Novel ME Gorham Daigle CSG, LLC
700-Kilowatt Solar Garden

Introduction

Community Solar Gardens are supported by the State of Maine as a renewable energy supply, governed by the Public Utilities Commission rules. Novel Energy Solutions (NES) has registered with the Maine Public Utilities Commission in order to be recognized as a trusted developer of Community Solar. The purpose of constructing a community solar garden (solar array) is to generate offsite solar energy that will be connected directly to the electric grid for the on-going benefit of subscribers to the solar garden. Nationally, as many as 75% of homes and businesses are unable to install solar on their property due to site conditions, regulations and cost; making off-site solar energy production their only option.

In 2019, the Maine Legislature passed legislation to encourage the development of solar and other small renewable energy projects in the State. As a result, Maine has programs available that provide opportunities for both residential and non-residential customers to participate in these projects, including one that allow customers to share the costs and benefits of small solar or other types of renewable energy, sometimes referred to as "Community" projects. Under this program, participating customers receive kilowatt-hour (kWh) credits on their electric utility bill that reduce the amount of the payment owed to the utility, to the standard offer service provider, or, if applicable, to the customer's competitive electricity provider.

This proposed site will be constructed to produce 700kW (0.700MW) of electric generation. The request will be for a period of up to 30 years. The electrical energy will be distributed directly to the existing electrical grid for subscribers to access the energy produced by the system. The impact to the area is low from a construction, operation, and end of life perspective. Construction and setup of the system is minimally invasive and solar arrays are a long-term passive land use. The system does not alter the underlying nature of the land which can be returned to any other appropriate use upon decommissioning. The system will reduce the carbon footprint and greenhouse gas emissions of the State of Maine. Subscribers to the community solar garden can save on their electric bills (generally a fixed savings of 10%) over the life of the agreement with their utility company (hereinafter "Utility"). Meanwhile, the landowner has a new option that brings value to their property without impacting the underlying nature of the land. Distributed solar generation, energy produced at multiple locations across the grid helps prevent electric line loss and dependence on carbon-based fuel sources.

Solar panels and systems have been used in the United States for over forty years and have gained in popularity as the cost of solar energy becomes competitive with traditional fossil fuels, in addition to the positive environmental benefits. Solar systems have been found to be good neighboring land uses due to their passive nature, lack of negative impact on neighboring property values, and benefits to the environment and local economy.

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Description
The parcel is owned by Claude Jr. & Sandra Daigle
PID#: Map 69 Lot 1-1
Project Location: Dyer Road, Gorham, ME 04038; GPS 43.728701, -70.442137
Parcel Description: Undeveloped/Vacant
Site Access: Off of Dyer Road
Ownership: Land will be leased from the landowner, and project ownership will be Novel ME Gorham Daigle CSG, LLC

Project Team and Contractors
The project will be designed, constructed, and operated by NES and their trusted vendors.

Engineering:
Novel Energy Solutions, Scott Geddes (Head of Engineering), P.E. (CO, IL, IN, ME, MI, MN, OR, WI)
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Surveying:
Novel Energy Solutions, Tom Healy (Land Surveyor), License # PLS 2632
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Construction:
Novel Energy Solutions, Ken Craft (Director of Construction)
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Environmental (desktop reviews)
Novel Energy Solutions, Robin Brigham (Manager of Environmental Compliance)
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Protected Natural Resources (field work):
Haley Ward, Inc. Johanna Szillery, LSS (Senior Project Scientist)
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Stormwater Protection and Inspections:
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Equipment

The project will consist of 2,184 Waaree Ahnay BiFacial 445-Watt solar panels. Bloomberg New Energy Finance rates solar panels in tiers based on a variety of factors including financeability. All Tier-1 panels used have a 25-year warranty. Panels will feed inverters which ultimately connect to the electric grid at a point of interconnection located at a point closest to the 3-phase power lines as engineered to meet industry, state and federal standards.

Transformers and related equipment will be placed on a pre-cast concrete slab on grade adjacent the 700kW array grouping. The Utility required poles will be standard electric utility poles with underground wires unless otherwise authorized or required, and the Utility will acquire the necessary permits for their poles. Additional poles may be required depending on the manner of interconnection. All non-Utility equipment, materials, supplies, concrete, etc. will be removed at the end of the useful life of the project. All equipment must meet Utility and national standards for safety and interconnection.

Site Appearance & Impact

The parcel will consist of a 700kW Solar Garden with 2,184 solar panels. This system will utilize a single axis tracker system which significantly increases the efficiency of the system by allowing the panels to absorb more solar energy. The array and equipment pad will be surrounded by a 7' high agriculture style, wire mesh fence. The panels will not exceed 12 feet in height at full tilt. The poles will be pounded straight into the ground and the depth they will have to be pounded, will be determined by pull testing which will be completed prior to plan sets being completed to ensure that they are structurally sound. The installation will include 84 strings with 26 modules on each string with 20 foot row to row spacing on a single axis tracker. The proposed layout is subject to engineering and final Utility approval. The final layout will continue to meet all Town of Gorham's requirements and performance standards.

Gated access will be provided with a key code or double lock for Utility and emergency response personnel. Signage will include 24-hour contact information. One light at the point of interconnection will be illuminated continually in the evening hours for safety of responding personnel.

Natural and existing screening can provide visual impact mitigation for the surrounding properties and roadways. Following construction of the arrays and any other project requirements, vegetation will be established to ensure soil stabilization, improve storm water quality, and for site beautification. Low Maintenance Turf seed mix or similar seed mix is utilized. Native grasses or specific pollinator plantings will be utilized. Once established, this site will filtrate surface waters and minimize erosion better than traditional croplands. Additional site visits and pro-active weed identification and control will occur in the earlier seasons of the vegetative growth to ensure proper site development. Regular site maintenance will occur throughout the life of the system.

