Clean Energy in New York

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

APA Board Presentation

July 14, 2022

Agenda:

- Climate Leadership and Community Protection Act
- Clean Energy Intro
- NYSERDA Programs and Funding
- Permitting, Interconnection, Site Selection

Introduction

Jennifer Manierre, Clean Energy Siting
cleanenergyhelp@nyserda.ny.gov

Tracy Darougar, Build-Ready
buildready@nyserda.ny.gov

Clean Energy Siting Team:
www.nyserda.ny.gov/Siting

Build-Ready Team:
www.nyserda.ny.gov/build-ready

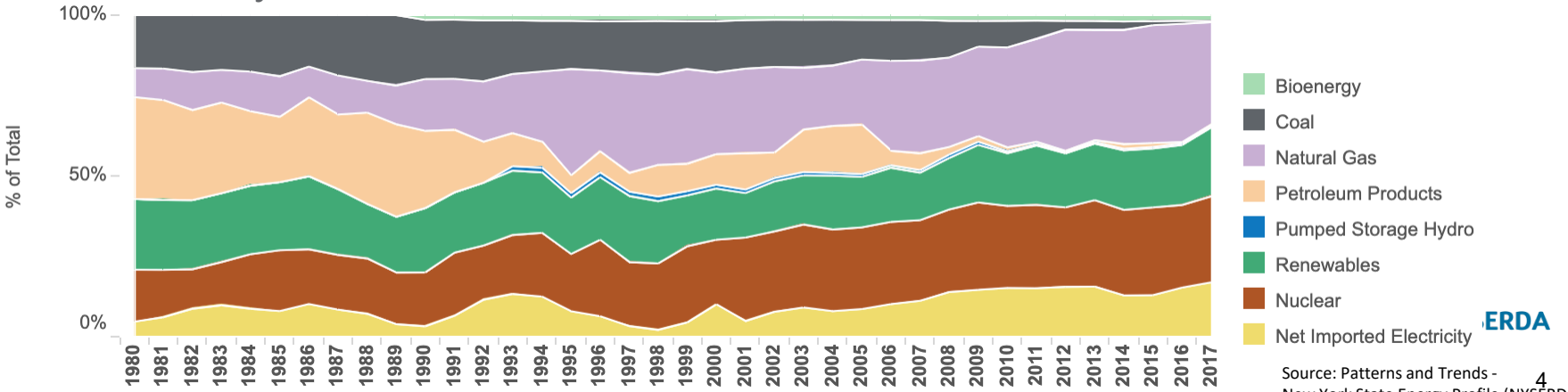
The Climate Leadership and Community Protection Act (Climate Act)

Electricity Sector Goals:

- 70% Renewable Electricity by 2030
- 100% Emissions-Free Grid by 2040

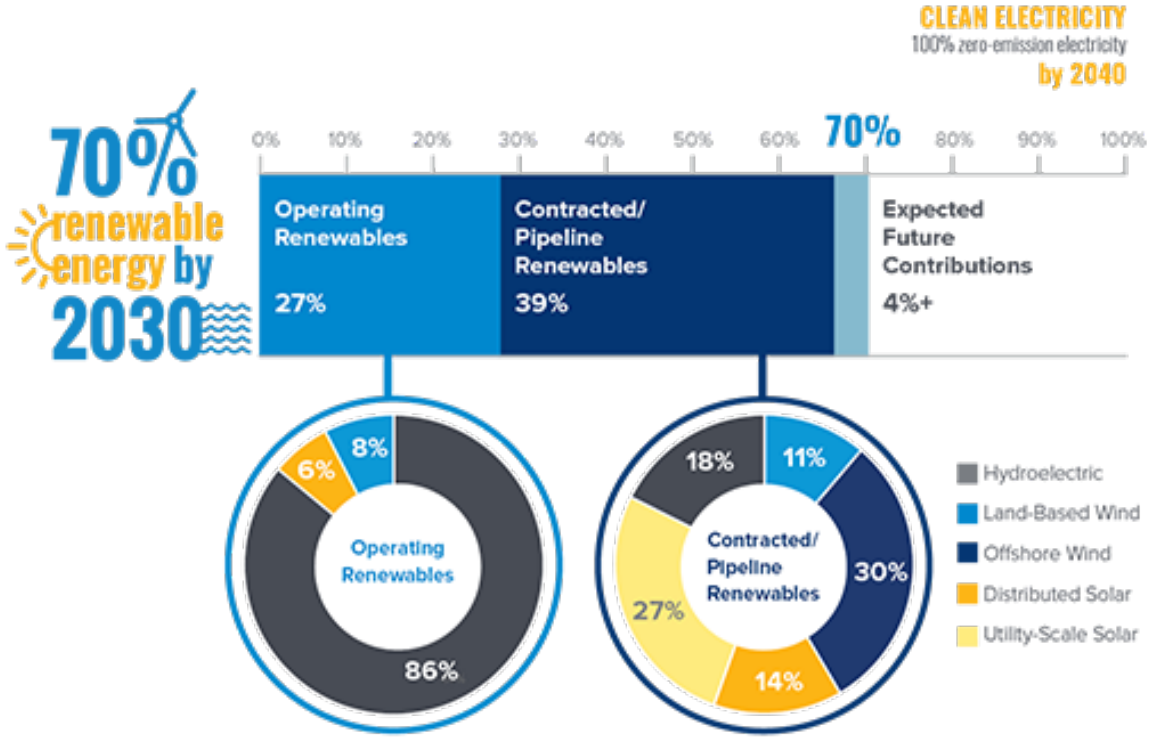
Technology-Specific Goals:

- 10,000 MW Distributed Solar by 2030*
- 9,000 MW Offshore Wind by 2035
- 1,500 MW Energy Storage by 2025; 3,000 MW by 2030



Source: Patterns and Trends - New York State Energy Profile (NYSERDA)

The Climate Leadership and Community Protection Act (Climate Act)



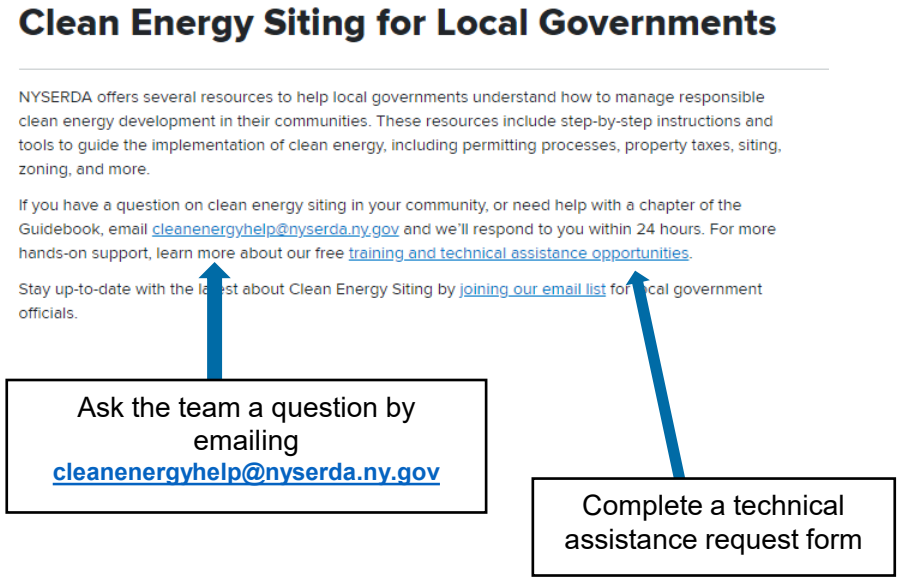
Source: Patterns and Trends - New York State Energy Profile (NYSERDA)

Clean Energy Siting Team

Access the Clean Energy Guidebooks and other resources!

