October 6, 2020

Mr. Andrew Johnston
Executive Secretary
Maryland Public Service Commission
6 St. Paul Street, 16th floor
Baltimore, Maryland 21202

RE: RM 56 to COMAR 20.62 – Community Solar Energy Generation Systems
Request to include land-use considerations in the regulatory framework

The Advocates for Herring Bay[1] have a long-standing interest in supporting the development of solar energy in an environmentally sound manner. In our view, Maryland should decarbonize its electricity grid in a manner that preserves the natural carbon sequestration and ecological value of our forests, wetlands, and other vegetated lands. Thus, we support maximizing the development of solar on surfaces that sequester little or no carbon, such as impervious or impaired surfaces. That approach is consistent with Anne Arundel County's zoning law, which favors adding solar capacity on landfills and reclaimed lands, as well as commercial rooftops and canopies.

With this proceeding, the Public Service Commission (PSC) has an opportunity to promote diverse siting of Maryland's in-state solar generation by making land-use considerations an integral part of the regulatory framework for Community Solar Electric Generation Systems (CSEGS). To assist in that effort, we respectfully offer the following information and recommendations for your consideration.

Background on AHB's interest in the CSEGS program

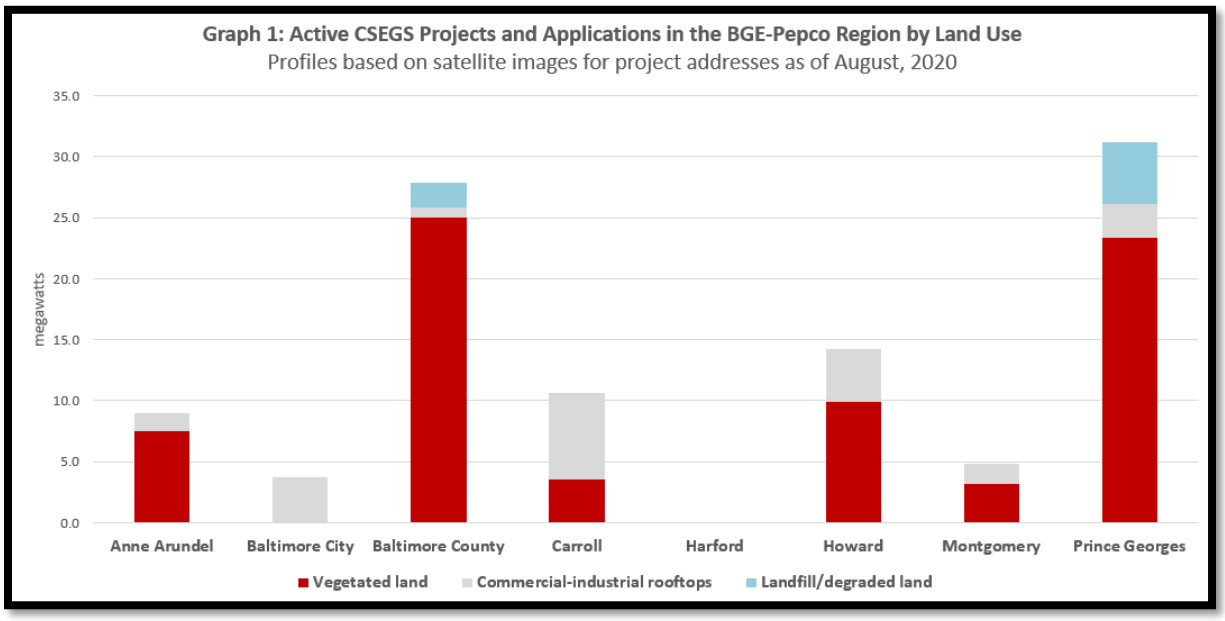
Our work on the CSEGS pilot program began in 2017, when BGE accepted applications for five projects located on farmland in Anne Arundel County, including one in Herring Bay's watershed. When we learned that the county's environmental performance standards for solar facilities were outdated and inconsistent with best practices, we joined with 13 other local groups to ask for a pause in the permitting process to allow time for the County Council to enact the necessary reforms.

