



## **Who is ConnectGen?**

ConnectGen is a renewable energy company comprised of seasoned energy industry professionals focused on developing wind, solar, and energy storage projects across the United States.

Founded in 2018, ConnectGen's strategy is to apply its proven ability to develop, construct and operate clean energy assets to create a multi-technology portfolio of generation and storage projects. The company currently has 139 megawatts (MW) of solar projects in operations and is developing over 4,000 MW of wind, solar and energy storage projects across North America. ConnectGen LLC is a subsidiary of 547 Energy. 547 Energy is Quantum Energy Partners' clean energy platform company.

## **How do solar panels work?**

Solar photovoltaic ("PV") panels typically consist of silicon, tempered glass, aluminum, copper, and semiconductor materials. Silicon, an element most commonly found in sand, has conductive properties that allow it to absorb and convert sunlight into electricity. When light interacts with a silicon cell, it causes electrons to be set into motion, which initiates a flow of electric current in a process known as the "photovoltaic effect".<sup>1</sup>

## **What will the Mill Point Solar Project look like?**

A solar farm is a large group of solar panels that operate together as one power generation facility, delivering electricity to the existing electric grid. Solar farms are typically arranged in parallel rows with approximately 8 feet wide access buffers between each row.

A panel array, which includes both PV panel and rack mounting, typically stands around 12 feet tall. The mounting racks are supported by steel pile foundations generally set up to 8 feet into the ground without the use of concrete. Panel designs currently being evaluated by ConnectGen include single-axis tracking mounting, which rotate slowly from east to west once a day, keeping the sun at a 90-degree angle from the panels to ensure maximum energy is absorbed. ConnectGen monitors technology improvements, and will incorporate improved design as appropriate which may affect solar array dimensions. Each section of solar panels is typically fenced off to ensure security and safe operation.

## **What other equipment is usually present at a solar farm?**

Other project infrastructure present at a solar farm includes common electrical equipment such as inverters and transformers and the electrical equipment necessary to deliver energy to the existing electrical grid such as underground and overhead transmission lines.

## **How are solar projects permitted in New York State?**

New York State requires that major renewable energy facilities, including solar farms with a nameplate generation capacity of 25MW or more, undergo a rigorous state permitting process, prior to construction and operation. The Mill Point Solar Project will obtain a Siting Permit from the Office of Renewable Energy Siting (ORES) in accordance with new regulations promulgated pursuant to New York State Executive Law Section 94-c. ORES will establish Uniform Permit Standards and Conditions outlining rigorous requirements for the study of the environmental, public health, and public safety impacts as well as the incorporation of extensive public input and local stakeholder engagement into the development, design, and construction of solar energy projects like the Mill Point Solar Project.

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1. <https://news.energysage.com/solar-panels-work/>

## How will this project benefit the Town of Glen and Montgomery County?

ConnectGen expects to pay more than \$2 million per year directly to Glen landowners through lease, easement, and neighbor agreements, resulting in more than \$60 million in payments to local landowners over the course of project life. These landowners, in turn, will use this money to reinvest in new farm equipment or home improvements, which will generate additional income for the County in assessed property taxes and sales tax. Additionally, ConnectGen is contractually obligated through its REC contract with NYSEERDA to provide over \$20 million dollars of in-state economic benefits to New York within the first 3 years of project operation alone. These benefits include in-state construction labor, landowner payments, PILOT and Host Community Agreement (HCA) payments, local equipment and materials purchases, local sponsorships and donations, and full-time operations jobs.

Further, the Mill Point Solar Project represents an approximately \$325 million capital investment, which will bring significant revenue, jobs, and economic development into the Town of Glen and Montgomery County. The Project will also result in significant annual revenue to the Town of Glen, the Fonda-Fultonville School District, and Montgomery County without burdening existing resources. It is estimated that through the PILOT and Host Community Agreements, the project will provide additional tax revenues, which could total more than \$30 million over the life of the project.

