Education, outreach and communication are important strategies to manage these risks. Land trusts can be a resource — helping to reduce fear and misinformation and articulate the important connection between renewable energy and conservation. It is essential for land trusts to avoid categorically saying “no”; rather, to say, “Yes, renewable energy development can be accommodated here on less environmentally sensitive lands.”
- 5. Increased competition.** Often renewable energy developers have greater resources at their disposal, which may compel landowners to lease their land for energy development rather than conserve it. Land trusts will need work closely with landowners, developers and community leaders in order to direct development away from properties (or portions of property) that possess significant conservation value.

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### Despite Significant Challenges, Land Trusts Have An Important Role To Play. As One Small Land Trust President Summarized Best:

“It is difficult as a land trust to deal with these development issues, but we need to keep in mind the huge problem that we are facing in climate change and how

we are going to address it. And we must keep that larger issue in mind when we are thinking about how, or whether, to engage in the renewable energy space.”

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## Land Trusts: Engaging in Renewable Energy

Many land trusts recognize the important connection between renewable energy, climate change and land conservation. They understand that it is not only important for land trusts to be supportive of renewable energy as a critical tool in mitigating climate change, but also to understand the potential threats to land and water posed by the scale of this development, particularly if it is not balanced with conservation. This understanding makes land trust engagement all the more critical. Fortunately, land trusts can participate in a variety of internal and external ways.

### Opportunities — Internal Engagement

#### 1. Support/host internal learning sessions and discussion.

Conduct proactive board and staff discussions to develop a clear, shared understanding of the issues and the organization's role, including developing necessary policies and/or principles to guide this work and a communication and outreach strategy to connect with landowners, members, donors and other key stakeholders. Specific actions may include:

- a. Invite experts and other stakeholders to share with your board and staff general information on renewable energy to increase awareness and understanding, as well as details on specific proposed projects in your area or region.
- b. Explore key issues together:
  - i. Examine the relationship between land conservation, climate change and renewable energy development.
  - ii. Identify the general benefits and negative impacts of renewable energy, including potential siting in your community.
  - iii. Discuss the reputational and real implications of being perceived as not engaged in climate change solutions and/or of being perceived as being against climate change solutions.
  - iv. Recognize the impact of local decisions on the larger issue of climate change and what role communities can play to help mitigate climate change.
  - v. Explore the unique role or particular perspective that land trusts bring and the potential consequences of decision-making and policy development in the absence of land trust input.

**2. Examine your portfolio of conserved land.** Carefully assess the potential for renewable energy projects on conserved land. Be it utility-scale deployment or community or distributed generation on rooftops and gardens, some land trusts have found renewable energy to be compatible with land management objectives and conservation easements.

**3. Create an internal renewable energy lead.** Appoint a board member or trusted volunteer to attend meetings and monitor related news items and events and bring information to land trust meetings for discussion and decision-making. The focus should be on potential renewable energy development, including specific proposals put forth by governments and developers.

**4. Review conservation easement language.** Prepare conservation easement language that will allow renewable energy development in situations where it is compatible with the conservation purposes.



# TUG HILL TOMORROW LAND TRUST

**Tug Hill Tomorrow Land Trust's mission is to protect the wildlands, working forests and farms** of the Tug Hill region and surrounding areas and to promote appreciation of the region's natural and cultural heritage, for present and future generations.

- As a science-based organization, the accredited Tug Hill Tomorrow Land Trust believes that it is important for landowners to have access to relevant information and works to connect them to research and resources related to land management and climate information. It has devoted a large section of its website to educate the community about climate change and how the land trust's work and the actions of individuals can help slow the pace of climate change.

- Tug Hill's conservation easements currently allow for renewable energy to be compatible with the lands it is conserving. Tug Hill allows for up to 2% of the land to be used for renewables as well as lands within the building envelope.
- Its conservation easements with local farm families will allow for composting and soil enrichments to help with carbon farming. Depending on the farm, this also includes the ability to site methane gas digesters and sell that power back to the grid (generating income for farmers, as they might by selling other crops, such as milk or produce).

