

Powering Communities in the Grid-Scale Solar Development Process

Genesee-Finger Lakes Regional Planning Council Local Government Workshop Spring 2022



Agenda

1. Background on EDFR – Success in New York

- 2. Sample Project Information: What I Need to Know for my Community
- 3. How to Include my Community's Vision and Needs in Project / Where Does my Community Engage in the 94c Siting Process?
- 4. Community Benefits: Success Stories and Examples WHY





Our Commitment to Ethical Development

These principles reflect our promise to our host communities, landowners, and other stakeholders.

EDF Renewables is committed to:

- Honesty and transparency in all our development activities
- Engaging with all stakeholders and remaining open to taking input that will improve projects and mitigate impacts
- Being present and available in the community to ensure all voices are heard
- Treating landowners, host communities, and stakeholders fairly and equitably.



Grid-Scale Power

35+ years

We were on the forefront of the burgeoning wind industry in California as a service provider beginning in 1985.



Since 2010, we have paid over \$19 billion to vendors, including lease payments made to landowners.

9,600

Our 24 GW project development has created 9,600 on-site jobs.

Based on an employment factor of 4 jobs per MW IRENA Annual Review

24 GW

We expanded into project development in 2000 and have developed 24 GW of gridscale solar and wind projects across North America.

as of 12/31/21

Bigger projects. Bigger impact.

EDF Renewables' Grid-Scale Power team; **provides origination**, **development, transaction, and construction** services for large-scale wind (offshore and onshore), solar power generation and storage projects across North America.

Our team leaders can solve energy challenges facing businesses and communities no matter the size of complexity.

1.6 GW (1,600 MW put in service in 2020)





EDF Renewables New York

Leading the charge towards New York States' Renewable Energy Goals





50/50 partnership with Shell New Energies on **Atlantic Shores Offshore Wind**. Evaluating NYS lease options.

res Acquired EnterSolar, an NYC based company with over 30 solar projects in NYS

2,000 + MW of grid-scale solar and storage in various stages of development



Statewide Development Pipeline



CODF renewables

NYSERDA Tier 1 RFP

- NYS Holds annual procurements for renewable energy through NYSERDA.
- EDFR won 1 project in 2018 (177MW in Livingston County) and 3 projects in 2020
 - ➢ Tracy Solar (119MW, Jefferson County)
 - ➢ Homer Solar (90MW, Cortland County)
 - Moraine Solar (94MW, Allegheny County)
- Contract structure is the sale of renewable energy credits to NYSERDA who in turn sells them to the State's utilities to comply with Renewable Portfolio Standard

New York State Renewable Energy Goals

The State of New York has a goal of reaching **70% renewable energy by 2030**

- The primary strategy for reaching these goals is for NYSERDA to contract directly with large renewable energy projects, like Rich Road Solar
- The State has outlined a plan to continue to procure very large quantities of Renewable Energy from 2021-2026. Around 3,000-4,000MW per year is estimated (Rich Road = 240MW)



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Sample Project Information

System Capacity: 80 MW-350 MW

Location: request kmz files and parcel maps when you feel you need them

Land: 6 acres/1 MW

Project Timeline:

- Land Acquisition: can take from 1-4 years
- NYSERDA Contract Submission: takes about one year
- o State Permit Submission: 1-1.5 years
- Construction Phase: 1-2 years

Project Operation: 35 years (Is your developer your operator and maintainer, or will the project be sold? Who is your new community contact?)