## Do solar farms affect agriculture?

Solar projects are low impact and coexist well with agriculture, operating without any impact to adjacent agricultural properties. During the solar project's 30 year or more lifespan, the land hosting the project gets a recovery period, allowing the soil to restore fertility and rebuild. Native vegetation can grow under the panels, allowing the land to retain water and topsoil and improving soil health over time, which can increase the productivity and value of the land for agriculture in the future.<sup>2</sup>

The construction, post-construction restoration, and decommissioning of the Mill Point Solar Project will be conducted in accordance with the New York State Department of Agriculture and Markets "Guidelines for Solar Energy Projects – Construction Mitigation for Agricultural Lands" to mitigate construction impacts to agricultural land. Further, ConnectGen will have a Stormwater Pollution Prevention Plan (SWPPP), which will outline ConnectGen's plans for sediment and erosion controls to manage both the amount and composition of any stormwater discharged from the project site. There are no anticipated stormwater runoff issues for land hosting or adjacent to panel areas.

At the end of the solar project's useful life, the project is decommissioned, and the land can be returned to agricultural use.<sup>3</sup> In addition, a solar project can offer a consistent, weather-resistant source of income for rural farmers and their local economies, providing an alternative "crop" that diversifies farmers' revenues.

## Does solar power make economic sense?

Solar power is now one of the cheapest new sources of electricity in most of the world due to declining equipment costs, improved technologies, and public policy supporting the procurement of renewable energy across the country.<sup>4</sup>

In the last decade, the cost to install solar has dropped by more than 70%, and as of Q3 2020, prices are at their lowest historical level across all market segments.<sup>5</sup> According to Lazard's Levelized Cost of Energy Analysis – Version 14.0 (2020), even without tax credits, new solar resources have a levelized cost of energy in the range of 3.1¢/kWh – 4.2¢/kWh for large-scale crystalline solar. This range falls below the levelized cost of energy for new coal or gas combined cycle power production.<sup>6</sup> These results have been bolstered by the International Energy Agency's World Energy Outlook 2020,<sup>7</sup> which found that "For projects with low-cost financing that tap high-quality resources, solar photovoltaic (PV) is now the cheapest source of electricity in history."<sup>8</sup>

2. <https://www.energy.gov/eere/solar/farmers-guide-going-solar>

3. <https://www.seia.org/sites/default/files/2019-11/Solar%20Ag%20Land%20Usage%20FactSheet%202019-PRINT.pdf>

4. <https://www.bloomberg.com/news/articles/2020-04-28/solar-and-wind-cheapest-sources-of-power-in-most-of-the-world>

5. <https://www.seia.org/solar-industry-research-data>

6. <https://www.lazard.com/perspective/lcoe2020>

7. <https://www.iea.org/reports/world-energy-outlook-2020>

8. <https://www.resilience.org/stories/2020-11-06/solar-is-now-cheapest-electricity-in-history-confirms-iea/>

9. <https://www.nrel.gov/docs/fy13osti/59065.pdf>

10. <https://emp.lbl.gov/utility-scale-solar/>

Adding to the growing appeal, solar energy is uniquely able to offer electricity at a fixed-price contract over the life of the project. Solar energy has no fuel cost and therefore no fuel price risk, allowing it to act as a hedge against future volatility of natural gas prices.<sup>9</sup> Levelized power purchase agreements for commercial-scale solar projects fell to \$24/MWh in 2019, down 17% from 2018 and more than 80% since 2010.<sup>10</sup>

### **What sort of tax incentives do solar projects get and why are they given?**

The U.S. has a long history of supporting energy infrastructure through the tax code. Most energy infrastructure receives some form of federal tax incentive, including oil and gas. The incentive for solar energy is called the Investment Tax Credit (ITC). This tax credit attracts private investment to solar projects, which drives significant new economic activity, including solar manufacturing and construction jobs. It also helps reduce the overall cost of energy from solar projects, which is good for ratepayers.

### **Do solar projects pay taxes over the long-term?**

Yes, this solar project will pay millions of dollars in taxes starting on day one of operation and continuing throughout the life of the project.

### **Who will be responsible for maintaining the solar farm once it is constructed?**

ConnectGen will be fully responsible for maintaining the solar farm and associated equipment, as well as the property within the Mill Point Solar Project's boundaries. Landscape maintenance at the solar farm will be performed by companies contracted directly by ConnectGen.