LINDA GARRETT, EXECUTIVE DIRECTOR

## Opportunities — Engaging Externally

- 1. Build partnerships.** Partner with other land trusts that have capacity to engage and can share resources and information and explore new partnerships with organizations focused on clean energy advocacy, housing, health, community development, environmental justice and jobs to build multistakeholder, collaborative solutions to energy siting and development.
- 2. Work with government agencies and municipalities.** Encourage local and regional government officials to create planning processes and partner with communities as they develop zoning and planning policies around siting and design.
- 3. Be a voice for conservation.** Land trust participation ensures that conservation-minded people are involved. They can articulate the potential environmental impacts of proposed developments by attending meetings and conducting stakeholder outreach. Most important, they can provide feedback on siting and design proposals to help steer projects away from the most sensitive lands while also helping to find places where development is appropriate (rooftops, previously disturbed sites, etc.). Land trusts possess deep and local knowledge of conservation priorities and can share conservation data,

maps and so forth to influence decision making around siting, design and development and to help ensure that environmental considerations are part of the discussion.

- 4. Explore opportunities to work with developers to maximize conservation outcomes.** When possible, work with developers to minimize impacts of proposed development and participate in discussions about mitigation and how land trusts can help. Some land trusts are talking with developers about potential roles in their mitigation efforts, which could help maximize the conservation outcomes (see Appendix C, page 17).
- 5. Support landowners.** In some circumstances, where conservation and development can coexist, the additional income to landowners, particularly farmers, may provide critically needed revenue to help stabilize their financial situation and possibly allow them to stay on the land.
- 6. Advocate for landscape-scale or regional planning.** Many areas have been slow to adopt landscape-scale or regional planning even though there is broad consensus around the need for these critical planning approaches. Land trusts and other nonprofits can champion the need for this work and participate as valued community organizations.

## WOODSTOCK LAND CONSERVANCY

The accredited Woodstock Land Conservancy (WLC) is run by a small staff and an all-volunteer board. WLC owns and manages undeveloped land and works with landowners to permanently protect their property through conservation easements and by acquiring their land through donation or sale. WLC also provides nature education and outdoor activities to the community. WLC has a strong foundation in the community that makes it possible to protect land that would otherwise be lost forever.

- The Town of Woodstock adopted a carbon neutral resolution in 2007 and has succeeded in meeting this goal. It installed solar panels at the town garage, put in geothermal and heat pumps, is buying the town's electricity from a hydropower plant and continues to explore other projects.
- WLC collaborates with the community, advocating for land and natural resource conservation while striving to be a resource for town officials and other organizations that are concerned with the environment, energy and development and advocating for land and natural resource conservation.
- WLC will be assessing its portfolio of conserved properties to determine whether opportunities exist to site small-scale renewable energy development on these lands. WLC will make this good faith effort to examine these properties despite expecting few opportunities given the mountainous and heavily forested terrain.
- WLC hosted a four-part public, educational series that highlighted different solutions to climate change impacts, including one on green infrastructure, to which it invited municipal officials from the area towns.

MAXANNE RESNICK, EXECUTIVE DIRECTOR

## CHAMPLAIN AREA TRAILS

Champlain Area Trails (CATS) creates and maintains hiking and cross-country ski trails in the Champlain Valley that link communities, connect people with nature and promote economic vitality. As an accredited land trust, CATS protects natural areas, farmland, clean water and scenic vistas.

CATS permits renewable energy in its conservation easements by allowing “geothermal, windmills, solar arrays, and/or other green (renewable) energy sources” for interested landowners, provided that energy production should primarily be for use on the property. Future easements might allow for the energy to be distributed into the network and credited to the property.

CHRIS MARON, EXECUTIVE DIRECTOR

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## ORANGE COUNTY LAND TRUST

The mission of the Orange County Land Trust (OCLT) is to preserve water resources, critical habitat, rural and urban farmland, scenic viewsheds and ecosystems in and around Orange County for the benefit of all who depend on them.