Clean Energy Siting for Local Governments

- Comprehensive Plan Guide
- Energy Storage Guidebook
- Energy Storage Trainings for Local Governments
- EV Charging Station Permitting Resources
- Siting for Large-Scale Renewables
- Solar Guidebook
- Technical Assistance and Workshops
- Wind Energy Guidebook
- Clean Energy Siting Email List



Clean Energy Siting for Local Governments

NYSERDA offers several resources to help local governments understand how to manage responsible clean energy development in their communities. These resources include step-by-step instructions and tools to guide the implementation of clean energy, including permitting processes, property taxes, siting, zoning, and more.

If you have a question on clean energy siting in your community, or need help with a chapter of the Guidebook, email cleanenergyhelp@nyserda.ny.gov and we'll respond to you within 24 hours. For more hands-on support, learn more about our free training and technical assistance opportunities.

Stay up-to-date with the latest about Clean Energy Siting by joining our email list for local government officials.

Ask the team a question by emailing **cleanenergyhelp@nyserda.ny.gov**

Complete a technical assistance request form

www.nyserda.ny.gov/Siting

Clean Energy Intro: Solar Energy

Solar Photovoltaics (PV) vs. Concentrated Solar Power (CSP) vs. Solar Thermal

Types of Solar PV installations:

- Residential
- Commercial
  - Community Solar
- Utility-Scale

"Behind the Meter"
Rooftop or Ground-Mounted

"Front of the Meter"
Ground-Mounted

Ground-Mounted Solar

- 5-7 acres per MW
- 100-200 homes per MW

Community Solar: How it Works

Solar electric panels are installed offsite in sunny locations to produce renewable energy for subscribing members.

Any utility customer (home or business) can be a subscribing member.

Each subscriber's utility bill is credited accordingly when excess energy is produced.

Community Solar in New York

Clean Energy Intro: Energy Storage

System Components:

- Cells -> Modules -> Racks
- Battery Management System (BMS)

Installation Types:

- Residential
- Commercial
- Utility-Scale

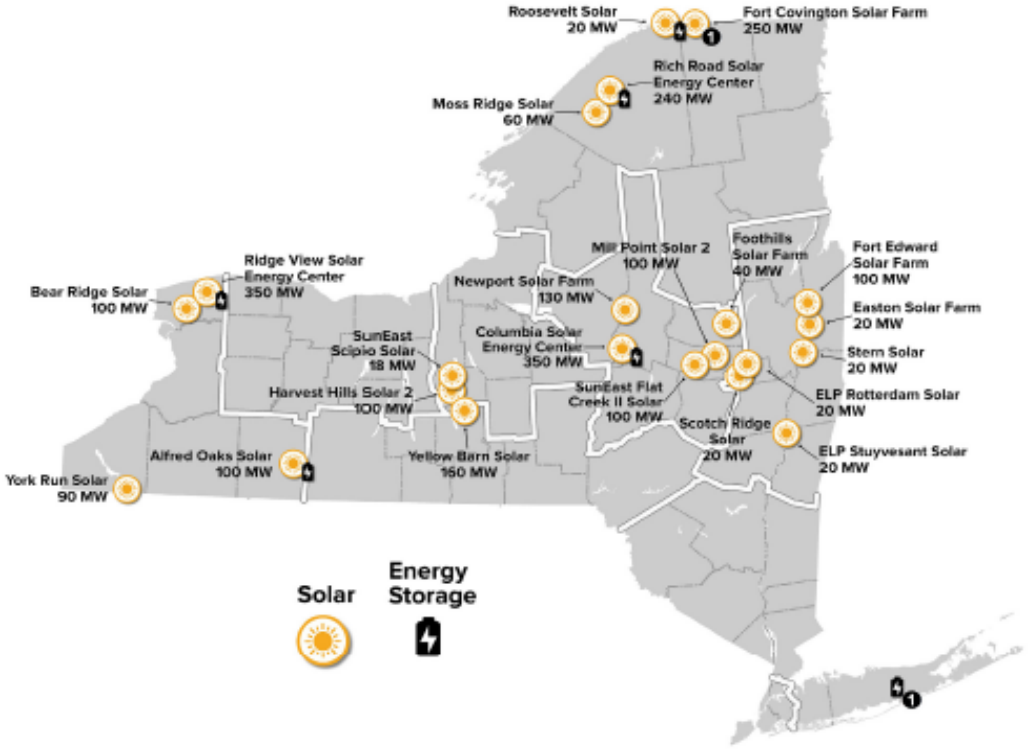
"Behind the Meter"

"Front of the Meter"

Details/Purposes:

- Often paired with intermittent renewables
- Backup power
- "Energy arbitrage"
- Grid upgrade deferrals
- Grid services

Large-Scale Clean Energy Progress in NY to Date



Since 2018:

Over 100 projects

13,000+ MW

2021 solicitation awarded **22 large-scale solar** and energy storage projects across New York, totaling **over 2,400 MW** of new renewable capacity and **159 MW of energy storage**

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RECs

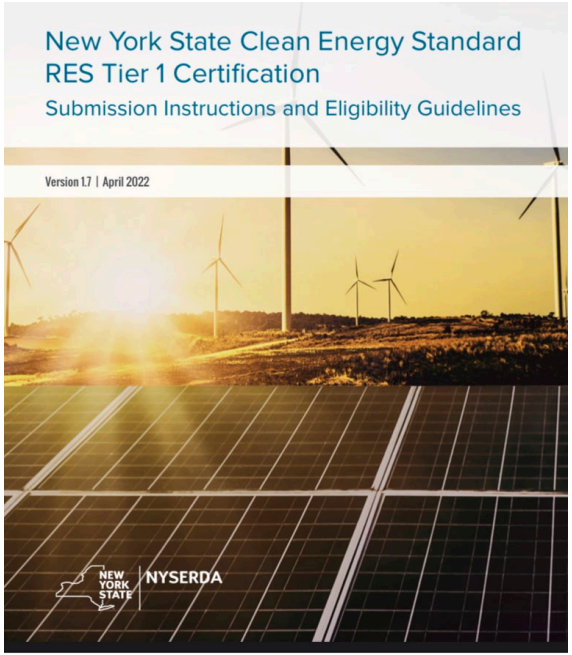
What's a REC?