### **Are solar panels safe?**

Yes. Solar panel materials are enclosed with glass and do not mix with water or vaporize into the air, so there is little to no risk of chemicals, including greenhouse gases, being released into the environment during normal use. Crystalline silicon PV panels, an extremely common type of solar panel used around the world, "do not pose a material risk of toxicity to public health and safety."<sup>11</sup> ConnectGen is committed to installing these types of panels to ensure safety within the community.

Electric and Magnetic Fields (EMF) are present everywhere in our environment, including TV antennas, radio signals, Wi-Fi, cell phones, and common household appliances.<sup>12</sup> EMF emissions from solar panel systems are non-ionizing and in the same extremely low frequency range as those induced by household appliances.<sup>13</sup>

All solar facilities are designed to strict electrical safety standards to ensure safe operation. Product safety standards, installation requirements, and building codes for solar facilities are addressed by the National Fire Protection Agency's National Electrical Code, the International Code Council's International Fire Code, the International Association of Firefighters, and several other national, state and local safety and product standards groups.<sup>14</sup>

### **What other equipment is usually present at a solar project?**

Other project infrastructure present at a solar project includes common electrical equipment such as inverters and transformers, and the electrical equipment necessary to deliver energy to the existing electrical grid such as underground and overhead transmission lines. ConnectGen's project will also include a battery storage facility (see Storage FAQs for more information).

### **Will the electricity produced by the South Ripley Solar Project be sent to New York City?**

ConnectGen has signed a contract with the Jamestown Board of Public Utilities (BPU) for Renewable Energy Credits produced by the project, which will help the Jamestown BPU meet its regulatory requirements pursuant to New York State's Clean Energy Standard Program. ConnectGen does not currently have a power purchase agreement to deliver the power generated at the South Ripley Solar Project to other areas of New York. In addition, the energy consumption tends to take place near the generation sources, therefore the energy produced by the project will likely be utilized locally through the New York State electric grid.

11. [https://content.ces.ncsu.edu/static/publication/js/pdf\\_js/web/viewer.html?slug=health-and-safety-impacts-of-solar-photovoltaics](https://content.ces.ncsu.edu/static/publication/js/pdf_js/web/viewer.html?slug=health-and-safety-impacts-of-solar-photovoltaics)

12. <https://www.who.int/news-room/q-a-detail/radiation-electromagnetic-fields>

13. <https://pubmed.ncbi.nlm.nih.gov/26023811/>

14. <https://www.seia.org/initiatives/fire-safety-solar>

### **What happens if a solar panel gets hit by lightning?**

Solar farms are designed with lightning protection on all system components, which protect against damage in the event of a lightning strike. The ground grid will be designed in consideration of the conductivity of soils in the area as well as any other nearby conductive materials that are buried or connected to the ground, such as water or natural gas pipes.

### **Do large-scale solar projects make noise?**

Temporary, elevated noise levels may occur during the construction phase of a solar farm, but once construction is complete, an operating solar farm emits minimal noise during the day and is dormant at night. ConnectGen is committed to taking steps to minimize and mitigate visual impacts of the project through vegetative buffers and setbacks from property lines, which will provide additional sound dampening benefits, as well.

### **Who will be responsible for decommissioning the Mill Point Solar Project?**

ConnectGen's lease agreement states that the company is responsible for the decommissioning and removal of project infrastructure at the end of the project's life.

Additionally, New York State will require a Decommissioning and Restoration Plan be put in place as part of the state 94-c permitting process. The Decommissioning and Restoration Plan will outline the various ways in which ConnectGen will safely and responsibly remove installed solar equipment and how the property within the project area will be restored to as close to its state prior to construction as possible. As required under Section 94-c and the Town of Glen Solar Law,<sup>15</sup> ConnectGen will put financial security in place early in the life of the project to ensure that host communities and landowners will bear no responsibility for decommissioning or restoration.