- The accredited Orange County Land Trust is facing renewable energy issues, frequently fielding calls from landowners and developers. However, it is not playing an active role beyond sharing information, such as the Scenic Hudson siting guidelines and additional materials. OCLT could possibly get involved on specific projects where there are opportunities to blend land protection with responsible development. For example, OCLT just learned about a proposed solar development that would be located in the heart of the least developed area in its region. Though this would not be the area OCLT would choose for development, it may create a conservation opportunity on the remainder of the property.
- OCLT has made allowances for limited solar development in agricultural easements, which compose about half of its conservation projects — usually for on-farm use and always limited by area. The public funding sources OCLT uses often come with specific easement language requirements, which restrict consideration of additional renewable energy uses.

MATT DECKER, DIRECTOR OF CONSERVATION AND STEWARDSHIP

## SCENIC HUDSON

Scenic Hudson preserves land and farms and creates parks that connect people with the inspirational power of the Hudson River, while fighting threats to the river and natural resources that are the foundation of the valley's prosperity.

In 2018, the accredited Scenic Hudson published *Clean Energy, Green Communities*, a groundbreaking guide for stakeholders seeking to better understand how to engage in renewable energy siting and development, that also defines a set of siting and design principles (at right). Scenic Hudson is also providing feedback on potential impacts of proposed large-scale solar developments through the state Article 10 review process, engaging with communities on solar zoning development and conducting outreach to identify issues and solutions with partners and stakeholders.

### Siting and Design Principles

- Prioritize development on previously disturbed areas
- Protect agricultural lands and promote co-location
- Protect natural beauty
- Protect ecological resources
- Protect historic and cultural resources
- Maintain the purpose of conserved lands
- Avoid and minimize new transmission and distribution lines
- Use construction and operation best practices
- Promote sustainable renewable energy development through planning and zoning

AUDREY FRIEDRICHSEN, LAND USE AND ENVIRONMENTAL ADVOCACY ATTORNEY

Clean Energy, Green Communities, 2018  
<http://bit.ly/scenic-hudson-renewables>.

## AMERICAN FARMLAND TRUST

The mission of American Farmland Trust (AFT) is to save the land that sustains us by protecting farmland, promoting sound farming practices and keeping farmers on the land.

American Farmland Trust has created smart solar-siting guidelines (see Appendix D, page 18) and co-convened, along with the New York State Department of Agriculture and Markets and Cornell University, Community and Regional Development Institute, the "Farmland Protection Forum: Smart Solar Siting" to discuss these principles with stakeholders.

### Smart Solar Siting Principles

- Maximizes potential for solar while minimizing impact on most productive farmland
- Is integrated into local policies and laws to guide siting to less productive farmland or previously disturbed land
- Requires projects to be built in a way that preserves the ability for land to be farmed
- Encourages dual use/co-location of energy generation and active farming

### Key Steps to Encourage Smart Solar Siting in Local Land Use Laws

1. Include a statement of purpose
2. Define important local farmland to protect
3. Define different approval processes for different scales: small versus large
4. Permit renewable energy for on-farm use
5. Prioritize siting on unproductive land and previously disturbed areas
6. Require developers to construct, operate, maintain and decommission arrays located on farmland in ways that follow New York State Department of Agriculture and Markets (NYSDAM) guidelines to protect active agricultural use for the future
7. Encourage dual use/co-location of photovoltaic (PV) solar with active farming

SAMANTHA LEVY, NEW YORK POLICY MANAGER

# CONCLUSION

New York is embarking upon a massive clean energy transformation. Government leaders are advancing a progressive energy agenda that will require significant scaling of renewable energy development. While critical to avoiding the worst impacts of climate change and, ultimately, ensuring the future health of land, water, people and communities, this development will have a significant impact on the landscape. As this transformation accelerates, it is imperative that we balance renewable energy development with land and water conservation.