During the county's 10-month moratorium, AHB tried to facilitate a constructive resolution of the issues by preparing background materials for county staff on best practices used elsewhere in Maryland. Based on that research, we advocated for zoning restrictions on siting solar facilities on forested lands and for vegetation and decommissioning standards that would maximize the health and productivity of the soils and vegetation under and around the arrays. The county's final bill grandfathered the five initial CSEGS applications but established new protections for forests and restrictions on siting solar facilities in areas deemed important for its agricultural economy.[2]

Shortcomings in the current program

The Commission's current CSEGS capacity allocations are out of sync with Anne Arundel's potential to install solar on previously developed surfaces. The PSC's existing rules allocate only 30 percent of the CSEGS capacity to the "small/brownfield" category that includes rooftops and other impervious surfaces. As shown in Graph1on the next page, the result of that allocation is that over 70 percent of the roughly 100 MW of CSEGS capacity installed or pending in the BGE-Pepco region is sited on

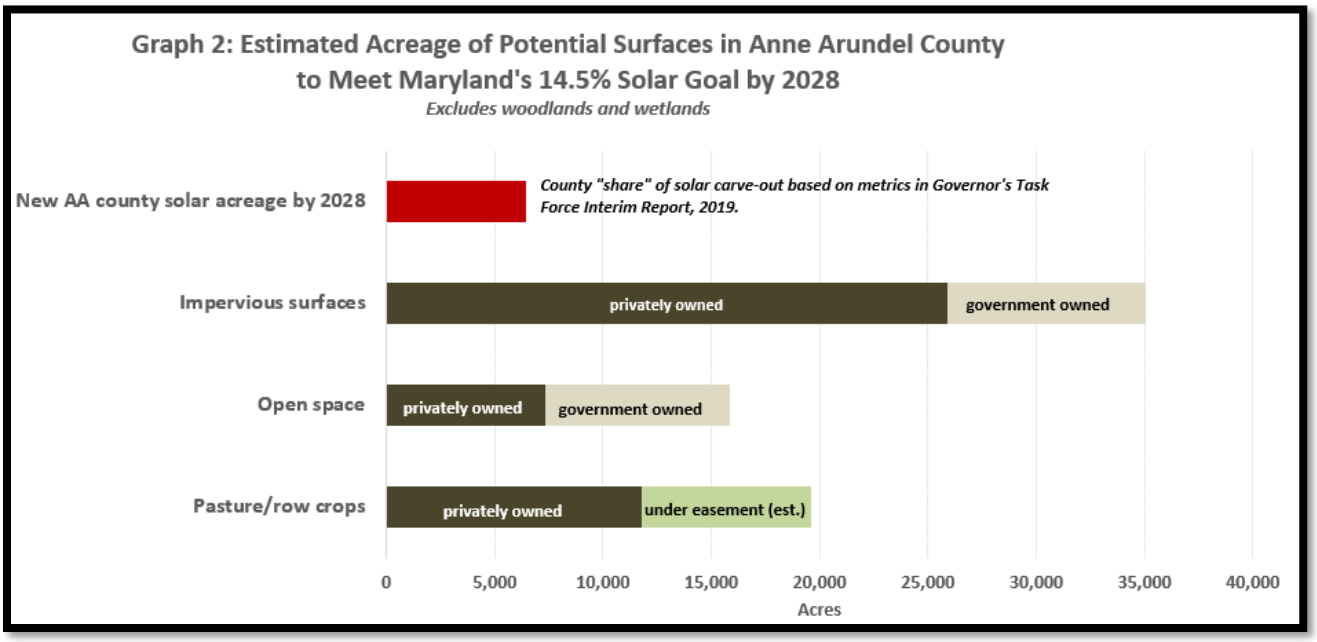
[1] The Advocates for Herring Bay, Inc. is a community-based environmental group in Anne Arundel County.
[2] See AHB: Planning for Anne Arundel's Solar Future, February, 2018; Best Practices for Managing Solar Development, April 2018; and Testimony on Final Solar Ordinance, October 2018.



farms or forests. A 30/70 split isn't optimal for a county like Anne Arundel, which has almost twice as much impervious surface as it has acreage being farmed (see Graph 2).[3]

Having a CSEGS program that overlooks the effects of solar siting on natural resources creates conflicts in communities and is contrary to the public interest. It also impedes progress in decarbonizing the grid by missing out on the opportunity to develop solar on the impervious and degraded surfaces in highly developed jurisdictions in the Baltimore-Washington region, where the demand for electricity is high.

Maryland can do better. New Jersey's entire allocation for community solar was filled by projects on alternative surfaces after the state began ranking eligibility based on land-use and social justice factors



[3] See Anne Arundel County, NPDES MS 4 Annual Report, 2019, page 24. These figures exclude impervious surfaces used for transportation and airports.