### **What is the footprint of the Mill Point Solar Project?**

ConnectGen expects to use approximately 2,000 acres for the Mill Point Solar project. Of that, only 1,250 to 1,500 acres are expected to host project infrastructure, and the project will be located wholly within the town boundaries of Glen. Construction of solar projects is typically low impact and does not typically require significant site work or soil disturbance. ConnectGen aims to further minimize potential environmental impacts by avoiding wetlands, limiting tree clearing, and working with participating farmers to utilize less productive agricultural fields. While ConnectGen has made sure to keep landowners and stakeholders in neighboring towns informed about the development of the project, the project boundaries have always been and will remain within Glen.

### **Is solar power reliable above the 35th parallel?**

Solar power is a reliable source of energy, with solar projects being installed in all 50 states across the US.<sup>16</sup> New York State, which has a considerable amount of solar potential, has consistently been in the top 10 US solar markets and is projected to install 4,367 megawatts (MW) over the next five years, all above the 40th parallel.<sup>17</sup>

A solar project will produce power most days of the year, even under cloudy conditions, and in some cases, clouds can result in better panel performance. Further, a recent industry trend is the use of bifacial solar panels, which have solar cells that capture sunlight from the front of the panel as well as sunlight that is reflected off the ground. These panels have been shown to yield 11% more energy than standard solar panels in a tilted, ground-mounted solar installation.<sup>18</sup> We are in the process of collecting a years' worth of on-site solar and weather data in the project area, which will be utilized to confirm that the solar resource in Glen can support solar project operations.

No electricity source runs 100% of the time, including coal, gas, and nuclear plants. While solar is variable as a power resource, its variability can be predictably forecast and used to complement other generation sources. Grid operators have decades of experience managing changes in supply and demand, including the gradual, predictable changes in solar output.<sup>19</sup>

15. [https://www.co.montgomery.ny.us/web/municipal/glen/documents/GlenSolarLaw\\_Effective11-9-2020.pdf](https://www.co.montgomery.ny.us/web/municipal/glen/documents/GlenSolarLaw_Effective11-9-2020.pdf)

16. <https://www.seia.org/us-2-million-solar-strong>

17. <https://www.seia.org/sites/default/files/2020-09/New%20York.pdf>

18. <https://www.greentechmedia.com/articles/read/bifacial-plus-tracking-boosts-solar-energy-yield-by-27-percent#gs.wLGHOLY>

19. <https://www.forbes.com/sites/joshuarhodes/2018/08/21/what-does-100-renewable-energy-really-mean/?sh=7b6f757d1ac8>

## What happens if a solar panel gets hit by lightning?

Solar farms are designed with lightning protection on all system components, which protect against damage in the event of a lightning strike. The ground grid will be designed in consideration of the conductivity of soils in the area as well as any other nearby conductive materials that are buried or connected to the ground, such as water or natural gas pipes.

## Will the Mill Point Solar Project produce enough energy to offset the energy used in manufacturing components?

Solar projects do not burn fossil fuels to generate electricity, and as a result, do not emit any air pollutants such as carbon dioxide, sulfur dioxide, nitrogen oxide, or particulate matter. Both fossil fuel and non-fossil fuel power technologies induce life-cycle greenhouse gas emissions that stem from the energy requirements for their construction and operation. Known as a “carbon debt”, this debt of energy must be paid off to calculate how solar projects reduce emissions over their lifetime. A typical utility-scale solar project repays its carbon footprint in roughly 12 months or less,<sup>20</sup> allowing them to provide decades of zero emission energy.

## Does solar power benefit from large federal subsidies?

For nearly 100 years, the federal government has supported energy innovation through various forms of tax incentives and other financial tools. The Federal Investment Tax Credit (ITC) is one of the most important federal policy mechanisms to support the growth of solar energy in the US. It is a 30% Federal tax credit, as opposed to a subsidy, for investment into solar project infrastructure on both residential and commercial properties. The tax credit was created in 2005 when the 2005 Energy Policy Act was passed by a Republican-controlled Congress and enacted by George W. Bush. It was extended in 2015 with bipartisan support.<sup>21</sup>

