



Memorandum

To: C. Elizabeth Gibson, Town Manager; Town of Nantucket

CC: Mark Willett; Wannacomet Water Company Director

David Gray, Sewer Director; Town of Nantucket

Lauren Sinatra, Energy Coordinator; Town of Nantucket

From: Seth Sakamoto; TotalEnergies

Subject: Update of Municipal Solar Projects & Contract Revisions

Date: December 7, 2022

Introduction

The purpose of this memorandum is to provide a status update of the two-municipal solar projects, which were awarded to SunPower Corporations, Systems (“Sunpower”) by the Town of Nantucket in 2020:

- A 3.8MW ground-mounted solar-PV project comprised of two arrays at the Wannacomet Water Company’s *Wyer’s Valley Pumping Station* property, located at 1 Milestone Rd; and
- A 106kW roof-mounted solar-PV array at the Surfside Wastewater Treatment Facility, located at 81 South Shore Rd.

Since the last Select Board presentation in December 2020—when contracts were initially approved—both projects have been modified in size and scope to maximize economic viability and savings, while accommodating various stakeholder requests and needs to minimize potential impacts.

As a result of these numerous revisions, which were negotiated between Town representatives—including Town and Water Company staff, Town Counsel, and the Town’s solar consultant—and Sunpower/TotalEnergies,* the following restated and amended contracts must be executed for the projects to proceed to final permitting and construction:

- Surfside Wastewater Treatment Facility (“WWTF”) Solar Project:
 1. Engineering, Procurement and Construction Agreement (“EPC”)
- Wannacomet Water Co. Wyers Valley (“WWCo”) Solar Project:
 1. Amended and Restated Net-Metering Credit Purchase Agreement (“NEM”)
 2. Restated Lease Agreement (“Lease”)
 3. First Amendment to the Agreement for Payment in Lieu of Taxes (“PILOT”)

*Note: SunPower’s Commercial and Industrial Solutions business, which was responsible for developing the WWCo Project and WWTF Project, was wholly acquired by [TotalEnergies Distributed Generation USA, LLC](#) (“TotalEnergies”) in May of 2022. TotalEnergies has continued to work with the Town to develop the Projects since its acquisition of SunPower’s commercial business, with key staff remaining. Throughout this memo, TotalEnergies is referenced in place of SunPower for continuity and ease of understanding.



Project Revisions & Updates

In 2019, the Town solicited competitive proposals for the development of municipal solar projects and ultimately selected SunPower (now TotalEnergies) as the most-advantageous bidder. While a variety of municipal facilities and properties were evaluated, the Wannacomet Water Company Wyer's Valley site and the Surfside Wastewater Treatment Facility were ultimately selected as the most viable and attractive projects to developers.

Wannacomet Water Company Project; 1 Milestone Rd

Over the course of the last two years, the project design details have been refined to avoid, minimize, and mitigate potential impacts to water supply operations and grid interconnection, visual impacts to the immediate surrounding areas, and environmental impacts to local flora and fauna as evaluated by applicable state agencies.

Since the project contracts were previously approved in December of 2020, the following changes and modifications have been made to the WWCo Project, which will necessitate revised contracts to proceed:

- *Increased Setbacks and Visual Barriers*: Specifically on the north side of the 1 Milestone Rd. property, the visual buffer, separating the WWCo Project from Milestone Rd, has been increased from 65' to 100', preserving 85' of natural vegetative screening.
- *Decreased System Size*: The WWCo Project has been reduced in size by approximately 20% (i.e., 4.7MW to 3.8MW) to achieve the increased setbacks along Milestone Rd as requested by area neighbors. The smaller system size and development footprint will also minimize NHESP habitat mitigation and help to avoid costly upgrades at National Grid's Candle Street substation.
- *Battery Removal*: In response to concerns raised by the Nantucket Fire Department and environmental stakeholders, the 1.265MW Battery Energy Storage System has been completely removed from the project design. As a result of this significant change in project scope, the cost of upgrading National Grid's interconnection equipment has been reduced by 30%.
- *Inflation Reduction Act Benefits*: In August of 2022, President Biden signed into law the *Inflation Reduction Act*, which increased and extended federal incentives for solar energy projects. This new law resulted in a material increase in economic benefit to the WWCo Project, which TotalEnergies has passed through to the Town and WWCo.
- *Contract Structure*: The WWCo Project now reflects a Net-Metering Credit Purchase Agreement structure, rather than the originally contemplated Alternative On Bill Credit (AOBC) Purchase Agreement structure. This change in contract structure mitigates incentive risks associated with the [Massachusetts' SMART program](#), which has increased

the value of the WWCo Project, offsetting increases in Project costs attributable to recent inflation and supply-chain constraints.

