



STATE OF NEW JERSEY
Board of Public Utilities
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www.nj.gov/bpu/

CLEAN ENERGY

IN THE MATTER OF THE PETITION OF NEW)
JERSEY-AMERICAN WATER COMPANY FOR) ORDER
"PREFERRED" TREC FACTOR FOR FLOATING)
PHOTOVOLTAIC SOLAR PURSUANT TO THE)
BOARD'S TRANSITION INCENTIVE ORDER) Docket No. QO20020111

Parties of Record:

Stefanie A. Brand, Esq., Director, New Jersey Division of Rate Counsel
Donald C. Shields, Vice President, New Jersey American Water Company, Inc.
Howard Thompson, Esq., Russo Tumulty Nester Thompson & Kelly, LLP on behalf of Solar Renewable Energy

BY THE BOARD:

In this order, the New Jersey Board of Public Utilities ("Board" or "BPU") takes initial steps to support the burgeoning floating solar industry in New Jersey. The Board assigns such projects a preliminary incentive value, while allowing the process of determining case-by-case incentives to continue, consistent with environmental protections afforded by the siting process and the Board's goals of encouraging the deployment of new forms of solar energy.

BACKGROUND

Clean Energy Act

On May 23, 2018, the Clean Energy Act ("CEA") was signed into law and became effective immediately. Among many other mandates, the CEA directed the Board to adopt rules and regulations to close the SREC Registration Program ("SREC Program" or "SRP") to new applications once the Board determines that 5.1 percent of the kilowatt-hours sold in the State by each TPS/BGS provider has been generated by solar electric power generators connected to the distribution system ("5.1 % Milestone"). The CEA also directed the Board to complete a study that evaluates how to modify or replace the SREC program to encourage the continued efficient and orderly development of solar renewable energy generating sources throughout the State. By Order dated April 6, 2020 the Board determined that the 5.1% Milestone would be attained by April 30, 2020, and the SRP closed on that date.¹

¹ In re the Closure of the SREC Registration Program Pursuant to P.L. 2018, c. 17 and In re a New Jersey Solar Transition Pursuant to P.L. 2018, c. 17 – Calculation of 5.1% Milestone for SREC Program Closure, BPU Docket Nos. QO18070698 & QO19010068, Order dated April 6, 2020.

Replacing the SRP

The Board decided to implement the replacement of the SREC Program in two phases. Phase 1 was the development of the Transition Incentive Program, open to projects that filed a complete SRP registration after October 29, 2018 but failed to reach PTO by the date the 5.1% Milestone has been attained; and to new projects until the Board establishes a registration program for the Successor Program. Phase 2 will be the Successor Program, currently being developed.

The Board approved the Transition Incentive Program on December 6, 2019, following a yearlong iterative process.² As described in more detail in the Transition Incentive Order, the Board approved a transition incentive to be delivered via a Transition Renewable Energy Certificate (“TREC”). A TREC has a base incentive value of \$152/MW-hour. That base value is tailored to various solar market segments by the application of factors “tied to the estimated costs of building the different types and to their varying revenue expectations[.]” Transition Incentive Order at 30. In other words, the factors allow the TREC to provide differentiated financial incentives for different installation types with the goal of ensuring that ratepayers are providing the minimum necessary financial incentive to develop diverse types of projects.

The Board identified eight market segments and assigned each a factor, ranging from 0.6 to 1.0, as set forth below:

Project Type	Factor
Subsection (t): landfill, brownfield, areas of historic fill.	1.0
Grid supply (subsection (r)) rooftop	1.0
Net-metered non-residential rooftop and canopy	1.0
Community solar	0.85
Grid supply (subsection (r)) ground mount	0.6
Net-metered residential ground mount	0.6
Net-metered residential rooftop and canopy	0.6
Net-metered non-residential ground mount	0.6

In an Order issued on January 8, 2020 to clarify certain aspects of the Transition Incentive Program, the Board stated that “new or innovative solar technologies can file a petition with the Board requesting that these type projects be assigned a TREC factorization level.”³

PETITION

By letter dated February 4, 2020, New Jersey American Water (“NJAW” or “Petitioner”) filed a petition seeking a “preferred siting,” or 1.0 Factor, for floating solar arrays generally and for a specific project, a floating 8.5 megawatt (“MW”) photovoltaic array proposed for NJAW’s Canoe Brook water treatment facility (“Canoe Brook Project”). The Canoe Brook Project will be one of the largest in North America, according to NJAW, and will be located on Reservoir 1 at the Canoe

² In re a New Jersey Solar Transition Pursuant to P.L. 2018 c. 17, BPU Docket No. QO19010068, Order dated December 6, 2019 (“Transition Incentive Order”).