- **RECs are derived from the energy production of megawatt-hour (MWh) by RES-eligible electric generation sources which first entered commercial operation on or after January 1, 2015.**
- **NYSERDA Solitician process can result in long term contracts to purchase RECs from qualified developers.**

What technology is covered?

The CLCPA defines renewable energy systems as "systems that generate electricity or thermal energy through use of the following technologies"

- **Solar,**
- **on land and offshore wind,**
- **hydroelectric,**
- **geothermal electric,**
- **geothermal ground source heat,**
- **tidal energy, wave energy, ocean thermal, and,**
- **fuel cells which do not utilize a fossil fuel resource in the process of generating electricity.**



https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Programs/Clean-Energy-Standard/Eligibility-Certification-Guidelines.pdf

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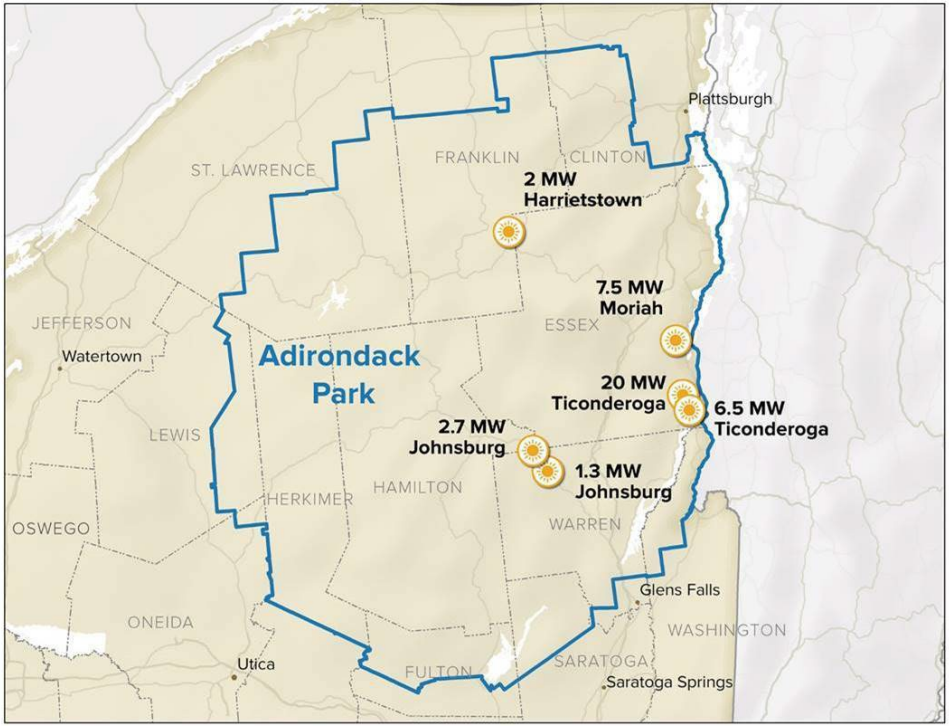
Clean Energy Progress in ADK Park



Permit Approved and Project Operational

- 2 MW, Saranac Lake Community Solar, Harrietstown, NY: https://saranaclakesolar.com/
- 2.7 MW Commercial Solar Project, Johnsburg, NY https://www.barton.com/clean-energy-solar-farm/
- 1.3 MW, Johnsburg, NY

Permit Application Approved and Project Devt Progressing

- 7.5 MW Community Solar Project, Town of Moriah
- 20 MW Solar Project, Town of Ticonderoga, East Light Partners, Estimated COD: 2024
- 6.5 MW Solar Project, Town of Ticonderoga, SolarPark Energy

Not Shown:

- 5 MW Solar Project, Town of Ticonderoga, Pivot Energy

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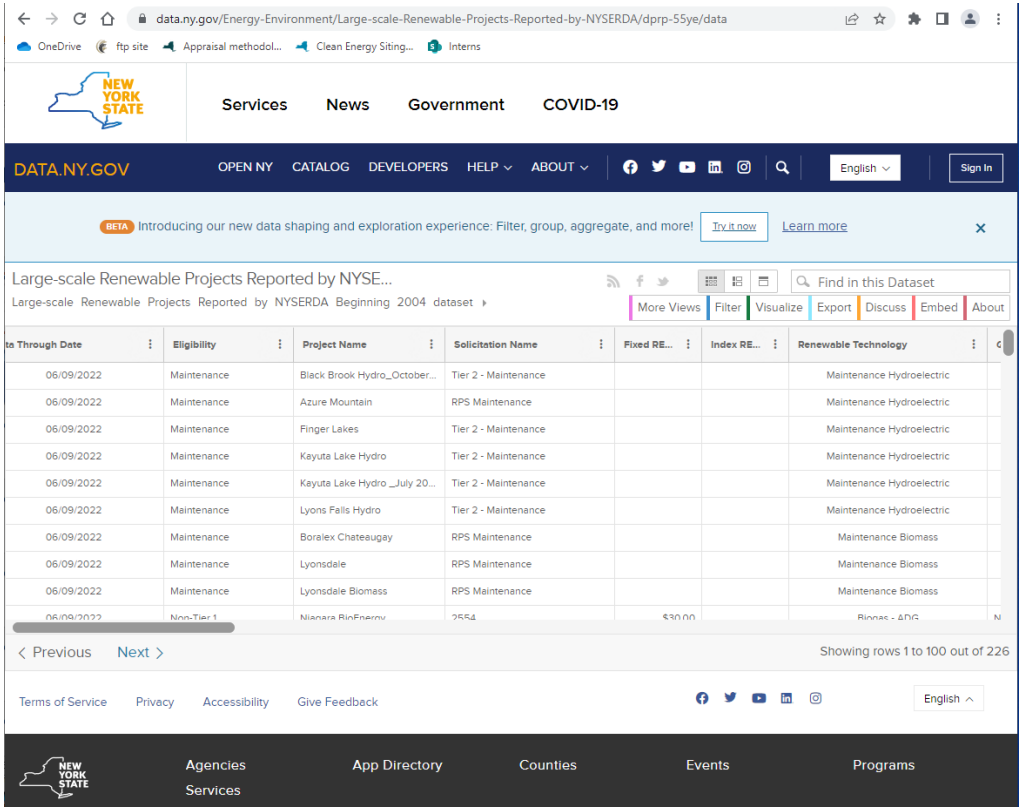
Large-Scale Clean Energy Progress in NY to Date



https://data.ny.gov/Energy-Environment/Large-scale-Renewable-Projects-Reported-by-NYSERDA/dprp-55ye