**Land trusts have an essential role to play. They can ensure that conservation has a voice and is an essential consideration during this clean energy transformation. They can help embed land conservation considerations into decision-making processes, protect priority ecological sites and other natural areas and minimize environmental impacts. Land trusts can also work with stakeholders to identify places where development is appropriate, including where conservation and renewable energy development can coexist.**

Land trusts are already addressing climate in a variety of ways — integrating climate resilience science into strategic planning, advancing natural climate solutions and developing carbon offset projects. Renewable energy presents another opportunity for land trusts to address climate change, to become valued community partners in helping to solve a complex issue and, ultimately, to safeguard our nation's natural assets.

Playing a dual role as a protector of important conservation values and as a participant in helping New York State meet its aggressive renewable energy agenda, land trusts will be viewed as strong community partners in combatting climate change and will strengthen ties to state leaders who are committed to this energy transition.

**Not engaging and not being part of the conversation may pose far greater risks — the risk of not being at the table, and, ultimately, not giving a voice to the lands and waters that land trusts care about deeply about, including those we have already conserved and those we aspire to protect.**

The good news is that land trusts have a long history of learning, working collaboratively with each other and their communities and adapting to changing circumstances and scientific information. Climate change is part of the challenge of long-term conservation. How land trusts respond to this urgency in New York and across the country is how land trusts will position themselves as partners in conservation for generations to come.

# APPENDICES

**Appendix A** What Is Renewable Energy, and What Are the Benefits?

**Appendix B** New York State, Article 10 Brief Overview

**Appendix C** Developer Siting Considerations

**Appendix D** American Farmland Trust: Examples of Land Use Laws That Support Renewable Energy While Protecting Farmland

**Appendix E** Renewables on the Ground Roundtable Report

**General Resources and Links**

## Appendix A: What Is Renewable Energy and What Are the Benefits?

Renewable energy takes many different forms, and each will have specific impacts to consider when evaluating its effect on the land and on the communities. In New York, utility-scale solar, distributed solar (electricity produced at or near the point where it is used) and land-based wind

are likely to be the dominant types of projects pursued to achieve renewable energy goals.

Transitioning to a clean energy system is necessary to mitigate climate change, but renewable energy also delivers numerous benefits to human and natural communities.

### RENEWABLE ENERGY



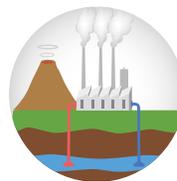
Solar Energy



Wind Energy



Tidal Energy



Geothermal Energy



Hydroelectricity



Biomass Energy



Solar energy is radiant light and heat from the sun that is harnessed using a range of ever-evolving technologies.



Wind energy is the use of air flow through wind turbines to mechanically power generators for electricity.



Tidal energy is a form of hydropower that converts the energy of the tides into electricity or other useful forms of power.



Geothermal energy is thermal energy generated and stored in the Earth. Thermal energy is the energy that determines the temperature of matter.



Hydroelectricity is power derived from the energy of falling water or fast-running water, which may be harnessed for useful purposes.



Biomass contains stored energy. That's because plants absorb energy from the sun through the process of photosynthesis. When biomass is burned, this stored energy is released as heat.

## BENEFITS OF CLEAN, RENEWABLE ENERGY

- **Benefit public health** by improving air and water quality through reduced emissions
- **Reduce impacts to natural resources**, such as land and water, which are used more intensively by fossil-fuel energy generation
- **Increase reliability of the state's energy supply** because it will be more diverse and less dependent on a single source
- **Increase resiliency of the regional electricity supply**, enhancing its ability to handle severe weather events
- **Create regional economic benefits** — including manufacturing of renewable energy equipment, new jobs and revenue creation
- **Diversify the income stream** for willing landowners, often enabling them to remain on the land

Source: Scenic Hudson

## Appendix B: New York State, Article 10 Brief Overview

Major electric generating facilities larger than 25 megawatts are sited according to New York State's Article 10. This comprehensive law provides guidance to the New York State Board on Electric Generation Siting and the Environment (Siting Board) about authorizing construction and operation of major electric generating facilities. Article 10 streamlines the application process for developers, while providing a rigorous process for local input and ensuring environmental and public health laws are followed.