While solar power currently benefits from the ITC, it represents only a small fraction of the money U.S. spent each year on incentivize fossil fuels. Over the last century, more than \$500 billion in tax incentives and other financial tools has been spent on the energy industry.<sup>22</sup> According to the Nuclear Energy Institute and other third-party sources, the breakdown of all federal energy incentives is as follows<sup>23</sup>:

- 65% to fossil fuels
- 21% to nuclear
- 8% to wind
- The remaining 12% is split between solar and all other forms of renewable energy, including biofuels

With over 85% of these incentives going to fossil fuel and nuclear energy, solar power only receives a benefit of mere cents on the dollar comparatively. And even without tax credits, new solar resources have a levelized cost of energy that falls below the levelized cost of energy for new coal or gas combined cycle power production.<sup>24</sup>

## Do you work with local fire departments in your area?

Prior to operation, we will develop an Emergency Response Plan in accordance with industry best practices, which will outline the response procedures to be employed should an emergency arise at the project site. We will work closely and collaboratively with the local departments and authorities. We provide pre-construction training to all emergency response personnel, which includes a description of the facility, any potential construction risks, and the role of emergency responders should an incident occur. After construction is complete, we will host the emergency response personnel for a site visit to make sure they are familiar with the system and our Emergency Response Plan.

20. <https://www.nature.com/articles/ncomms13728>

21. <https://www.seia.org/initiatives/solar-investment-tax-credit-itc>

22. <https://www.leahy.senate.gov/imo/media/doc/R41227EnergyLegReport.pdf>

23. <https://www.aweablog.org/14419-2/>

24. <https://www.lazard.com/perspective/lcoe2020>

## Do solar projects negatively impact property values?

Property value studies conducted across the country have shown that proximity to large-scale solar projects does not measurably impact property values or deter the sale of agricultural or residential land. For example:

- A study conducted across Illinois determined that the value of properties within one mile increased by an average of two percent after the installation of a solar project.<sup>25</sup>
- A study of five counties in Indiana indicated that upon completion of a solar project, properties within two miles were an average of two percent more valuable compared to their value prior to installation.<sup>26</sup>
- An appraisal spanning from North Carolina to Tennessee shows that properties adjoining solar projects match the value of similar properties that do not adjoin solar projects within one percent.<sup>27</sup>

Mounted solar projects are typically no more than 12 feet high, emit minimal noise, and are designed in accordance with strict electrical safety standards to ensure safe operation. In addition, we can take steps to minimize and mitigate the visual impacts of the project through vegetative buffers and setbacks from property lines.

Solar leases offer a viable, long-term revenue stream to landowners. Lease payments are stable and predictable, can protect against fluctuating commodity prices, and allow landowners to diversify their income, which can help maintain and preserve their properties.

## Will the Mill Point Solar Project affect the local wildlife?

If sited and developed properly, the Mill Point Solar Project will have minimal impacts on local wildlife. In fact, studies show that solar facilities can provide shelter for species, promote land stability, preserve habitat, and support biodiversity.<sup>28</sup>

As part of the New York State siting process, the Mill Point Solar Project is consulting with state and federal agencies and stakeholders, including the Office of Renewable Energy Siting, NYS Department of Public Service, NYS Department of Environmental Conservation, NYS Department of Agriculture and Markets, and the U.S. Fish and Wildlife Service to ensure that potential environmental impacts are fully considered. Studies to help assess potential impacts include a noise impact assessment, seasonal avian studies, sensitive wildlife surveys, wetland and habitat delineations, and a wide range of other studies and surveys. The information gathered from this comprehensive coordination and review is used to inform final siting and design as well as various resource management plans and environmental protection measures to avoid, minimize or mitigate impacts to wildlife.

Once constructed, the Mill Point Solar Project will produce no pollution or emissions. Further, native vegetation can grow under the panels, and the project can provide sanctuaries for flora and fauna to thrive.<sup>29</sup> Vegetation management concepts, such as integrated vegetation management and pollinator friendly practices, provide opportunities to promote beneficial plants species and enhance habitats on the site.

Fencing, a security measure put in place in accordance with industry best practices, will be limited to areas around panels. Collection easements between panel areas will not be fenced to allow larger wildlife to traverse through the Project Area without disruption.