Interconnection: Can use existing or new substation connecting to existing/new/ or re-built transmission line running through project area



Sample Project Schedule – COD 2027



* NOTE: This timeline assumes project will acquire a contract in one of the 2022 NYSERDA Solicitations, engagement, interconnection and environmental studies have been occurring since 2019



Sample Studies



- Wildlife Site Characterization- Used to identify any threatened or endangered species or species of special concern within or immediately adjacent to the project site.
- **Breeding Bird Surveys-** Conducted to identify and document any state listed endangered breeding bird species that utilize the proposed Project area during the breeding season.
- Winter Bird Surveys Conducted to identify and document any state listed endangered breeding bird species that utilize the proposed Project area as wintering habitat.
- **Phase IA Archaeological Survey-** Conducted to identify areas of archeological sensitivity within or immediately adjacent to the project site.
- Phase 1B Shovel testing archaeological Survey
- Desktop-Based Wetland and Water Resource Delineation- Used to identify wetland within the project site, advise on project design and field delineation.
- **Topographic LIDAR Survey & Aerial Imagery-** survey taken from a plane to establish 1' contours and obtain high quality aerial imagery.
- Electromagnetic Frequency Studies –assessments from collector lines and transmission lines as well as inverters and panels
- Visual Impact Studies- glare assessments studied, inclusions for fly zones as well
- **Noise Assessments** –audible noise assessments for projects, especially from project boundaries



- 94C has replaced Article 10.
- Standardized conditions for solar projects to meet.
- Level of environmental studies, design, engineering, largely unchanged, however, more detailed design and engineering required.
- Early coordination on environmental impacts & reports required
- Adherence to substantive provisions of local zoning laws still required but a waiver is available like Article 10.
- One-year timeline for approval following a completeness determination (roughly 60 days following an application)
- \$1,000/MW fund for intervenors & towns. Definition of intervenor is tightened up.

New 94c Permitting Process

And the Office of Renewable Energy Siting (ORES)



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How to Include my Community's Vision and Needs in Project?

- → Review local comprehensive or strategic vision plan.
- → Take into account where plans mention: Clean energy, climate, community growth opportunities, agricultural innovation and growth, or workforce development.

- → Review local laws for solar and battery energy storage systems.
- → If your community does not already have these in place, please reach out to your municipal attorney, someone at GFLRPC, or the clean energy siting team at NYSERDA for assistance in getting started.

- Create list of community priorities and wishes that can guide conversations with renewable energy developers coming into town.
- Consider including local stakeholder groups such as snowmobile/ ATV groups, camping or hunting facilities, Lions clubs, Rotaries, American Legions, youth groups such as Boys and Girls Clubs or 4Hs, and any agricultural groups such as Cornell Extensions or County Farm Bureaus.



Where Does my Community Engage in the 94c Siting Process?

ESCROW Funding

 Although the 94c process does not have pre-application funding available through intervenor funds like the Article 10 process did, your community can request ESCROW funding specifically for attorney and engineering fees from your developer.

Local Law Waiver

- for a 94c project, your developer must adhere to local laws or show waivers from the community.
- Get a law on the books if you do not already. If you do, use this opportunity for your community to have an open and honest dialogue with your developer on "smart-siting" your renewable energy project.

PILOT / Host Community Benefit Negotiations

- Work with your IDA and school district on equitable distribution that favors your local community.
- Use support from neighboring communities if needed to bolster position

Encourage Open and Honest Discussions

• With community members and developer throughout the process, so input can be included during entire process



Examples / Resources:

- <u>United Solar Energy Supporters: Municipal Tool Box</u>
- <u>Mount Morris Agrivoltaic Study</u>
- <u>PACE University Ridge View Economic Impact Study</u>
- <u>Columbia University Guide to a Clean Energy Future</u> for the Genesee-Finger Lakes
- <u>Genesee-Finger Lakes Climate Action Strategy</u>
 <u>(Climate Solutions Accelerator)</u>





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Many Layers of Economic Impacts



LEASE PAYMENTS

Annual \geq \$1M and increasing over time



PILOT & Other Taxes

Benefits county, towns, schools, and special districts like Fire Dept.

