

Strengthening Small Farms and Their Communities Through Solar Farming

Ridge View 350 MW Solar PV Project Social and Economic Impact Assessment

Executive Summary

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Craig Hart (2022) *Ridge View 350 MW Solar PV Project — Social and Economic Impact Assessment*. Pace Energy and Climate Center. Full report available at <https://peccpubs.pace.edu/browse>.

EDF Renewables proposes to develop the 350 MW Ridge View Solar Project in the Town of Hartland in Niagara County, New York. EDF Renewables initially proposed the project in Spring 2019 to be completed by late 2025.

The solar PV installations will be located on roughly 40 locally-owned properties, many of them family farms, some of which have been handed down since the mid-1800s. Total land lease and easement payments are expected to be \$2.25 million per year, escalating at 2 percent per year, totaling over \$91 million over 30 years.

A 350 MW project will deploy between 750,000 to 1 million solar panels rated at 500 to 600 watts. The project is expected to contain 90 to 100 4.2 MW inverters, roughly one every 15 acres of solar panel area.

At 350 MW, the project will power approximately 88,500 homes, roughly the number of households in Niagara County, with clean, carbon-free electricity.

EDF Renewables will set aside financial security in favor of the Town of Hartland for decommissioning the system pursuant to the requirements specified by New York State regulations.

Over a 30-year period, the project is expected to generate revenue to local landowners and businesses averaging \$2,949/acre to \$3,824/acre each year over the expected period of operation from 2026 to 2055, the range depending upon the extent to which construction jobs are sourced in the immediate community. Compared to average gross farm income in Niagara County of \$1,080 per acre, the Ridge View Solar Project will generate up to three and a half times the revenue of agricultural production.

ENHANCING RESILIENCE OF NIAGARA COUNTY FARMING

Since the 1980's, trade liberalization has globalized agricultural markets, permanently transforming small family-run farms. As a result of these market dynamics, to compete, modern farmers not only must manage the traditional risks associated with price, weather, and disease, but also face new risks as farms become increasingly capital and technology intensive, and subject to factors affecting global agricultural supply chains, including trade relations between major economies, foreign exchange, and other risks. Rising labor, seed, fertilizer and other input costs are eroding profit margins.

Hartland and Niagara County Farms have experienced the same pressures exerted by commoditization and globalized markets driving down farm profits. In response, Niagara County farms have consolidated, increasing in size and reducing in overall number.

Competitive factors have markedly impacted American farmers, painting an uncertain future for small farmer and their communities:

- Farm debt is at the highest levels in three decades.¹
- Over half of farms have been losing money every year since 2013.²
- Farm bankruptcies hit an 8-year high in 2019,³ with many farmers forgoing reorganization because long term trends make it pointless.⁴
- Vertically integrated agrobusiness earn the vast majority of consumer food expenditures, leaving less than 3 percent of the consumer dollar spent for net farm income.
- About 40 percent of farmland in the United States is operated by renters.⁵
- By 2030, over 75 percent of farmland owners will be women over the age of 60,⁶ and the children of farmers are often not pursuing farming given its challenges and low returns.

SOLAR LEASE IMPACTS ON SMALL FAMILY FARMS

Solar PV can provide additional significant and stable revenues to farmers. In total, the solar farm project will generate \$2.25 million per year in pre-tax land lease payments. Assuming a combined federal and state marginal income tax rate of 30 percent, participating households will earn \$1.575 million per year in after-tax income.

Also, highly significantly, unlike farming, solar PV arrays can be deployed on land of poor productive quality. Solar PV thus can help farmers better manage their best land, and still make use of sub-optimal lands.

Importantly, solar PV revenues are independent of the traditional risks of farming — weather, disease and commodity prices as well as government agricultural policies — thus diversifying both farm revenues and risks.

JOBS CREATION

Project Construction Jobs

EDF Renewables proposes to invest approximately \$400 million in order to construct the project, approximately \$52 million of which will be spent on labor during construction. During the predevelopment phase, the project has employed dozens of individuals from upstate New York on a part-time or temporary basis to conduct environmental reviews, interconnection studies, field surveys, community engagement activities, and other preparatory work.

During the construction phase, EDF Renewables estimates that approximately 300 individuals will be employed for two seasons or approximately 18 months.

1 U.S. Department of Agriculture, Economic Research Service, Assets, Debt, and Wealth, updated February 2021. Available at: <https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/assets-debt-and-wealth/> (accessed May 22, 2021).

2 A. Semuels (2019) 'They're Trying to Wipe Us Off the Map.' Small American Farmers Are Nearing Extinction. *Time*. Available at: <https://time.com/5736789/small-american-farmers-debt-crisis-extinction/> (accessed March 29, 2021).