## Will people still be able to hunt near the Mill Point Solar Project?

Yes. During construction, ConnectGen will coordinate with participating landowners to ensure that hunting activities are conducted in a safe manner while construction workers are on-site. Once operational, hunting will no longer be allowed within panel areas, but landowners will be able to hunt on parcels around the project area without restriction. Limited fencing, a security measure put in place in accordance with industry best practices and local requirements, will be erected around panel areas. Collection easements between panel areas will not be fenced to allow wildlife to traverse these corridors without disruption.

25. <https://www.southtripleysolar.com/wp-content/uploads/2020/09/Kirkland-Grandy-Solar-Impact-Study.pdf>

26. <https://www.mcleancountyil.gov/DocumentCenter/View/13192/Patricia-L-McGarr-Property-Value-Impact-Study?bidId=>

27. McGarr, Patricia. Property Value Impact Study. Cohn Reznick LLP Valuation Advisory Services, 2 May 2018

28. <https://www.solarpowerworldonline.com/2019/03/utility-scale-solar-wildlife-stewardship/>

29. <https://www.seia.org/sites/default/files/2019-11/Solar%20Ag%20Land%20Usage%20FactSheet%202019-PRINT.pdf>

## Will herbicides be used during maintenance activities?

ConnectGen will develop and implement a Vegetation Management Plan that establishes vegetation goals and identifies the specific treatments that may be used to ensure safe and reliable operation of the facility. Common practices to control and manage vegetation will involve mechanized and agrarian means; however, herbicides may be employed, depending on the target plant species, land use activities and landowner input. ConnectGen is committed to the conscientious use of appropriate management techniques to control vegetation in a way that is designed to minimize the risk of unreasonable adverse effects on human health and the environment.

## What is the typical lifespan of a photovoltaic (PV) panel?

PV panels are designed to last more than 25 years, and many manufacturers offer performance guarantees backed by warranties.<sup>30</sup> ConnectGen anticipates that the panels used for the Mill Point Solar Project will have a useful life of at least 30 years. Like many other durable products and construction materials, solar equipment can last for decades with proper maintenance, of which they require very little due to the presence of very few, if any, moving parts.<sup>31</sup> Proper operations and maintenance can increase efficiency, extend a project's lifetime, and ensure safety.<sup>32</sup> Prior to construction, the Mill Point Solar Project will develop and implement an Operations and Maintenance Plan based on industry best practices and site-specific environmental conditions.

## Can solar panels be recycled?

Solar PV panels typically consist of glass, polymer, aluminum, copper, and semiconductor materials.<sup>33</sup> Recycling technologies have emerged in the last several years that have enabled these materials to be recovered and recycled at the end of their useful life.<sup>34</sup> PV solar panel recycling technologies have been put in place over the last decade that have been shown to recover over 95% of semiconductor materials and over 90% of the glass in the panel.<sup>35</sup> In other cases, solar PV components can be reused or refurbished to have a "second life" of generating electricity.<sup>36</sup> The industry continues to work with recycling partners and to research and explore additional cost-effective recycling technologies.<sup>37</sup>

30. <https://www.seia.org/initiatives/recycling-end-life-considerations-photovoltaics>

31. <https://news.energysage.com/how-long-do-solar-panels-last/>

32. <https://www.nrel.gov/docs/fy17osti/68281.pdf>

33. <https://www.seia.org/research-resources/end-life-considerations-photovoltaics>

34. <https://www.irena.org/publications/2016/Jun/End-of-life-management-Solar-Photovoltaic-Panels>

35. [https://iea-pvps.org/wp-content/uploads/2020/01/IRENA\\_IEAPVPS\\_End-of-Life\\_Solar\\_PV\\_Panels\\_2016.pdf](https://iea-pvps.org/wp-content/uploads/2020/01/IRENA_IEAPVPS_End-of-Life_Solar_PV_Panels_2016.pdf)

36. <https://www.seia.org/research-resources/end-life-considerations-photovoltaics>

37. <https://www.seia.org/initiatives/seia-national-pv-recycling-program>



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