- Lease/Contract Term: Transitioning to a Net-Metering purchase structure also enables a longer total contract term, which will extend the Land Lease from 20 to 25 years, thereby generating more lifetime savings for the Town and WWCo.¹
- PILOT Agreement Amendment: The amounts of the “payment in lieu of taxes” paid by TotalEnergies to the Town have been reassessed due to the project capacity reduction and the elimination of the battery component. The new PILOT figures reflect a 16% decrease in Year 1 generation from 5,983,034 kWh to 4,910,758kWh, but an extended lease term from 20 years to 25 years. The annual PILOT payment to the Town is \$26,075, with a 25-year total of \$651,885. This recalculation is fully consistent with the approach and calculation undertaken in the original PILOT.
- Ownership Model/Benefits of Acquisition: Unlike SunPower, a company that would strictly construct and then subsequently sell solar projects to investor groups to own and manage, TotalEnergies, as one of the world’s largest energy companies, will serve as both the project developer and long-term owner of the project, ensuring long-term continuity of the relationship with Town.
- Environmental Mitigation: For more than two years, TotalEnergies worked with the Town, WWCo and the Massachusetts Division of Fisheries and Wildlife (“MassWildlife”) Natural Heritage and Endangered Species Program (“NHESP”), to develop a plan to address the environmental impacts to state-listed species due to the disturbance of existing vegetative cover within the WWCo Project footprint. Collaboration was explored with the Town, WWCo, Land Bank, on-island conservation agencies, as well as the Massachusetts Department of Conservation Services—which is responsible for managing Nantucket’s State Forest properties—to locate suitable land on-island to mitigate the impact of the habitat loss caused by development of the WWCo Project.

Ultimately, no suitable on-island solutions could be identified. Recognizing the extensive effort undertaken to locate suitable acreage for mitigation, as well as taking into consideration the unique characteristics of the WWCo Project, being completely reversible, temporary in nature², and contributing key energy resiliency/sustainability benefits to the Nantucket community, NHESP offered a Fee-In-Lieu option for environmental mitigation, providing a viable path forward for the WWCo Project to

¹ At the 2011 Annual Town meeting, the motion pursuant to Article 97: “Long-term Lease Authorization: Wannacomet” was unanimously adopted by voice vote. The article authorizes the Nantucket Water Commission to enter into a lease of the Wyer’s Valley property and to execute a solar power purchase agreement for a term up to 25 years.

² The WWCo Project contracts require TotalEnergies to remove the installed equipment from the WWCo Project site at the end of the term and to restore the site to its original condition.



secure required environmental permits. The Fee-In-Lieu proposal from NHESP also requires that the 3.19 acres of shade buffer be managed as appropriate, high-quality habitat for the impacted species the life of the Project. Tree removal in this area (a necessary activity to minimize shading of the solar array), is compatible with this habitat management plan, since the impacted species are primarily associated with scrub oak and blueberry species.

Water Quality/Panel Testing

Out of extreme caution to protect the precious water resource over which the Project is situated, TotalEnergies agreed to comprehensive toxicity testing of the proposed PV-modules with a MassDEP accredited testing laboratory specified by Wannacomet Water Company, Alpha Analytical Labs. A PV module of the exact model to be used at 1 Milestone Rd. was destructively tested following standard US EPA sampling methods. The sample material was submitted to Alpha Analytical who tested the sample for all Mass DEP regulated toxins/hazardous materials, plus PFAs and GENX. All tests completed returned results either below Massachusetts regulatory limits or not-detected (“n/d”). Test results were posted to the Town of Nantucket’s [website](#) in August 2021.