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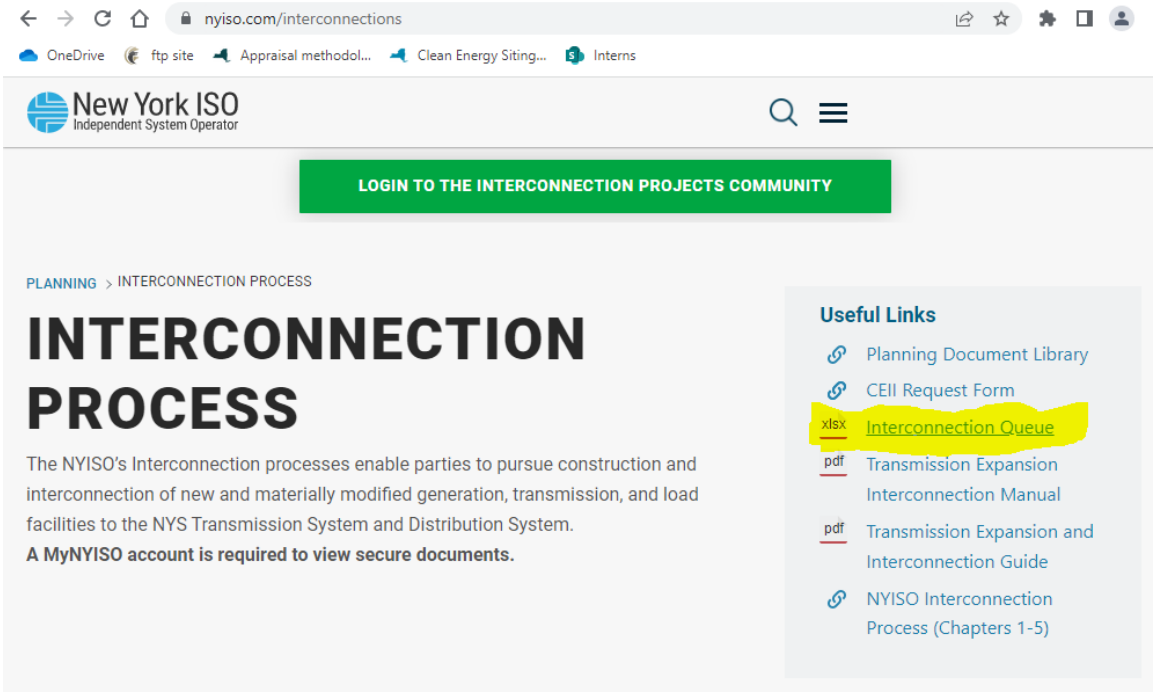
NYISO Interconnection Queue



https://www.nyiso.com/interconnections

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NYISO Interconnection Queue

	B	C	D	E	G	H	J	K	L	M	N	Q	S
1	Owner/Developer	Project Name	Date of IR	SP (MW	Type/ Fue	County	Z	nterconnection P	Utility	S	Last Update	Proposed In-Servi	Proposed COD
14	Peekskill BESS LLC	Buchanan Energy Stor	4/7/22	500	ES	Westchester	H	Buchanan Substatio	ConEd	1	4/30/22	09/2026	12/2026
15	EDF Renewable Development, Inc	Columbia Storage	3/31/22	20	ES	Herkimer	E	Edic - Fraser 345 kV	NYPA	1	4/30/22	08/2025	11/2025
16	174 Power Global Properties	Shoreham	3/25/22	100	ES	Suffolk	K	Shoreham 138 kV	LIPA	1	4/30/22	10/2025	11/2025
17	174 Power Global Properties	West Babylon	3/25/22	130	ES	Nassau	K	West Babylon 69 kV	LIPA	1	5/31/22	08/2025	11/2025
18	New Bremen Solar	Bremen Solar	3/24/22	100	S	Lewis	E	Taylorville - Boonville	NM-NG	2	5/31/22	10/2023	12/2023
19	EDF Renewable Development, Inc	Rich Road Storage	3/23/22	20	ES	St. Lawrence	D	Moses - Adirondack	NYPA	1	4/30/22	08/2025	11/2025
20	Hecate Energy Diamond Solar LLC	Diamond Solar	3/18/22	500	S	Herkimer	E	Edic - New Scotland	NM-NG	1	4/30/22	01/2026	05/2026
21	Central Westchester Power LLC	Eastview Energy Stora	3/14/22	400	ES	Westchester	I	Eastview 138 kV Su	ConEd	1	4/30/22	09/2026	12/2026
22	Yonkers Renewable Energy LLC	Sprain Brook Energy S	3/13/22	500	ES	Yonkers	I	Sprain Brook Substa	ConEd	1	4/30/22	09/2026	12/2026
23	Peekskill BESS LLC	Buchanan Energy Stor	3/13/22	1000	ES	Westchester	H	Buchanan Substatio	ConEd	1	4/30/22	09/2026	12/2026
24	Hanwha Q CELLS USA	Celestine Storage	3/11/22	191.1	ES	Steuben	C	Bath 115 kV substat	NYSEG	2	5/31/22	06/2025	12/2025
25	Hanwha Q CELLS USA	Daphne Storage	3/11/22	50.7	ES	Suffolk	K	Moriches 69 kV	LIPA	4	5/31/22	06/2025	12/2025
26	Hanwha Q CELLS USA	Gemma Storage	3/11/22	202.8	ES	Steuben	C	Stoney Ridge 115 kV	NYSEG	4	5/31/22	06/2025	12/2025
27	New Castle ESS LLC	Millwood Energy Stora	3/11/22	500	ES	Westchester	H	Millwood Subtation	ConEd	1	4/30/22	09/2026	12/2026
28	Fresh Kills Battery Storage LLC	Fresh Kills Energy Sto	3/8/22	500	ES	Richmond	J	Fresh Kills Substatic	ConEd	2	5/31/22	12/2026	12/2026
29	Staten Island Power LLC	Goethals Energy Stora	3/8/22	500	ES	Richmond	J	Goethals 345 kV	ConEd	1	4/30/22	12/2026	12/2026
30	Middletown Energy Storage, LLC	Middletown Energy Stc	3/8/22	100	ES	Orange	G	Middletown Tap 138	O&R	1	5/31/22	09/2024	10/2024
31	Swift Current Energy	Moonlight Flats Solar F	3/4/22	250	S	Clearfield	C	Homer City to Maine	NYSEG	1	5/31/22	06/2025	12/2025
32	Astoria Renewables LLC	Astoria Annex Energy	3/3/22	500	ES	Queens	J	Astoria Annex 345 k	NYPA	2	5/31/22	09/2026	12/2026
33	Atlantic Shores Offshore Wind Bigl	Atlantic Shores Offsho	2/25/22	2100	W	Kings	J	Gowanus 345KV	ConEd	1	5/31/22	03/2030	12/2030
34	Atlantic Shores Offshore Wind Bigl	Atlantic Shores Offsho	2/25/22	2100	W	Richmond	J	Goethals 345kV	ConEd	1	5/31/22	03/2030	12/2030