³ In re a New Jersey Solar Transition Pursuant to P.L. 2018, c. 17, BPU Docket No. QO19010068, Order dated January 8, 2020, at p. 3.

Brook facility in Millburn Township, New Jersey. Petitioner asserts that there has been significant investment in the engineering design, development, and safe harboring of the current Federal Investment Tax credit.⁴ Petition at p. 3-4.

According to Petitioner, floating solar has many advantages over ground-mounted arrays. More specifically, Petitioner referenced the New Jersey Department of Environmental Protection's ("NJDEP") 2017 update of its Solar Siting Analysis ("SSA"). The SSA classifies artificial lakes like reservoirs as "Indeterminate" because of the very limited data available on them, but notes that as these technologies mature they may be appropriate for "Preferred" classification. Petitioner asserts that raw water reservoirs are analogous to storm water basins, which are already classed as "Preferred" in the 2017 SSA. Petition at pars. 1-2. According to Petitioner, floating solar arrays also provide an incremental design advantage by allowing a more efficient array that more than compensates for any additional construction costs. Petition at par. 3. In addition, Petitioner claims that locating solar arrays on water preserves open space and farmland, while simultaneously improving the health of the water body by providing shade that reduces evaporation and algae growth. Petition at pars. 4-5. In support of its position, NJAW points to a 2018 paper of the National Renewable Energy Laboratory.⁵

By letter dated February 10, 2020, Solar Renewable Energy, LLC, ("SRE"), RETTEW, and New Jersey Resources Clean Energy Ventures ("NJRCEV") (collectively, "Project Supporters") filed a letter in support of the petition.⁶ These entities identified themselves as, respectively, the developer, the energy performance contractor, and the financier/owner-operator and state that SRE formed a separate entity, Canoe Brook Solar Partners, LLC for the Canoe Brook Project. The arguments of the Project Supporters largely mirror those made by Petitioner; some additional assertions are made. The Project Supporters note that the NJDEP has approved the Borough of Sayreville's 4.4 MW floating solar array ("Sayreville Project"), which was completed by SRE and RETTEW, energized last year, and is the largest operational floating solar project in the United States. The Project Supporters claim that this project has a footprint approximately 25% smaller than that of a comparable ground-mount array. Moreover, the Project Supporters state that they are aware of a 29 MW floating solar project "in the later stages of development," a request for proposals for a 12 MW project on the Wanaque Reservoir, and more than 50 MW of floating solar in "the early stages" of development. The Project Supporters assert that these figures show that floating solar could make a significant contribution to New Jersey's renewable energy goals. Finally, the Project Supporters believe that the 4.4 MW Sayreville project provides valuable data on the costs of floating solar in New Jersey. According to the Project Supporters, the Sayreville Project cost almost 50% more to build than a traditional ground-mount system, with a total project cost of approximately \$2.05/watt. RETTEW's experience over the past several years is that floating solar typically costs between \$2.00 and \$2.50 per watt. In addition, the Project Supporters state that insurance, financing, and other soft costs are also higher because of the increased risk and longer timeline of this new technology – typically eighteen to twenty-four months, they say.

On March 19, 2020, New Jersey American, Rate Counsel, and Board staff ("Staff") executed a Non-Disclosure Agreement.

⁴ Available for solar projects that started by December 31, 2019 and incurred 5% of costs or made a significant start on the physical labor prior to that date.

⁵ Floating Photovoltaic Systems: Assessing the Technical Potential of Photovoltaic Systems on Man-Made Water Bodies in the Continental United States (December 11, 2018), referenced at <https://www.nrel.gov/news/press/2018/nrel-details-great-potential-for-floating-pv-systems.html#:~:text=Dec.,the%20nation's%20annual%20electricity%20production>.

⁶ Although styled as a "joint petition" in the text, the attorney for these entities subsequently identified this filing as a "letter in support" of the NJAW petition in an email to Board staff and it is so considered here.

On April 1, 2020, the Division of Rate Counsel (“Rate Counsel”) served discovery upon Petitioner and upon the Project Supporters.

On April 8, 2020, counsel for SRE provided responses to Rate Counsel’s discovery for SRE, NJRCEV, and RETTEW.

On April 9, 2020, Petitioner provided responses to Rate Counsel’s discovery upon it.

On June 3, 2020, Staff served discovery upon SRE, NJRCEV, and RETTEW.

On June 25, 2020, counsel for SRE provided responses to Staff’s discovery.