Economic Benefits

The WWCo Project is a services agreement for the Town to purchase Net Energy Metering credits at a fixed discount to their face value, creating electric bill savings for the Town for each credit purchased. The WWCo Project will be financed, constructed, and operated by TotalEnergies. The underlying land owned by WWCo will be leased to TotalEnergies for the purpose of the Project, which is sized to offset all of the electrical operating costs of WWCo through savings generated by the purchase of Net Energy Metering credits. All of the power produced will be fed back to Nantucket’s local electric grid to enhance the island’s energy reliability and resiliency.

Although downsized by ~20%, the WWCo project is still expected to provide meaningful economic benefits to the Town and Wannacomet Water Company:

WWCo Solar Project Details	Original Design	Revised Design
Solar System Size	4.7 MW DC with 1.265 Tesla Battery	3.804 MW DC, No Battery
Year 1 kWh Produced	5,983,034	4,910,758
Energy Savings (Year 1)	\$255,475	\$252,904
Tax Revenue (PILOT) (Year 1)	\$37,265	\$24,678
Year 1 Economic Benefit (savings + PILOT revenue)	\$292,740	\$277,582
Contract Term	20 years	25 years
Project Construction Start Date (Estimated)	December 2021	September 2023



Project Completion Date (Estimated)	August 2022	September 2024
Total Lifetime Economic Benefit	\$5,756,389	\$6,788,361

Surfside Wastewater Treatment Facility (“WWTF”) Project; 81 S. Shore Rd.

In addition to the aforementioned modifications to the WWCo Project, the following changes have been made to the WWTF Project design and scope:

- Higher Wattage Panels: TotalEnergies upgraded the proposed solar panels for the WWTF project, from SunPower A-440W panels to SunPower A-450W panels.
- Greater Capacity/Savings: The change in solar panels increased the capacity of the WWTF project by 9% (from 97kW to 106.2kW).
- Inflation Reduction Act Benefits: In August of 2022, US President Biden signed into law the Inflation Reduction Act which increased federal incentives for solar projects. This new law provides non-taxpaying entities, such as the Town of Nantucket, a means to monetize solar tax incentives, previously only available to the private sector, through a program called “Direct Pay”. Under the Direct Pay program, the Town could receive a payment from the Federal Government for up to 30% of the project cost. WWTF project benefits do not currently reflect the economic upside of Direct Pay, as the US Department of Treasury must issue further clarification on the eligibility criteria and logistics for the program.

Economic Benefits

The WWTF Project is a primarily grant-funded project that will be owned by the Town. This project, executed under a separate *Engineering, Procurement, and Construction (“EPC”)* contract with TotalEnergies, will result in the benefits summarized in the table below:

WWTF Solar Project Details	Original Design	Revised Design
System Size	97 kW DC	106.2 kW DC
Year 1 Expected Production	139,430 kWh	141,335.2 kWh
% Electricity Offset (kWh)	5%	5.5%
Solar Module Type	Sunpower A440W	SunPower A450W
System Unit Price	\$2.495/W	\$2.495/W
Project Completion Date (Estimated)	Summer 2023	Summer 2023
MA DEP Grant	\$200,000	\$200,000
Purchase Price (after MA DEP Grant)	\$42,642	\$64,969
Year 1 Savings	\$27,073	\$34,503
Total 25 Year Net Savings	\$734,322	\$925,468
Payback Period	<2 years	<2 Years



Community Benefits

Resiliency and Sustainability Benefits

As locally developed energy resources, the Projects together will generate over 120 million kWh of clean energy over 25 years, equivalent to more than 86,400 metric tons of greenhouse gas emissions. This on-island generation will not only help to offset the Town's significant electricity expenses, but will also reduce summer peak loads on Nantucket, improve local grid reliability and resiliency and further defer the need for a costly and disruptive third undersea electric delivery cable.