### Article 10 Process

**Step 1: Public Involvement Program.** Developers are required to implement public involvement programs in the respective communities at least 150 days before submitting their preliminary scoping statement and official applications to the Siting Board.

**Step 2: Preliminary Scoping Statement.** The preliminary scoping statement is a written document informing the

Siting Board, other public agencies and the community about the project, including a description of the proposed facility, potential environmental and health impacts, proposed studies to evaluate those impacts, proposed mitigation measures and reasonable alternatives to the project.

**Step 3: Formal Application.** After the public involvement program and preliminary scoping statement are filed, developers must then submit a formal Article 10 application to the Siting Board, which includes the same information as the preliminary scoping statement but in greater detail.

**Step 4: Siting Board Decision.** The Siting Board must make its final decision about whether to issue or deny the certificate within 12 months of the date that a developer's application is deemed complete.

NYSERDA, <https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Siting/Article-10>.

## Appendix C: Developer Siting Considerations

Many factors go into a developer's selection of a site for renewable energy development, with economic factors playing a primary role. Knowing features that make for a good location can help land trusts identify places that complement land conservation and add benefit to their communities:

**1. Solar or wind resources.** The first siting consideration is the presence of high-quality renewable resources — that is, how many hours per year will wind speed be adequate to drive a wind turbine? For solar, a developer will consider a site's aspect and slope — which direction a slope faces, how steeply the land pitches. South-facing slopes with a low gradient are optimal. The acreage needed to site the facility is dependent on the type and scale of project.

**2. Grid connection potential.** Grid infrastructure limits the number of sites that are feasible for renewable energy development. Cost of interconnection and a scarcity of places to connect with the electric grid can be a limiting factor for siting. Utilities can provide a circuit map with baseline circuit and substation information to screen available circuits.

You can find hosting capacity maps and useful links at <https://on.ny.gov/2KyFSoD>.

**3. Land characteristics.** For solar, developers seek sites that are relatively level and flat (to minimize grading requirements and maximize sun exposure), as well as sites open and free of woody vegetation (to minimize clearing and shading). Other considerations may include whether a site is capable of being screened from public view, is marginal or sub-prime for agriculture or will require extensive clearing. It also must be available for the life of the project — for example, 30-plus years.



## Appendix D: American Farmland Trust:

### Examples of Land Use Laws That Support Renewable Energy While Protecting Farmland

#### Key Steps To Encourage Smart Solar Siting In Local Land Use Laws

1. Include a statement of purpose
2. Define important local farmland to protect
3. Define different approval processes for different scales: small versus large
4. Permit renewable energy for on-farm use
5. Prioritize siting on unproductive land and previously disturbed areas
6. Require developers to construct, operate, maintain and decommission arrays located on farmland in ways that follow NYSDAM guidelines to protect active agricultural use for the future
7. Encourage dual use/co-location of PV solar with active farming

#### EXAMPLES

*The examples provided below should be used as a guide and tailored to local situations and concerns.*

#### Statement of Purpose

**Town of Red Hook.** “The Town of Red Hook finds that protection of agriculture is essential to implementing the goals of the Town of Red Hook Comprehensive Plan and Open Space Plan.”

**Town of Farmington.** The goal is to: “enhance agricultural viability and preserve productive agricultural land resources and provide public utilities that meet present needs and anticipate future needs of residents; and... support green economy innovations; and support NYS’s energy goals.”

#### Definition, Productive Farmland

For solar PV facilities, project sponsors should avoid installing solar arrays on the most valuable or productive farmland. This can include specifications based on current use or soil type:

1. Prime farmland soils
2. Prime farmland soils (if drained)
3. Soils of statewide importance
4. Unique soils

Productive Farmland, Common: Land designated by the U.S. Department of Agriculture as “prime farmland or prime farmland if drained, representing land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops and is also available for these land uses, or unique soils, or land designated as farmland of statewide importance by the USDA, New York State Department of Environmental Conservation or the U.S. Army Corps of Engineers.”