STAFF RECOMMENDATIONS

Petitioner and the Supporting Parties have not demonstrated that there is a specific one-size-fits-all incentive that should apply to all floating solar projects at the 1.0 factor level, in part, because there is limited experience with this new technology. Staff, however, recognizes the potential for floating solar to play an important role in the New Jersey’s solar future. With this dichotomy in mind, Staff recommends that the Board assign a preliminary TREC factor of 0.6 to all floating solar projects that request the same, while allowing projects to petition the Board for a higher, project-specific factor, which will be assigned after a careful review of the expected project-specific costs and revenues.

As noted in the Transition Order, six general principles have been particularly relevant to the establishment of TREC incentive levels for specific technology classes:

1. Provide maximum benefit to ratepayers at the lowest cost;
2. Support the continued growth of the solar industry;
3. Ensure that prior investments retain value;
4. Meet the Governor’s commitment to 50% Class I Renewable Energy Certificates (“RECs”) by 2030 and 100% clean energy by 2050;
5. Provide insight and information to stakeholders through a transparent process for developing the Solar Transition and Successor Program; and
6. Comply fully with the statute, including the implications of the cost cap.

Transition Incentive Order at 28-29. Weighing these various principles is difficult for a new technology where the costs are highly variable or simply not well-established.

Staff notes that the factors approved by the Board for the Transition Incentive were determined based on in-depth cost build-up for each technology class, as more fully described in the Transition Incentive Order. Representative project costs constituted a fundamental piece of the equation that produced those factors and the Board was able to draw from a sample of thousands of solar projects to determine the appropriate values.⁷ Unlike the data-driven process for establishing TREC incentive levels in the Transition Incentive Program, however, there is simply not a sufficiently large data set to derive final, class-wide incentive levels for floating solar projects

⁷ See, e.g., “Cost of Entry” slides from Solar Transition Workshop 2 (June 14, 2019); Transition Incentive Supporting Analysis & Recommendations (attached to Staff Straw released August 22, 2019, reissued with updates on October 3, 2019 and November 14, 2019); “Modeling Workshop” slides from Technical Work Session (September 6, 2019).

at this time, and thus, Staff expects to need extensive discovery, potentially followed by trial-type hearings, to determine a factor greater than 0.6 for each individual project.

Treatment of Petition for 1.0 Factor for All Floating Solar

Staff notes that there is relatively little experience with this novel technology, and that much of the existing data is from overseas, or lacks robust cost and revenue data. New Jersey itself has only two operational floating solar facilities; hence the Project Supporters' heavy reliance upon the data from the more recent project. Indeed, this is the only project identified in their discussion of costs, the other evidence being limited to a single statement that in RETTEW's experience floating solar typically costs between \$2.00 and \$2.50 per watt.

In particular, Staff notes that the record suggests that the size of the proposed floating solar projects in the New Jersey pipeline vary dramatically, from 2 MW to more than 50 MW. In Staff's experience, and backed up by data collected during the Transition Incentive Process, solar projects benefit immensely from economies of scale, and larger projects often need a significantly lower incentive level than smaller projects. Unlike projects located on properly closed sanitary landfill facilities, brownfields, and areas of historic fill, there is no statutory basis for giving preference to floating solar, such as the Legislature created at N.J.S.A. 48:3-87(t).

Equally important to the development of an appropriate factor is the need to understand the revenue streams available to projects within the market segments, particularly the ability of projects to access net metering revenues, or otherwise earn more than would be expected from the wholesale electricity markets. The revenues that floating solar projects may earn are likewise not well developed in the record currently before the Board, and may vary based on project size and configuration.

Additionally, the assertion that floating solar projects, as a class, are inherently environmentally beneficial also lacks sufficient support in the record. As recognized by DEP's assignment of floating solar to the "Indeterminate" permit categorization, by its nature, each floating solar installation is unique; each is likely to raise different compliance questions and require different NJDEP permits and have different environmental impacts. Placing such large manmade structures on bodies of water, even artificial bodies of water, may raise issues regarding possible negative impacts on wetlands, erosion, water temperature, and endangered species. In addition, the possibility exists of conflicts in usage, flood hazards, navigable waters, and perhaps other unintended consequences.

When evaluated in light of these principles, the Petition does not provide sufficient evidence for the relief sought; neither the establishment of a single 1.0 TREC factor applicable to all floating solar projects nor the assignment of a 1.0 factor to the Canoe Brook Project. While this does not foreclose the possibility that, with additional discovery or such information as may emerge at any hearings set for a given project, a project-specific TREC factor could be developed, the record is not currently sufficient to make such a determination. Therefore, Staff recommends that the Board deny the petition with respect to the request that the category of floating solar receive a 1.0 Factor, and instead, allow parties, including Canoe Brook, to continue submitting detailed cost and revenue data in support of their request to be assigned a project-specific factor through additional discovery and settlement proceedings.