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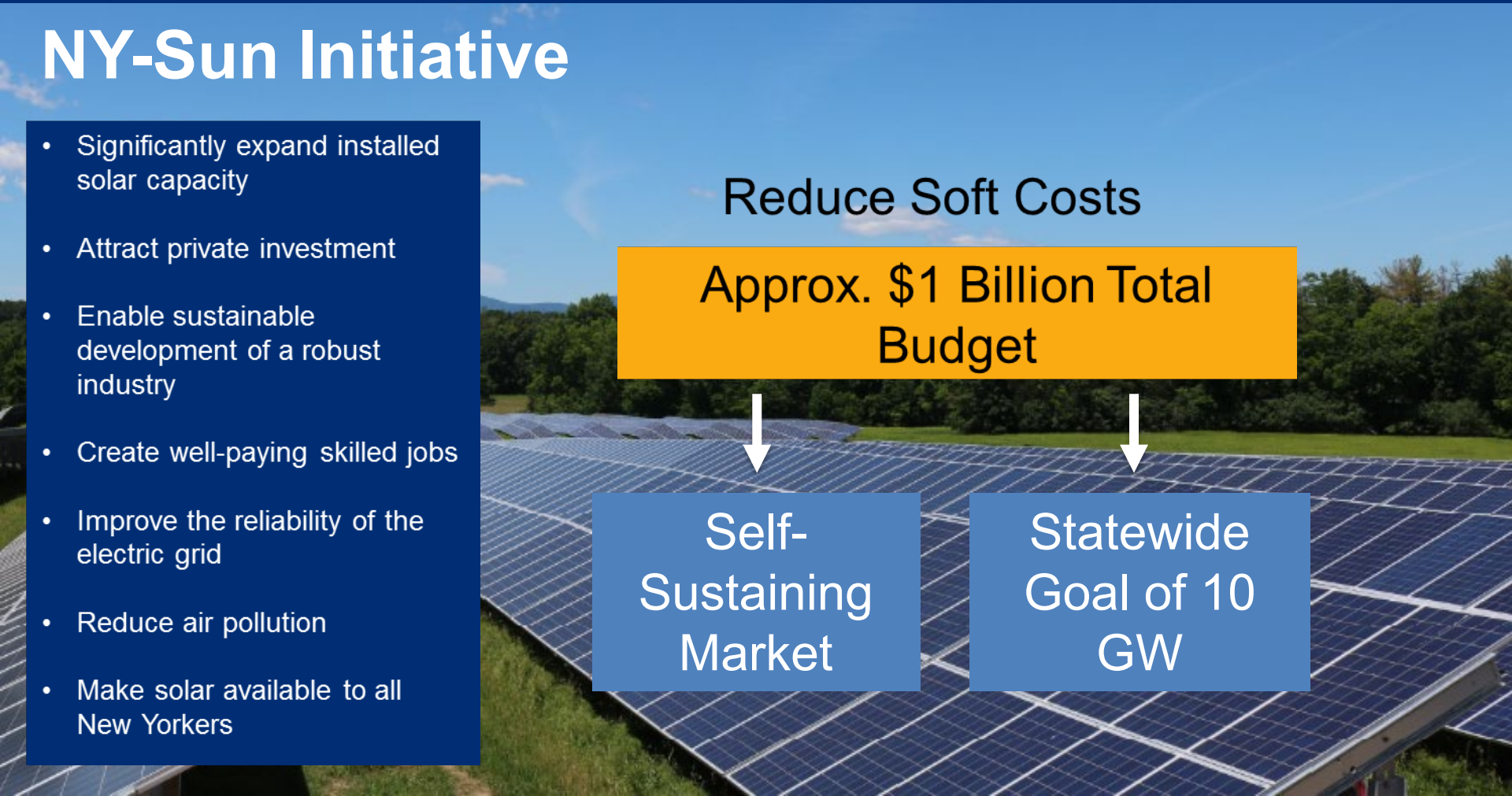
NY-Sun Initiative

- Significantly expand installed solar capacity
- Attract private investment
- Enable sustainable development of a robust industry
- Create well-paying skilled jobs
- Improve the reliability of the electric grid
- Reduce air pollution
- Make solar available to all New Yorkers



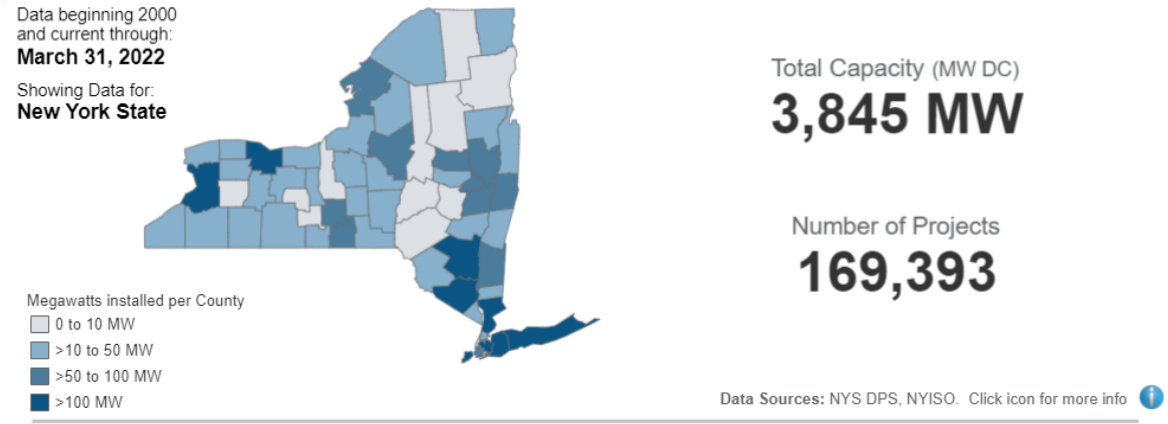
Distributed Solar Progress in NY to Date

Statewide Solar Projects

Based on interconnection data, this map represents the most comprehensive summary available of installed solar capacity and annual trends, including projects that did not receive State funding, for all of New York since 2000.

To get started, click on the map for county-specific data or hold Ctrl and click multiple counties. To see statewide data, click outside the map. Questions or issues accessing this data should be directed to solardata@nyserda.ny.gov.