#### Avoiding Productive Farmland

**Village of Lyndonville.** “Utility-scale solar energy systems are not allowed on Prime Farmland except pursuant to NYS Agricultural and Markets Law which allows agricultural operations in State-certified agricultural districts to install solar energy systems producing up to 110% of the farm’s electric load.”

**Town of Rochester.** “Large scale solar energy systems shall not be permitted to be constructed on areas of prime farmland as designated by the USDA.”

**Town of Sennett.** “No Solar Farm shall be installed on Prime Farmland, farmland of statewide importance,

farmland of local importance, of unique soils as defined by the US department of Agriculture (USDA), New York State Department of Environmental Conservation, the U.S. Army Corps of Engineers, or local governing body.”

**Town of New Scotland.** “No Large scale solar project shall be permitted on: a) any site that is prime farmland or which contains prime soils. The applicant may submit information to demonstrate that the soils on the proposed project site are not prime soils or have poor drainage.”

**Town of Persia.** Small and medium scale: “shall undergo site plan review within residential and commercial districts: no solar array shall be installed on prime farmland, farmland of statewide importance, farmland of local importance or unique soils.”

Large scale: “subject to site plan review; no large scale ground mounted solar array shall be installed on prime agricultural soils as defined by DEC, US Army corps of engineers or other...”

**Town of Marletown.** “Large Scale Solar Energy Systems shall not be permitted to be constructed on areas of the first 4 prime farmland soil types as designated by the US Dept. of Agriculture: Ba-Barbour loam...CnA, CnB-Chenango gravelly silt loam...Te-Teel silt loam... Un-Unadilla silt loam.”

### Permitting Renewable Energy for On-Farm Use

Agricultural Districts law: Energy-generating systems that produce up to 110 percent of on-farm energy needs are considered farm equipment as it relates to any local laws or regulations and any protection under the Agricultural Districts law.

**Town of Copake.** “A solar energy system located on a farm operation as defined in S301 (11) of NYSDAM law and

located in an agricultural district which primarily serves the needs of the farm and produces up to 110% of farm’s needs shall be deemed a small scale solar energy system.”

**Town of Red Hook.** Farms that are within an agricultural district are generally exempt from the large-scale solar energy system regulations, provided that the solar equipment is considered on-farm equipment. Must still obtain site plan waiver approval or site plan approval from planning board. Exemption from requirement to obtain site plan review for systems that are for on-farm use that generate 110 percent of farm’s energy needs.

### Construction Standards

**Town of Goshen.** “Installation on farms shall abide by rules, standards and regulations established by NYSDAM. The construction and installation of any energy system shall be designed to minimize any adverse impacts on the productivity of the soil and the farm operation.”

### Access Roads

Standard: “Roadways within the site shall be constructed of materials appropriate to the site and shall be designed to minimize the extent of the roadways constructed and soil compaction.”

**Town of Farmington.** “Access roads are to be located along the edge of agricultural fields, in areas next to hedgerows and field boundaries and in the nonagricultural portions of the site. The width of access roads across or along agricultural fields is to be no wider than 20 feet so as to minimize the loss of agricultural lands and comply with the State of New York fire access code. The surface of solar farm access roads to be constructed through agricultural fields should be level with the adjacent field surface where possible.”

### Utility and Transmission Lines

Standard: “All on-site utility and transmission lines shall, to the extent feasible, be placed underground.”

**Town of Farmington.** “Structures for overhead collection lines are to be located upon the nonagricultural areas and along field edges where possible. Electric interconnect cables and transmission lines are to be buried in agricultural fields wherever practical. Interconnect cables and transmission lines installed aboveground shall be located outside agricultural field boundaries. When above-ground cables and transmission lines must cross agricultural fields, taller structures that provide longer spanning distances and locate poles on field edges to the greatest extent practicable. All buried electric cables in cropland, hayland and improved pasture shall have a minimum depth of 48 inches of cover. At no time is the depth of cover to be less than 24 inches below the soil surface.”

### Operation

**Town of Rochester.** Set up a registration system whereby developers must register with continuous re-registration during year 2 and 3 with written certification that all town codes are being followed (including onsite vegetative maintenance).