Interim Relief for the Canoe Brook Project and all Forthcoming Floating Solar Projects:

In recognition of the novel nature of the technology, however, Staff recommends that the Board assign the Canoe Brook Project a preliminary 0.6 factor, and make comparable treatment available to other Petitioners upon written request to Staff. This factor is the lowest of the factors assigned during the Transition Incentive Program, and represents the amount received by ground mount facilities that do not qualify for preferred treatment. While Staff sees the need to continue supplementing the record through the discovery process before assigning any higher factor, there is a reasonable amount of support already in the record for the proposition that floating solar will be at least as expensive as a comparable ground mount project. Thus, the preliminary 0.6 factor represents a reasonable balancing of the principles discussed above, including the need to support the continued growth of the solar industry while protecting ratepayers.

Staff believes that assigning this preliminary factor may promote the development of this new technology by reducing, at least somewhat, the financial risk associated with developing floating solar projects. Going forward, Staff recommends that parties can request assignment of an interim 0.6 factor, even while a litigation and settlement process may continue on any individual project.

FINDINGS AND DISCUSSION

The Board agrees that floating solar represents a potentially positive development in renewable energy technology and that it is consistent with the Board's longstanding support of renewable energy innovation to provide floating solar projects additional financial certainty by making such projects eligible for TRECs. The Board **FINDS** that floating solar projects are a unique class of projects and merit distinct treatment in the TREC program. However, the Board notes that the factors established in the Transition Incentive program resulted from a significant stakeholder process, a large data set, and substantial stakeholder input from relatively mature technologies, whereas floating solar projects vary significantly in size and other factors, as discussed by Staff. The record regarding floating solar presently lacks the quality, quantity and type of data utilized in developing the existing Transition Incentive program factors. The Board **FINDS** that Petitioner and the Project Supporters failed to demonstrate that floating solar projects, as a class, warrant a 1.0 Factor at this time. Therefore, the Board **DENIES** that portion of the petition.

The Board is committed to maintaining our State's position as a marketplace leader, while at the same time taking steps to control ratepayer costs, and recognizes that our decision herein has the potential to significantly impact the development of the solar industry in the State. The Board is satisfied that there is reasonable amount of support already in the record for the proposition that floating solar will be at least as expensive as a comparable ground mount project, and a similar 0.6 factor may be appropriate for floating solar projects. The Board agrees with Staff the Canoe Brook project should receive a preliminary assignment of a 0.6 TREC factor, and that floating solar projects should have the opportunity to request similar interim relief.

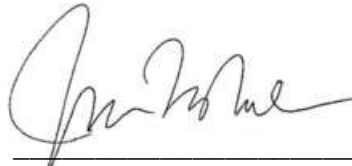
To ensure that other floating solar projects receive comparable treatment to Canoe Brook, the Board **HEREBY ESTABLISHES** a policy that floating solar projects may request from Staff assignment of a preliminary 0.6 TREC factor and may petition the Board to request a factor greater than 0.6 based upon the specific facts and circumstances attributable to an individual project.

With respect to the Canoe Brook Project, the Board **FINDS** that Petitioner and the Project Supporters have not adequately demonstrated to date that the costs or the benefits merit a specific factor, but will allow the parties to continue discovery and, potentially, will assign the matter to a presiding commissioner at a future date. In the meantime, the Board encourages Staff, the Movant, Rate Counsel, and all other parties, to engage in settlement discussions with the aim of reaching a satisfactory incentive level for the Canoe Brook project. The Board **DIRECTS** that the Canoe Brook project receive a preliminary assignment of a 0.6 TREC factor.

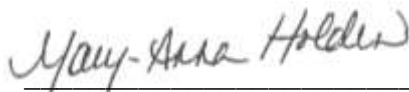
This Order shall be effective on July 25, 2020.

DATED: July 15, 2020

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BY:



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ATTEST:

AIDA CAMACHO-WELCH
SECRETARY

IN THE MATTER OF THE PETITION OF NEW JERSEY-AMERICAN WATER COMPANY FOR
“PREFERRED” TREC FACTOR FOR FLOATING PHOTOVOLTAIC SOLAR PURSUANT TO
THE BOARD’S TRANSITION INCENTIVE ORDER

DOCKET NO. QO20020111

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