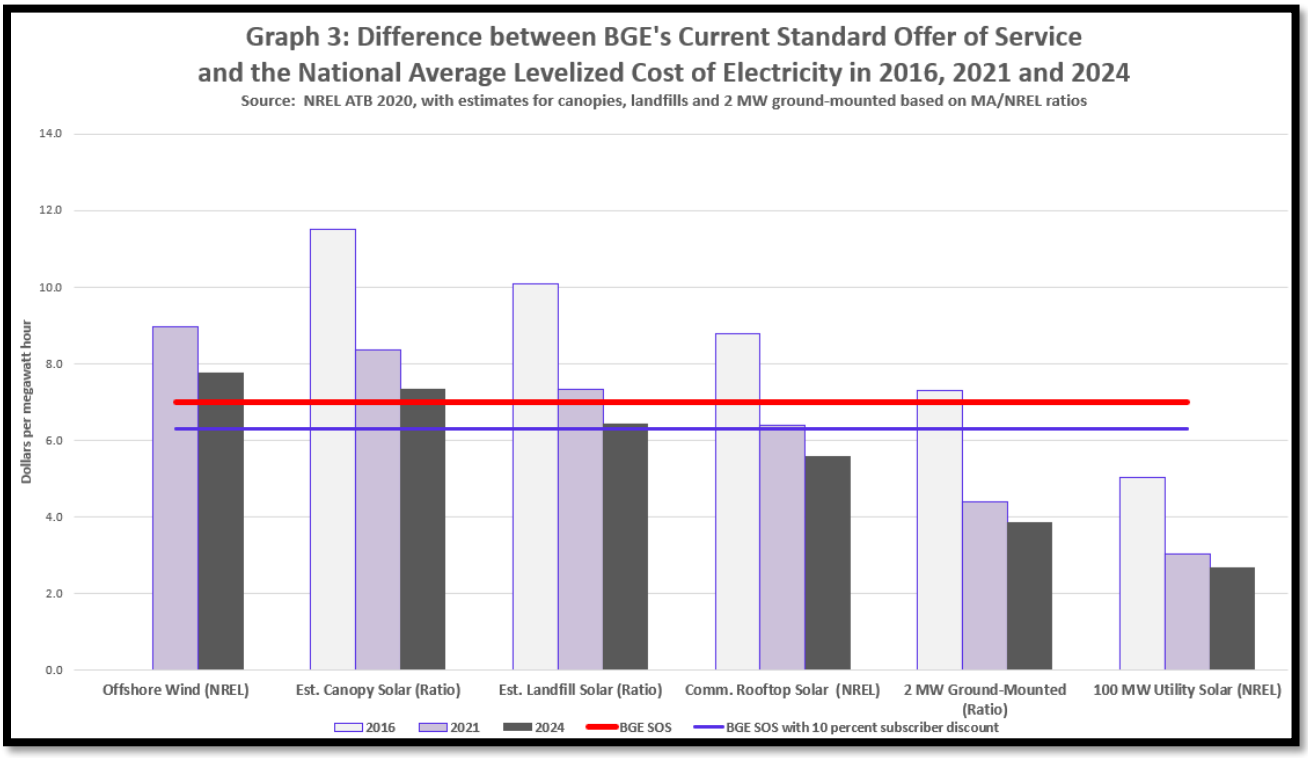
in 2019. The state's new pricing benchmarks also differentiate between preferred and nonpreferred sites. Similarly, Massachusetts has adopted solar pricing policies that "add" a premium for projects on preferred sites and "subtract" specified amounts from the price received for solar electricity generated on greenfield sites. New York and Rhode Island also have price incentives for using alternative sites, especially for systems on canopies and carports (see Attachments 1 through 4).

Recommended changes to Maryland's CSEGS program

Given their size—2 megawatts or less—CSEGS projects are an ideal match for Anne Arundel's abundant supply of rooftops and other previously developed surfaces. The economics of that matchup are improving too. As shown in Graph 3, the cost of commercial rooftop solar generation fell by about 25 percent since the CSEGS program began in 2016, and the cost of greenfield solar fell by over 35 percent (see Graph 3). The National Renewable Energy Laboratory's projections also show that the levelized cost of electricity from commercial rooftop solar is expected to remain below the cost of other carbon-free sources supported by Maryland's laws, such as offshore wind.

While installing solar on rooftops and other surfaces is increasingly competitive at CSEGS benchmark prices, it remains more profitable to build solar on farms and forested lands, a trend that probably will continue in the future.[4] Thus, a CSEGS program that is agnostic to the type of solar project will result in mostly ground-mounted "greenfield" solar development.

Local governments like Anne Arundel cannot influence those market dynamics; they need supportive policies from the state. Maryland could expand the diversity of its CSEGS capacity in three ways:



[4] In the BGE service area, that price benchmark is the company's "standard offer of service" for generation. Such pricing metrics exclude externalities, such as the ecosystem and carbon sequestration value of natural resources, as well as indirect effects on other sectors of the economy, such as farming. In addition, because there are no mechanisms in the current CSEGS regulations that require solar operators to pass cost savings through to subscribers, cheaper development costs may not result in benefits to subscribers.