Download a copy of the underlying dataset from Open NY.



https://www.nyserda.ny.gov/All-Programs/NY-Sun/Solar-Data-Maps/Statewide-Projects

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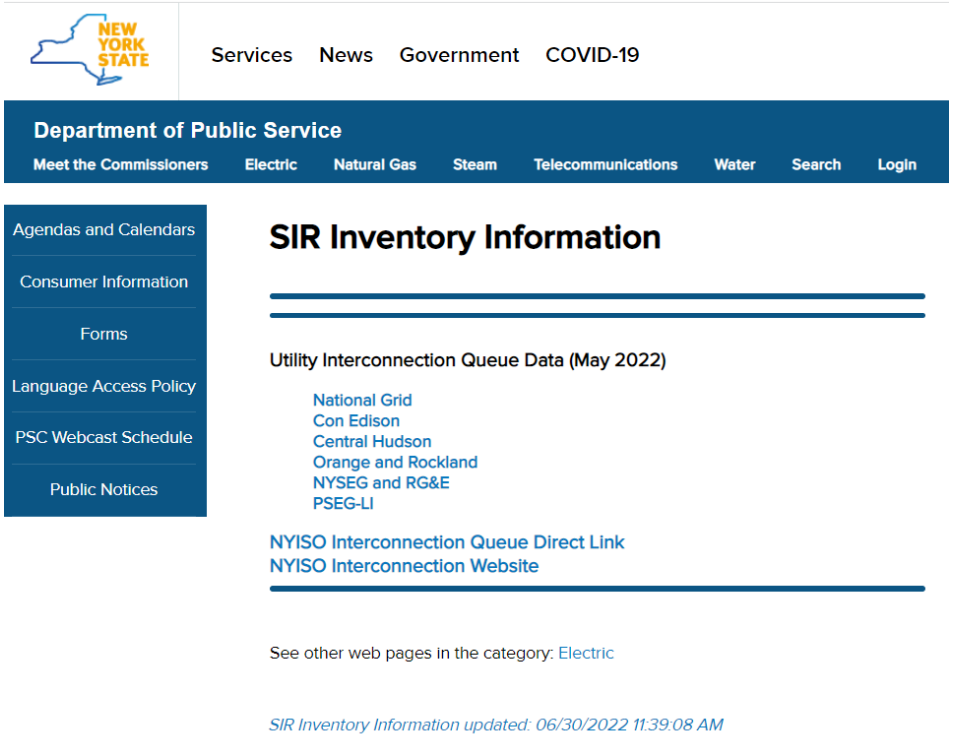
SIR Queue for Distributed Generation



https://www3.dps.ny.gov/W/PSCWeb.nsf/All/286D2C179E9A5A8385257FBF003F1F7E?OpenDocument

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SIR Queue for Distributed Generation

	Developer	Application / Job #	Division	City/Town	County	Zip Code	NYISO Load Zone	Circuit ID	Substation	System Type: Hybrid (Y/N)	System Type: Related	System Type: PV (kWAC)	System Type: ESS (kWAC)	Metering	APPLICATION REVIEW 10 business days: Start Date	End Date	Calculated Duration	Application Approved Date (Utility)
10	Crystal Bentley (Paradise Energy Solutions)	00432529	013-Watertown	MANNSVILLE	JEFFERSON	13661	E	36_138754	W. ADAMS 875	N		15.36		NM	5/24/2022			
11	Margaret Campbell (EDF Renewables Distributed Solu	00431046	026-Clayton	CLAYTON	JEFFERSON	13624	E	36_261458	THOUSAND ISLANDS 814	N		5000		CDG	5/19/2022	5/25/2022	5	5/25/2022
12	Margaret Campbell (EDF Renewables Distributed Solu	00431352		CLAYTON	JEFFERSON	13624	E	36_261458	THOUSAND ISLANDS 814	N		5000		CDG	5/19/2022	5/25/2022	5	5/25/2022
13	Joy Calebaugh (Go Green Solar)	00430390	013-Watertown	DEXTER	JEFFERSON	13634	E	36_137606	COFFEEN 760	N		15.4		NM	5/16/2022			
20	Aaran Koller (Next Generation Solar)	00430590	013-Watertown	ADAMS	JEFFERSON	13605	E	36_138754	W. ADAMS 875	N		11.4		NM	5/16/2022	5/16/2022	1	5/16/2022
	Crystal Bentley	0042						36_13	INDIAN									

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Permitting Clean Energy in NYS

Processes for regulating/permitting clean energy development will vary based on size and type of the installation.

For solar/wind:

- Projects < 25 MW: **Permitted at local level (SEQR, municipal requirements)**
- Projects > 25 MW: **Permitted at State level (Article 10, Office of Renewable Energy Siting [ORES])**
- Projects between 20 – 25 MW: **May opt-in to State-level siting process through ORES**

For energy storage:

- Projects paired (or "co-located") with large-scale renewable generators: **Permitted at State level**
- Projects not paired with large-scale generators: **Permitted at local level**

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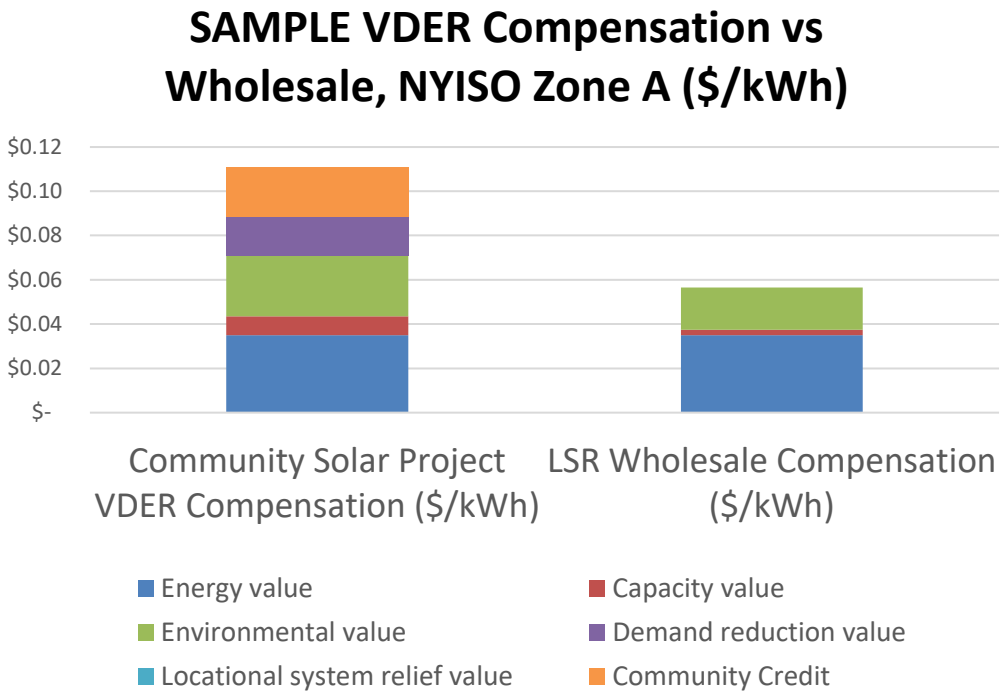
Project Revenue Comparison – DER vs. LSR

- Generally, **DERs receive higher compensation rates** (through VDER) than LSR projects (participation in NYISO wholesale markets)
- While compensation *rates* are higher for DER, generating capacity is significantly lower
- Compensation is based on project location (utility territory or NYISO zone)