3 Niall McCarthy (2020) U.S. Farm Bankruptcies Reach Eight-Year High, Statista, February 11. Available at: <https://www.statista.com/chart/20779/chapter-12-bankruptcies-filed-in-the-us/> (accessed May 21, 2021).

4 Semuels (2019), *supra* note 2.

5 R. Amundson and L. Biardeau (2018) Opinion: Soil carbon sequestration is an elusive climate mitigation tool. Proceedings of the National Academy of Sciences of the United States of America. Available at: <https://www.pnas.org/content/115/46/11652> (accessed May 21, 2021).

6 P. Petrzalka and A. Sorenson (2014) Women Non-Operating Landowners: Overcoming Barriers to Increasing Conservation on Leased Farmland Preliminary Report. American Farmland Trust.

RIDGE VIEW SOLAR PROJECT CONSTRUCTION JOBS

Position	Jobs	Duration Weeks	Weekly Compensation including benefits	Annual Compensation including benefits	Total Payroll (salary + benefits)
Construction Management	42	74	\$2,615	\$135,980	\$8,127,420
Foundations Installation	15	49	\$2,320	\$120,640	\$1,705,200
Electrical Installation	200	49	\$2,713	\$141,076	\$26,587,400
Module Installation	56	49	\$2,615	\$135,980	\$7,175,560
Racking Installation	70	49	\$2,615	\$135,980	\$8,969,450
Total	383				\$52,565,030

Source: EDF Renewables

In total, construction jobs are estimated to equal 383 annualized full time employee positions. These are well paying prevailing wage or union jobs, considerably higher than current compensation for construction, installation and maintenance positions in the Buffalo-Cheektowaga-Niagara Falls area. For example, according to May 2020 Bureau of Labor Statistics data for the region, electricians earned a mean annual wage of almost \$67,000. The Ridge View Solar Project will pay \$141,000 per year in compensation including benefits for electrical installation positions, which comprise almost half the positions created. Similarly, the other positions are compensated higher than non-solar local trade positions.

Project Operation Jobs

Once operating, EDF Renewables proposes to employ four permanent staff in maintenance and support roles and provide temporary work for contractors and farmers for periodic facility maintenance, landscaping, snow clearing and agrivoltaic activities. Compensation for solar maintenance positions in New York is approximately \$44,000 to \$64,000 per year. As with the construction phase, EDF Renewables expects to compensate the permanent operations phase positions at higher levels, including benefits, in the range of \$80,000 to \$120,000 annually.

In addition to permanent staff, EDF Renewables will employ third parties to maintain vegetation at the solar sites, remove snow, maintain roads, maintain site facilities and substations, maintain panels, and replace or repair racking and electrical components. The costs of these services escalate annually at a rate of 2% to 3%, with some expenses being periodic as equipment ages and warranties expire. Based on EDF Renewables estimates of the extent to which these expenses are provided by local labor, these costs start at over \$270,000 per year in the initial years and grow to almost \$900,000 in year thirty. Over 30-years, local third-party maintenance services inject an additional \$11.3 million to the local economy.

CONTRIBUTIONS TO THE COMMUNITY

Beyond payments to property owners and salaries, EDF Renewables proposes to negotiate a Payment In Lieu of Taxes (PILOT) agreement with the Niagara County Industrial Development Agency for the benefit of the local tax authorities under which EDF Renewables will make payments in lieu of the additional real property taxes that would otherwise have been collected as a result of increases in assessed value due to improvements resulting from the solar project but for the clean energy systems exemption. New York State law exempts any increase in the property value attributable to the addition of a solar panel system from local property taxes. The municipality can opt-out of making the exemption available, however the exemption provides an important economic incentive for property owners to adopt solar and enhances the economics of solar energy projects.

The Town of Hartland, Niagara County, Barker Central School District and Royalton-Hartland Central School District will continue to collect local property tax revenues from participating farms at the pre-solar project rates. Additional contributions to the taxing jurisdictions are expected to be negotiated through the Payment In Lieu of Taxes (PILOT) agreement to be negotiated with Niagara County Industrial Development Agency and Host

Community Benefit (HCA) agreement to be negotiated with the Town of Hartland. The contributions negotiated for both agreements will be paid by EDF Renewables. As a result, any additional property tax that would have been assessed due to increases in assessed value in respect of the solar project improvements will be partially compensated under the PILOT agreement and paid by EDF Renewables. The property owner will thus be exempt from increases in property taxes due to the solar project.

During the operation phase of the Ridge View project, EDF Renewables proposes to make combined PILOT and Host Community Agreement payments of \$1 million annually, escalating 2 percent per year, investing \$40 million in total into the community over 30 years. The Town of Hartland, Niagara County, Barker Central School District and Royalton Hartland Central School District can use these funds on a discretionary basis, freezing or reducing taxes and/or investing in infrastructure upgrades, education or services.