Total tax contributions will be around >\$600k/year and increasing over time



JOBS

Approximately 250 prevailing wage construction jobs and 3-4 permanent jobs

Local Spending from employment boost (hotels, restaurants)

Vocational and technical training for students



LOCAL IMPACTS

Subcontractors, equipment suppliers, local vendors, engineering, electrical work, road construction and maintenance, snow removal, beekeepers, sheep farmers

* These numbers assume a 200 MW project



EDFR's Community Benefit Fund -\$10,000-\$40,000

NYSERDA mandated Host Community Electric benefit program \$500/MW

Holistically donating: arts centers, environmental, outdoors, community, town causes, sports, victims' assistance centers, historical organizations,

EDFR trades and clean energy Scholarship

Cornell University student project "Columbia Collective"

Media: Podcasts and PBS partnerships and video series

Climate of Change 2021/2022 Climate Solutions Accelerator





Solar Community Benefits

A win-win solution for communities and developers

Agrivoltaics

- Opportunities for farming within the solar projects
- Sites can host pollinators and provide ecological services for the area
- Engage local farmers and find solutions for expanding farming operations



Conservation

Soil

 Developers need to preserve topsoil so the land can be returned to farming at the end of life of the solar project

Water

 State mandated increased stormwater filtration and retention through the state permitting process

Technology

Research

- Reduced land use over time - study found that median power density increased by ~ 50% from 2011 through 2019
- Solar is becoming more efficient to make same amount of energy on less land



EDFR Agrivoltaic Engagement



Arnprior Solar & Shady Creek Lamb Co.

- Site built in 2009 on 200-acres
- Young couple near Ottawa, Ontario wanted to grow flock by grazing outdoors needed 400-500 animals to sustain business
- Solar grazing PILOT project in 2017
- Today, graze Arnprior and other sites expect to lamb 500+ ewes in 2022
- Selling meat to local restaurants and wool to make blankets
- See virtual site tour: <u>https://www.youtube.com/watch?v=6dvL_dvu9OA&t=7s</u>





Mount Morris Agrivoltaic Study

A study analyzing the **co-location opportunities of solar and agriculture** for various scenarios



content/uploads/2021/11/MountMorris-AgrivoltaicReport2021-WEB.pdf



- bee colonies on solar facilities for honey production
- New York is the 8th largest honey producing **state** in the country.
- New York crop growers rely on thousands of honey-bee colonies to pollinate crops valued at **\$624 million**.



Part 1 - Solar Grazing

Example for Sample 1,000 Acre Project

Model A

Grazier purchases lambs for grazing and sale

- Lambs purchased for grazing through the season and then portion sold during the summer, with remainder sold in the fall accounting for lamb losses.
- Lambs are sourced out of state, preferably the Midwest.
- Two revenue streams:
 - 1. Grazing income (\$250/acre assumed)
 - 2. Revenue from lambs sold

Model B

Grazier grazes own flock in addition to subcontracted ewes

- Grazing ewes by an established operator in the area and subcontracting remaining vegetation removal needs to other sheep operators.
- A local sheep producer is awarded the project contract for the season.
- The local sheep producer will graze their flock on the site and subcontract the remaining sheep grazing to other graziers.

56.14% Annual rate of return on investment **\$222K** Net income after depreciation

\$210 Profit per acre \$265K Grazing income N (\$250/acre)

\$102K Net income after depreciation **\$96.44** Profit per acre



Part 2 - Solar Beekeeping

Example for Sample 1,000 Acre Project

Commercial operations honey yields:

- All considered 60 pounds per colony to be a typical yield in New York State
 - Higher than the statewide average of 56 pounds per colony in 2020
 - Higher than the statewide 10-year average of 54.7 pounds per colony

Wholesale:

- Sold to packers in 55-gallon barrels with a net weight of
 660 pounds per barrel.
- Prices from \$1.75 to \$2.50 per pound for New York honey.

Retail:

- Marketed directly to consumers through farmers markets, farm stands, and sales to friends and family
- Prices as low as \$4.00 per pound in 2.5 and 5-pound jars, and from \$6.00 to \$8.00 per pound bottled in 1pound jars

Large Apiary (60 colonies)

One of three scenarios





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Questions & Discussions

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