**Town of Goshen.** “Where site plan approval is required for any energy management system on a farm, a plan that prescribes the conservation and natural resource management measures for the conservation, protection and development of natural resources, the maintenance and enhancement of agricultural or horticultural productivity, and the control and prevention of nonpoint pollution shall be required as part of the site plan application.”

**Town of Newfield.** “Land underneath solar panels within agricultural areas should be maintained as vegetative cover.”

### Dual Use/Farm Considerations

**Town of Red Hook.** “Design of ground-mounted solar energy systems shall favor concurrent use of the land for livestock grazing or similar sustainable use.”

**Town of Shawangunk.** “Non-invasive, native ground cover under and between the rows of solar panels shall be low-maintenance, drought-resistant, non-fertilizer-dependent and, where required by the Planning Board, shall be pollinator-friendly to provide habitat for bees.”

### Decommissioning

Standard: The plan shall demonstrate how the removal of all infrastructure and the remediation of soil and vegetation shall be conducted to return the parcel to its original state prior to construction. Plan must ensure the site will be restored to a useful, nonhazardous condition without delay, including restoration of the surface grade and soil after removal of equipment and revegetation of restored soil areas with native seed mixes, excluding any invasive species.

**Town of Mexico.** “All topsoil disturbed during construction, reconstruction or modification of Large Scale Energy Systems shall be stock piled and returned to the site, reseeded with grass and/or planted with low level vegetation capable of preventing soil erosion and airborne dust upon completion of the construction.”

**Town of Goshen.** “Must restore the land to the condition which existed before construction, including an adequate layer of topsoil where existing topsoil has been removed or eroded...”

**Town of Farmington.** “Environmental Monitor shall oversee decommissioning.” “Excess concrete used in the construction of the site is not to be buried or left on the surface in active agricultural areas.” (The town also includes specific guidelines for decompaction, regrading repairing drainage structures, mitigation of topsoil deficiency and a monitoring and remediation period of no less than two years to ensure ability to farm the land in the future.)

## Appendix E: Renewables on the Ground Roundtable Report

The Nature Conservancy and the Alliance for Clean Energy convened the Renewables on the Ground Roundtable, a collaborative stakeholder process, to produce *Accelerating Large-Scale Wind and Solar Energy in New York: Principles and Recommendations*. This report emphasizes the importance of accelerating wind and solar development through proactive planning to avoid, minimize and mitigate impacts, while increasing efficiency, reducing costs and protecting the open spaces people love.

### 1. Accelerate the development of renewables to meet the renewable energy standard

Accelerate construction of cost-effective wind and solar installations while maintaining the protection of natural resources and recognizing community and stakeholder values and environmental justice.

### 2. Contribute to the success of New York's renewable energy standard and greenhouse gas reduction goal

There is an opportunity and an obligation to contribute to the success of the renewable energy standard to reduce greenhouse gas emissions to counter climate change. Achieving these goals will require investment in and public support for large-scale renewable energy facilities, as well as distributed resources and greater energy efficiency in New York state.

### 3. Increase understanding of the economic benefits of large-scale renewable energy

Promote the economic growth, jobs, health, environmental and environmental justice benefits at the state and local levels of transitioning to clean and affordable energy.

### 4. Assist local governments and fully engage communities in advancing renewable development

Provide communities and local governments with credible guidance, tools, resources and support on land-use planning and zoning best practices to proactively plan for renewable energy development.

### 5. Increase awareness of policies and practices: (1) avoid, (2) minimize and (3) mitigate impacts

Increase awareness of this policy framework among all stakeholders to build public confidence in siting practices.

### 6. Make New York's energy siting processes more efficient and less expensive

Seize opportunities to make the Article 10 and State Environmental Quality Review Act (SEQRA) siting processes more efficient and less expensive, without sacrificing appropriate environmental review, stakeholder input or public participation.

### 7. Balance farmland protection and renewable development

Provide revenue for farmers while minimizing the removal of productive farmland by providing tools to help achieve and balance both outcomes.