Additionally, the conversion of land from agricultural use to hosting solar panels could potentially result in loss of the agricultural tax exemption for that land. The loss of the agricultural exemption will result in increases in property taxes to be paid by the developer directly to the tax authorities under the lease agreement, and not borne by the participating farms, thereby representing additional income for local tax authorities. EDF Renewables will make additional tax payments to taxing authorities pursuant to the land lease agreements for tax liabilities that result from loss of agricultural exemption tax on properties used by the solar project.

Finally, EDF Renewables will make special district tax payments for fire, water and refuse with respect to solar project improvements, as exemptions are not available for special district taxes.

The amounts proposed under the PILOT Agreement, Host Community Agreement and the additional taxes collected due to the rollback of the agricultural exemption will provide the taxing jurisdictions with over eight times more revenue than the current taxes generated from farming.

EDF Renewables has also pledged to establish a Host Community Fund of \$40,000 per year for the community during construction and the first 10 years of operation. The fund will be distributed to local initiatives, such as youth sports and clubs, American Legion, volunteer fire companies, and the historical society. These funds would be administered by a local committee established for this purpose. These payments will total at least \$480,000.

Under the New York Public Service Commission Host Community Benefit Program, \$500 per MW installed for the first ten years of operation will be devoted to providing rebates for Hartland residents residential electricity bills. The rebate is worth \$175,000 annually to be shared among residents against their utility bills. Based on 1,526 households in the Town of Hartland, this would result in approximately \$100 per year rebate per household.

NEW BUSINESS OPPORTUNITIES

Solar farming is compatible with other business opportunities. New business opportunities in farming include solar array-compatible agriculture like beekeeping and sheep grazing, and potential new business activities such as the establishment of a local abattoir to process sheep, as well as tourism and hospitality business generated by interest in the project.

ADDITIONAL HOUSEHOLD SPENDING & SAVINGS

In total, the solar farm project will generate payments of \$2.25 million per year in pre-tax farm income, escalating at 2 percent per year, for land leases and easements. Assuming a combined federal and state marginal income tax rate of 30 percent, participating households will earn \$1.575 million per year in after-tax income.

Based on surveyed priorities, the \$1.575 million in annual after-tax revenues to participating households would generate an estimated \$437,000 in annual consumption, at least half of which is expected to be spent locally.

Local spending includes food, home renovation, vehicle expenses, fuel, local recreation, and medical expenses. The study survey showed that home renovation is one of the highest priorities of participating households, suggesting that local construction companies will benefit from increased household incomes.

SUMMARY OF COMMUNITY BENEFITS

Over the 30+ year period during which the project will be constructed and operating, the community of Hartland will receive direct economic benefits of at least between \$175 million to \$227 million, depending on how many of the construction phase jobs are filled by Hartland area residents.

Beyond the revenues received by participating farm households, spending by those households on local consumer goods, investment in local business and hiring further add to the value of the project to the local community.

SUMMARY OF BENEFITS

Type	Frequency	Amount	Total Over Project
PILOT and Host Community Agreement Payments	Annual over 30 years	\$1 million per year, escalating 2% annually	\$40.5 million
Additional Taxes due to Loss of Agricultural Exemption	Annual over 30 years	\$34,600 per year, plus a one-time rollback tax penalty with interest of \$210,000, escalating 2% annually	\$1.6 million
Community Benefit Fund	Annual over 10 years + 2 years construction	\$40,000	\$480,000
NY PSC Host Community Benefit Program	\$500 per MW capacity for 10 years (\$500 x 350 MW)	\$175,000 annually for 10 years	\$1,750,000
Solar Lease/Easement Payments	Annual over 30 years	\$2.25 million per year, escalating 2% annually	\$91 million
Additional Local Spending	Annual over 30 years	\$437,000 per year in additional consumption, at least half spent locally, escalating 2% annually	\$8.8 million, assuming 50% of additional consumer spending spent locally
Business Investment in the Local Community	Annual over 30 years	\$190,000 per year, escalating 2% annually	\$7.7 million
Additional Hiring	Annual over 30 years	\$45,000, escalating 2% annually	\$1.8 million
Preconstruction Jobs	3-year period	Not Estimated	
Construction Jobs	3-year period	Up to \$52.5 million	
Operational Jobs	30-year period	\$400,000 per year assuming four positions at average \$100,000 per year	\$12 million, excluding benefits and escalation
Third Party Local Operations Support	30-year period	Variable annual costs, escalating for inflation	\$11.3 million
New Business Opportunities	30-year period	Not Estimated: depends on individual initiative; see discussion in section 5.5 of this paper	

Total Payments – Nominal Value (depending on construction jobs): \$177.0 to 229.4 million

**Total payments, \$/acre/yr (assuming 30 years of operation):
\$177.0 to \$229.4 million/2,000 acres/30 years = \$2,949 to \$3,824**

Source: Author's calculations.