Offset of Town Expenses

In addition to the energy savings directly associated with the operation of the Projects, TotalEnergies has offered to provide multiple direct payments to the Town to assist in offsetting Town expenses related to developing the Projects, including:

- **\$25,000** for the enhancement of the Visual Barrier between the WWCo Project and the public right of way, including for new trees and shrubs
- **\$60,000** related to Town expenses including fees of attorneys and consultants incurred in the negotiation and execution of the Projects' contracts
- **\$5,000** related to Town expenses attributable to technical assistance and review of shading analysis of the WWCo project upon system installation

Community and Educational Benefits

The TotalEnergies Education Program is a science, technology, engineering, and math (STEM) education enrichment program that can add significant value to the Town's school district. TotalEnergies developed the program to spark students' curiosity about science and solar technology.

As part of the Projects, TotalEnergies has offered:

1. A \$10,000 grant to offset the cost for Nantucket schools to implement a *Project Lead The Way* (PLTW) curricula.
2. Standalone solar and energy efficiency lesson plans for K-12 students, developed in collaboration with [The Energy Coalition](#) and aligned with federal Common Core and Next Generation Science Standard education standards.
3. Donation of a high-efficiency solar panel for specific, well-designed classroom projects to give students the opportunity to develop a practical solar-powered project of their own design.

These classroom tools, combined with the ability of Nantucket schools to work with the Water Company and Sewer Department to tour the project sites and learn first-hand how solar energy supports critical water/sewer operations, creates meaningful community benefits, and provides inspiration for the next generation of clean energy and climate advocates.



Next Steps

- Wannacomet Water Company Project: Immediately following execution of the restated and amended contracts, TotalEnergies will advance the WWCo environmental permitting process by initiating the Massachusetts Environmental Policy Act (“MEPA”) regulatory review process. This process, which includes a public comment period, is expected to conclude in May of 2023 with the NHESP approval of the project’s Conservation Management Permit. In parallel with this environmental permitting process, TotalEnergies will initiate the detailed design and permitting of the Project and proceed with ordering equipment in anticipation of commencing construction in September of 2023. The WWCo project is expected to achieve commercial operation in September of 2024.
- Surfside WWTF Project: Immediately following execution of the EPC agreement, TotalEnergies will proceed with the detailed design and permitting of the WWTF Project and proceed with ordering equipment. The WWTF project is expected to begin construction in March of 2023 and achieve commercial operation in July of 2023, per the timeline requirements set forth by the MassDEP grant.

Figure 1
Current Project Design: Wannacomet Water Company's Wyers Valley; 1 Milestone Rd.
3.804MW DC Solar-PV (Two-Arrays)