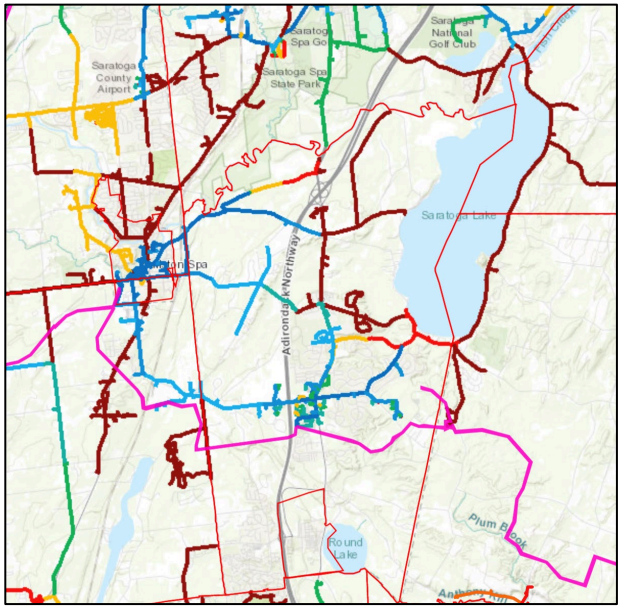


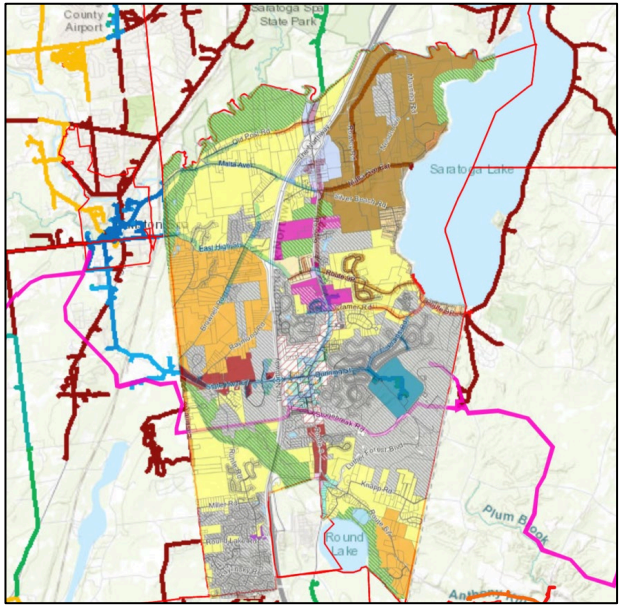
Community Benefits

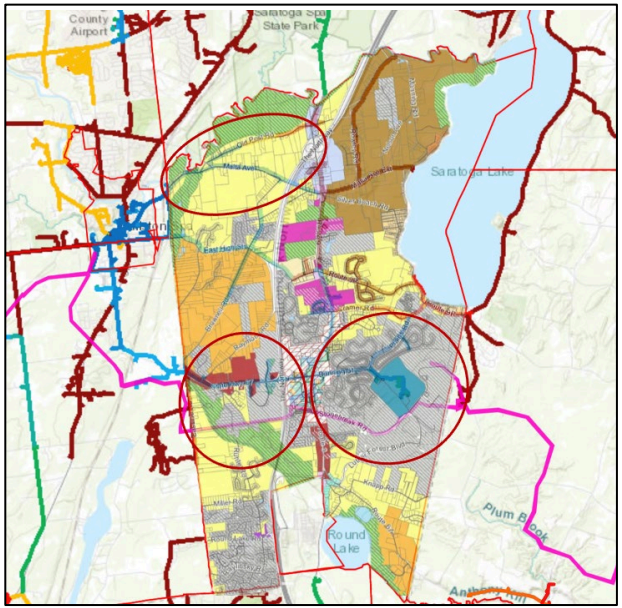
- Host Community Benefit Program
- Host Community Agreements
- Taxation and Tax Department Assessment Methodology
- Payments-In-Lieu-Of-Taxes (PILOTs) - RPTL 487 or IDA
- NYSERDA's Build-Ready Program

Project Development

Interconnection and Siting







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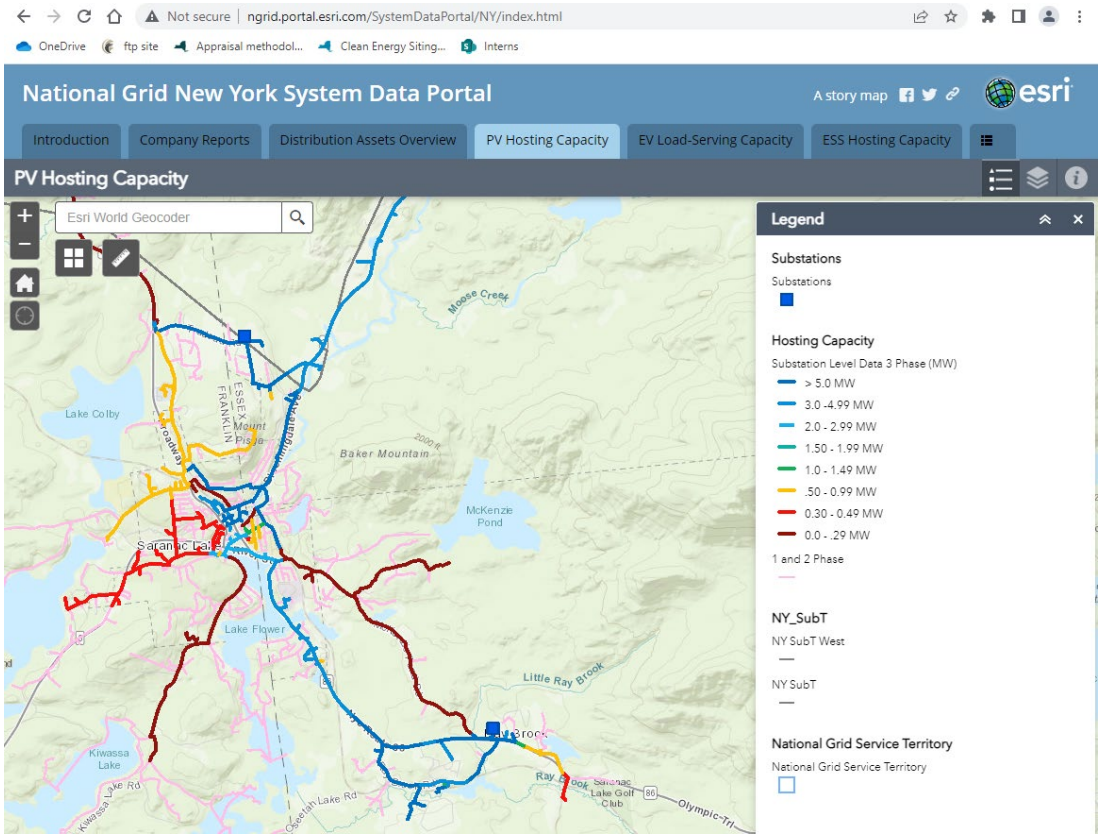
Interconnection and Siting



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Brownfields / Landfills / Repurposed Lands

Agricultural Resource Protection

1) Protect Prime Farmland and Farmland of Statewide Importance. Municipalities can choose options to address their specific concerns.