Construction

Construction activities are currently expected to begin in Spring 2024 and be complete around Summer 2024. Installing posts at different depths and lengths can accommodate minimal sloping on sites, preventing the need for significant grade and fill activities. Grading and minor excavation may be needed for the switchgear pad to ensure level ground for the slab on grade. All necessary equipment

and supplies will be delivered within a 4-6 week period at the start of construction. During the start of construction there will only be an average of two semi-trailers per day. Construction is expected to take 5 weeks. Deliveries will come from Town Farm Road depicted on the site plan. A temporary delivery direction sign may be installed at the start of construction upon approval from the road authority. Temporary parking and staging will be off-road at the site entrance as shown on the site plan. Disposal of waste materials will comply with all local, state and federal regulations and best practices.

State and National electrical codes must be met, inspected and approved prior to interconnection. A signed interconnection agreement with the Utility can be provided prior to construction activities.

Hydrological and Environmental Features:

The Proposed Project will be located within the Dundee Pond-Upper Presumpscot River watershed (Hydrological Unit Code: 010600010304). The closest named surface water body is the Presumpscot River, approximately 1 mile east of the Proposed Project Area. According to the Maine NPS priority Watersheds GIS mapper tool, the Proposed Project is not located in a 'Lake Most at Risk' or 'Urban Impaired Stream.' FIRM maps show the Project Area in Zone X – area of minimal flood hazard and the Project is not within a Sole Source Aquifer zone.

The Projects impacts to water resources will be minimal. Short-term, minor water quality impacts may occur during construction. These impacts would be associated with soil from disturbed areas being washed by stormwater into adjacent waters during rainstorm events; however, these impacts would be temporary and would not significantly alter water quality conditions. Stormwater management will be carried out in compliance with the requirements and Best Management Practices (BMPs) detailed in the Maine Construction General Permit (MCGP). A Stormwater Management Plan (SWMP) has been developed for this Project and will be submitted with the final package. The Erosion Control Plan (ECP) and associated BMPs will be modified or updated as site conditions require. The Stormwater Permit-by-Rule (SW PBR) application will be submitted to the Maine Department of Environmental Projection (MDEP). **These permits have been submitted and we are still awaiting the approvals from MDEP. All required approvals can be provided as a condition of approval and no construction or civil work will be commenced until we have all appropriate environmental/MDEP permits.** Biological resource reviews and consultations with the Maine Natural Resource Program (MNAP), Maine Department of Inland Fisheries and Wildlife (MDIFW), and the US Fish and Wildlife Service (USFWS) IPaC have been initiated and a response is still pending from MDIFW, MNAP had no rare or botanical features mapped, and IPaC consultation resulted in the following determinations:

Species	Federal Status	Critical Habitat	ESA Determination
Northern Long-eared Bat	Threatened	No	No Effect
Monarch Butterfly	Candidate	No	May Occur

Novel Energy Solution's (NES) Environmental Specialists have completed a desktop analysis of available data to identify potential protected natural resource (PNR) concerns that may impact the proposed development. Based on the desktop analysis, no NWI Mapped wetlands, hydric soils, or wetland signatures were identified in the Proposed Project Area. A field visit by a professional wetland scientist to identify and locate field-observable resources will be scheduled. According to the results of the field survey, additional environmental permitting may be required.

Deer Wintering

This project is NOT located within a deer wintering area nor is there any nearby. Proposed fencing is under 8 feet tall therefore deer would be able to jump out of the fenced area safely. If requested by the Board, another gate at the far side of the project area can be added to allow for easier access out if deer were to possibly be trapped in the project area.

Potential to Affect the Environment and Public Health

This project is focused on bringing additional clean energy to people in Maine who are unable to access solar on their property. It will reduce the utility's and the state's carbon emissions. The proposed solar array is passive and is designed to capture the sun's rays, not reflect them. Solar panels have an equivalent glare factor as a body of water. Due diligence and permitting is required through the Maine Department of Environmental Protection (MDEP), Maine Department of Inland Fisheries and Wildlife (MDIFW), and more to ensure environmental and human health protection and compliance.

Decommissioning, Restoration Plan and Insurance

MDEP oversees the solar decommissioning process per the Solar Decommissioning Law, and a performance bond is required to be provided by the developer of the solar array prior to construction (35-A M.R.S. § 3494). The performance bond will be utilized by NES (or other developer at time of decommissioning) to restore to site back to its original state. The soils are expected to be restored and renourished from the native and pollinator grasses that inhabit the site during operation of the solar array. All equipment, concrete (small slab from equipment pad), and materials will be removed from the site unless useful for future land use (i.e. underground wiring).

There is very little data on the cost of decommissioning solar arrays due to the lack of the activity nowadays. In order to mitigate this risk, the Solar Decommissioning Law required the owner of the array to reevaluate the decommissioning cost 15 years after the initiation of the bond, and every 5 years thereafter. The surety is also updated to reflect the updated cost. Please refer to the MDEP Solar Decommissioning Permit and Law for more information. Novel will follow any Town wide Decomissioning rules or Ordinances as well. The Decommissioning Plan Approval will be submitted to the Town once received back from MDEP.

Conclusion

We are excited to complete this project in a strong partnership with Claude & Sandra Daigle and the Town of Gorham. We are committed to following best practices and all State, Federal and local rules and regulations to develop a community solar garden providing the many benefits to the local community.