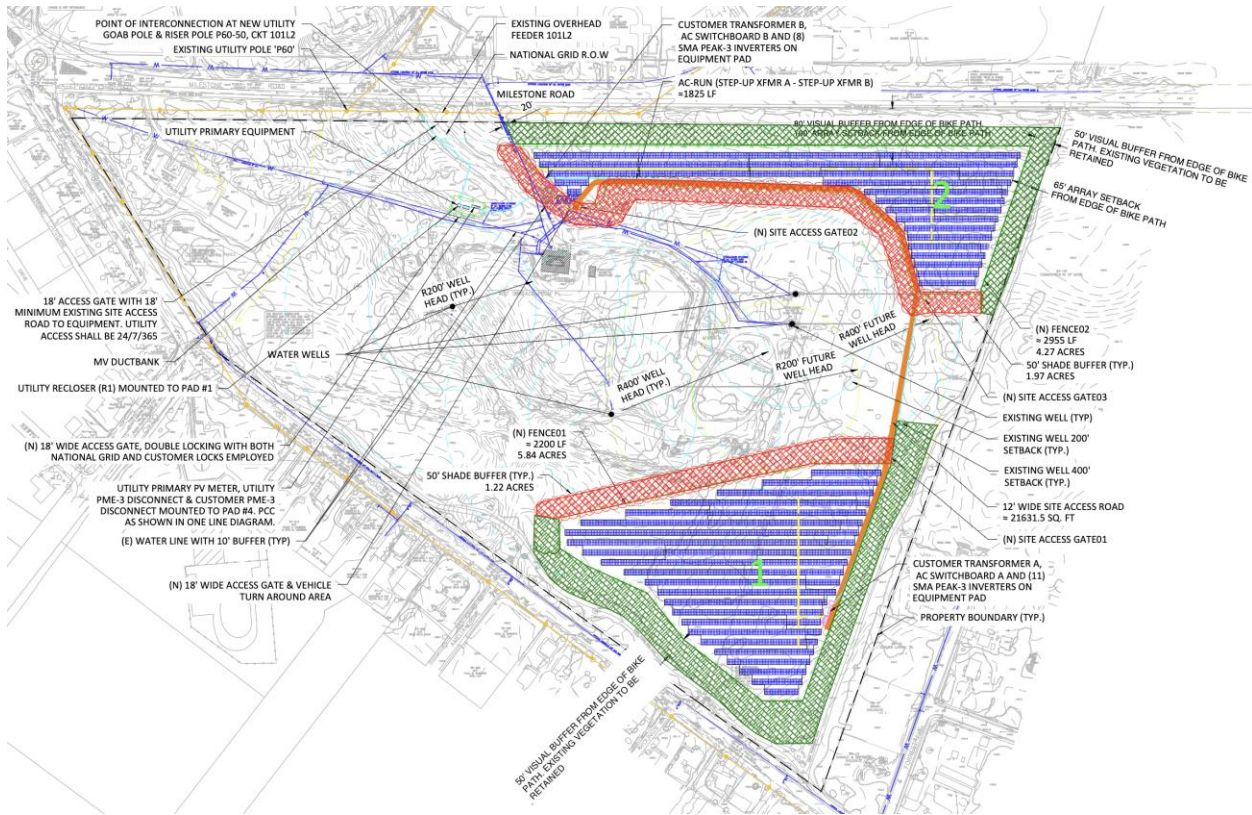


Figure 2
Close-up of northern array revisions (adjacent to Milestone Rd)

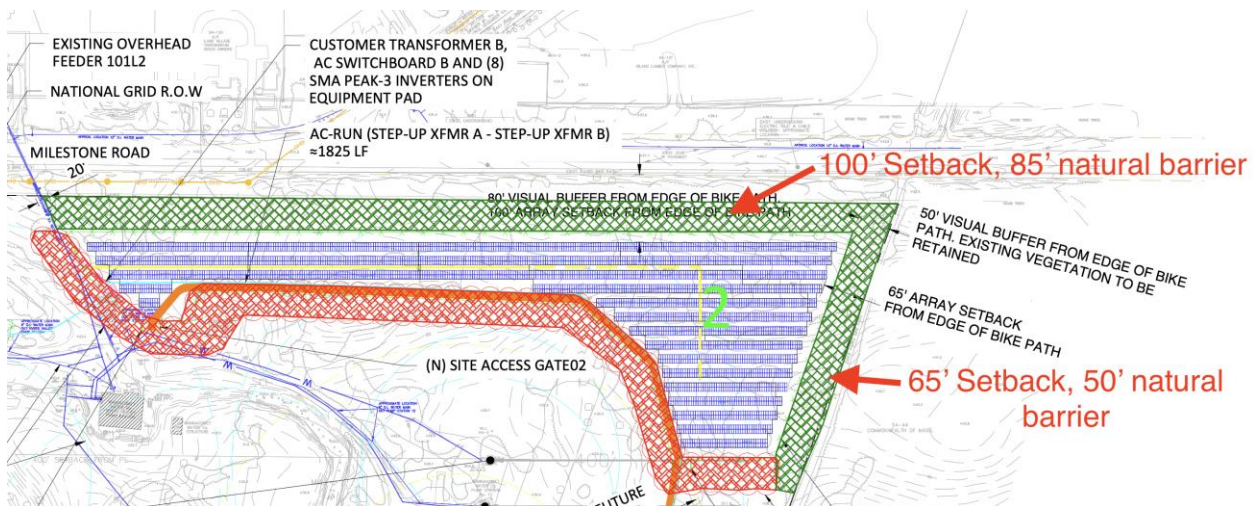


Figure 3
Current Project Design: Surfside WWTF; 81 S. Shore Rd.
106kW Solar-PV System