2) Follow the construction requirements of the New York State Department of Agriculture and Markets.

3) Provide native perennial vegetation and foraging habitat beneficial to game birds, songbirds, and pollinators.

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Agricultural Resource Protection






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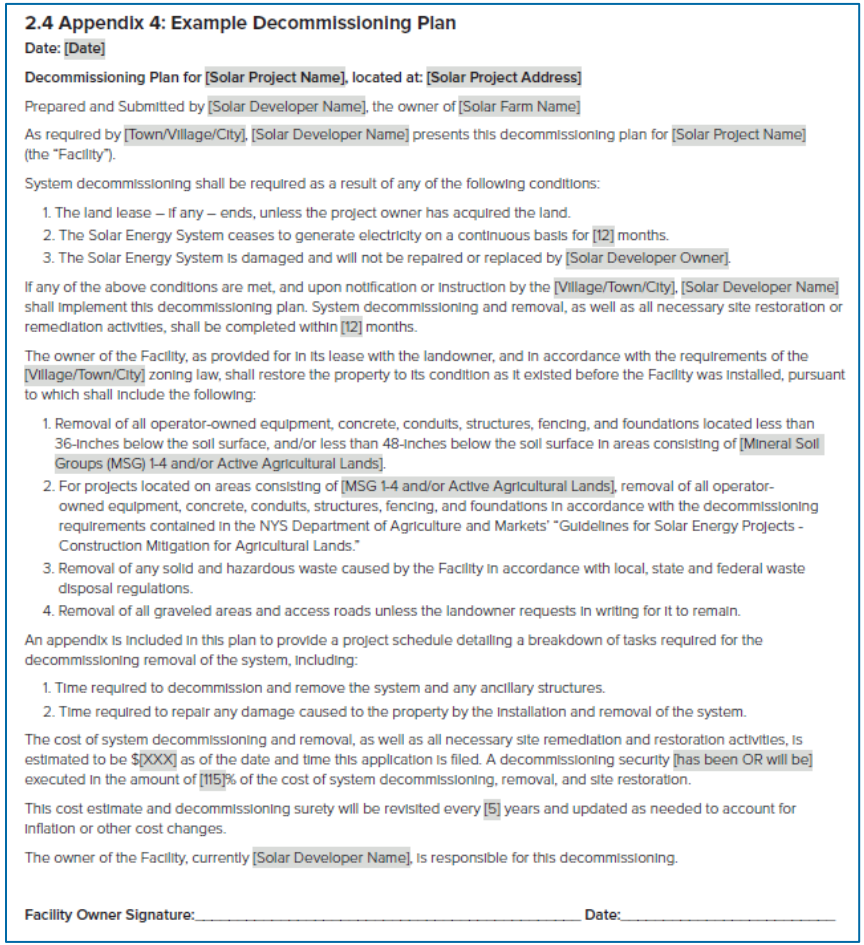
Decommissioning

NYSERDA's Model Local Solar Law:

- Decommissioning is required when a system is abandoned, and/or not producing electricity for a period of 1 year.
- Applicant shall provide a decommissioning **plan** that includes the **cost** and **time** of removing the Solar Energy System, and the plan to repair damage caused to the property.
- Financial security



2.4 Appendix 4: Example Decommissioning Plan

Date: [Date]

Decommissioning Plan for [Solar Project Name], located at: [Solar Project Address]

Prepared and Submitted by [Solar Developer Name], the owner of [Solar Farm Name]

As required by [Town/Village/City], [Solar Developer Name] presents this decommissioning plan for [Solar Project Name] (the "Facility").

System decommissioning shall be required as a result of any of the following conditions:

1. The land lease – if any – ends, unless the project owner has acquired the land.
2. The Solar Energy System ceases to generate electricity on a continuous basis for [12] months.
3. The Solar Energy System is damaged and will not be repaired or replaced by [Solar Developer Owner].

If any of the above conditions are met, and upon notification or instruction by the [Village/Town/City], [Solar Developer Name] shall implement this decommissioning plan. System decommissioning and removal, as well as all necessary site restoration or remediation activities, shall be completed within [12] months.

The owner of the Facility, as provided for in its lease with the landowner, and in accordance with the requirements of the [Village/Town/City] zoning law, shall restore the property to its condition as it existed before the Facility was installed, pursuant to which shall include the following:

1. Removal of all operator-owned equipment, concrete, conduits, structures, fencing, and foundations located less than 36-inches below the soil surface, and/or less than 48-inches below the soil surface in areas consisting of [Mineral Soil Groups (MSG) 1-4 and/or Active Agricultural Lands].
2. For projects located on areas consisting of [MSG 1-4 and/or Active Agricultural Lands], removal of all operator-owned equipment, concrete, conduits, structures, fencing, and foundations in accordance with the decommissioning requirements contained in the NYS Department of Agriculture and Markets' "Guidelines for Solar Energy Projects - Construction Mitigation for Agricultural Lands."
3. Removal of any solid and hazardous waste caused by the Facility in accordance with local, state and federal waste disposal regulations.
4. Removal of all graveled areas and access roads unless the landowner requests in writing for it to remain.

An appendix is included in this plan to provide a project schedule detailing a breakdown of tasks required for the decommissioning removal of the system, including:

1. Time required to decommission and remove the system and any ancillary structures.
2. Time required to repair any damage caused to the property by the installation and removal of the system.

The cost of system decommissioning and removal, as well as all necessary site remediation and restoration activities, is estimated to be $[XXX] as of the date and time this application is filed. A decommissioning security [has been OR will be] executed in the amount of [115]% of the cost of system decommissioning, removal, and site restoration.

This cost estimate and decommissioning surety will be revisited every [5] years and updated as needed to account for inflation or other cost changes.

The owner of the Facility, currently [Solar Developer Name], is responsible for this decommissioning.

Facility Owner Signature:_____ **Date:**_____

Technical Assistance for Local Governments

NYSERDA offers local governments free one-on-one assistance on:

1. Adopting a Payment-In-Lieu-Of-Taxes (PILOT) law and agreement
2. Completing the SEQR process for large solar installations
3. Planning and Zoning for Solar
   - Adopting a Model Solar Energy Law
   - Siting PV in Agricultural Districts and agricultural areas
   - Updating master plans and zoning regulations
4. Municipal Solar Procurement
5. Permitting and Inspections
   - Adopting and implementing the Unified Solar Permit
   - Technical consulting to relieve administrative burdens

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Thank you

For additional questions, please contact me at:

cleanenergyhelp@nyserda.ny.gov

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