### 8. Provide renewable energy while advancing environmental justice and equity

Pursue a comprehensive approach by diverse stakeholders that includes partnering with local communities, reduction of harms from conventional energy, equitable sharing of benefits and fostering economic and energy democracy to reduce environmental injustices and help to ensure the success of renewable energy projects and the renewable energy standard.

### 9. Clarify property taxation for renewables

Make tax valuation methodologies and implications clear, transparent and understandable for local jurisdictions and landowners.

### 10. Proactively plan for transmission

The New York Independent System Operator (NYISO), New York State agencies, transmission owners, developers and stakeholders should work together to identify and address transmission needs while minimizing impacts to environmental and community resources at a pace necessary to achieve the renewable energy standard mandate.

## General Resources and Links

*Accelerating Large-Scale Wind and Solar Energy in New York: Principles and Recommendations*, The Nature Conservancy and the Alliance for Clean Energy New York, October 2017.  
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<http://climatechange.lta.org/siting-renewables-ne/>.

*Smart from the Start: Responsible Renewable Energy Development in the Southern San Joaquin Valley*, by Kate Kelly and Kim Delfino, Defenders of Wildlife, 2012.  
[http://climatechange.lta.org/wp-content/uploads/cct/2015/04/smartfromthestartreport12\\_print.pdf](http://climatechange.lta.org/wp-content/uploads/cct/2015/04/smartfromthestartreport12_print.pdf).

# 100% NEW YORK

Transition to 100% wind, water, and solar (WWS) for all purposes  
(electricity, transportation, heating/cooling, industry)



Residential rooftop PV  
**3.6%**



Solar PV plants  
**35.8%**



CSP plants  
**0%**



Onshore wind  
**10%**



Offshore wind  
**40%**



Commercial/govt  
rooftop PV  
**3.2%**



Wave devices  
**0.8%**



Geothermal  
**0%**



Hydroelectric  
**6.5%**



Tidal turbines  
**0.1%**



## 40-Year Jobs Created

Number of jobs where a person  
is employed for 40 consecutive years

Operation jobs:



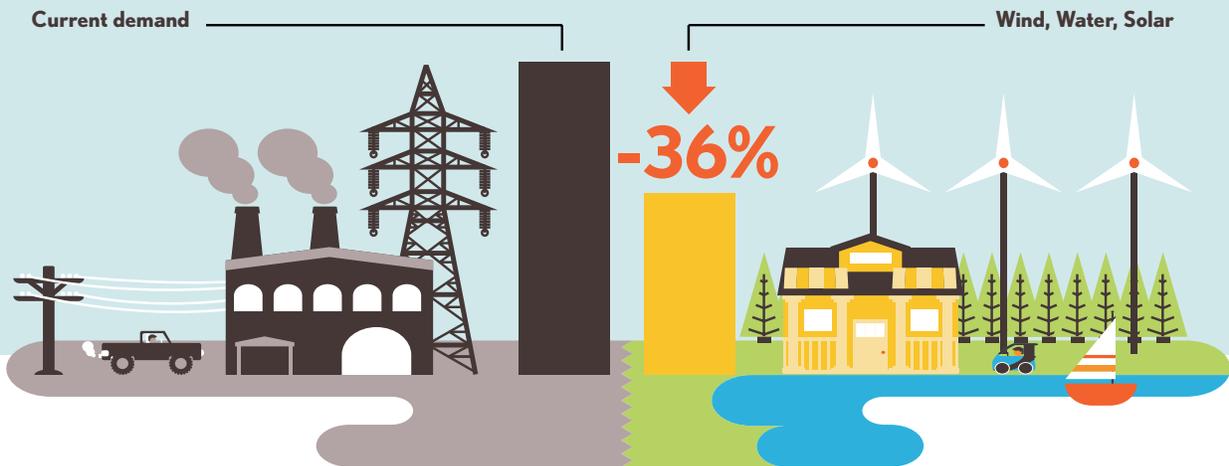
**94,644**

Construction jobs:



**174,775**

Using WWS electricity for everything, instead of burning fuel, and  
improving energy efficiency means you need much less energy.



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