- provide financial incentives that target projects with preferred siting,
- have volume set-aside in solar programs for projects on preferred sites, and
- reduce the regulatory burden for projects with preferred siting.

We favor using financial incentives, but that option currently isn't available to the PSC because state law does not allow the Commission to regulate or oversee CSEGS pricing. Nonetheless, we believe that Maryland could have a more diversified portfolio of CSEGS projects over the 2021-2024 period if the PSC adopts certain procedural reforms. Specifically, we recommend that the CSEGS regulations be revised in three ways:

1. Require applicants to provide a land-use profile of the proposed site when they apply to the PSC. This proposal aims to reduce land-use conflicts by making siting information available at the beginning of the decision-making process. Having transparent and consistent data will enable developers, government officials, and the public to identify concerns quickly, saving time and effort for all involved. This reporting requirement should not be burdensome because the necessary data are readily available from Maryland's existing GIS sources (see Attachment 5).

The scope of the land-use profile could vary depending on the site. Since ground-mounted projects often affect undeveloped land, we urge the Commission to require those applicants to clearly identify environmentally important features of the existing site. Those features—many of which are described in a recent scientific article[5] and identified on the Maryland's Merlin, Greenprint, and I-Map websites—include but are not limited to:

- Forests and woodlands, especially those in Forest Interior Dwelling Species Habitats, Targeted Ecological Areas; and the Critical Area;
- Wetlands and streams, particularly those in Targeted Ecological Areas, the Critical Area; floodplains, and watersheds with high quality streams, including Tier II streams; and
- Prime farmland, as identified by the U.S. Department of Agriculture (USDA map).

2. Encourage the use of alternative surfaces through the capacity allocation process. Based on our experience in Anne Arundel County and a review of the results in other states, we believe that the PSC could incorporate land-use factors into the capacity allocation process in two ways:

- ***End the first-come-first-served application process for the "Low-and-Moderate Income" and "open" categories and replace it with a land-use ranking process similar to that used in New Jersey.***[6] In the absence of a statutory definition of preferred surfaces, we believe the Commission could use the guidance in recent executive and legislative measures to develop eligibility ranking criteria based on project siting.[7] Examples of surfaces that may be considered "preferred" surfaces for solar projects under the LMI and "open" categories include:

[5] See Elliott Campbell, Rachel Marks, and Christine Conn, *Spatial modeling of the biophysical and economic values of ecosystem services in Maryland, USA*, March 2020 https://doi.org/10.1016/j.ecoser.2020.101093

[6] For more information on New Jersey's 2019 ranking criteria, see NJ 2019 ranking criteria. For information on New Jersey's current pricing differentials for preferred sites, see NJ Frequently Asked Questions numbers 31-33.

[7] Key references include Governor's Task Force on Renewable Energy Siting and Development, Interim Report, December 2019, and SB 744, which passed unanimously in the Maryland Senate in 2019. See also Chesapeake Bay Foundation, *Practices for Realizing the Necessity and Promise of Solar Power*, April 2020; and The Nature Conservancy, *Powering the Future: Stakeholder Feedback on Renewable Energy Development*, November 2019.

- Surfaces identified in the existing small/brownfield category, such as commercial rooftops, canopies, reclaimed mines, landfills, and brownfields;
- Publicly owned property that could be used for ground-mounted systems, including property owned by utilities and large institutions as well as governments;
- Water reservoirs or wastewater treatment plants (for "floating" systems);
- Marginal farmlands; and
- Other properties identified by state or local governments as optimal for solar facilities.

New Jersey also uses its ranking system to signal which sites are not preferred for solar facilities, such as forests, wetlands, and farmland. Maryland could consider applying deductions —a loss of points—for projects that would impact lands considered a priority for environmental protection or preservation, an approach that would be akin to applying the "subtractors" used by Massachusetts.[8]

- ***Incrementally increase the share of capacity allocated to the "small/brownfield" category from the current 30 percent to a higher target by 2024***. We urge the Commission to continually monitor and recalibrate the program's capacity allocations as the economic viability of rooftop solar and other alternative technologies improves. Now that ground-mounted facilities need less government support, the Commission should stand ready to channel the benefits of the CSEGS program to projects on preferred surfaces.

3. Allow utilities to expedite their review and approval of interconnection or other agreements for CSEGS projects that have a low probability of triggering land-use conflicts. Fast-tracking projects on preferred surfaces would enable local governments to begin processing those applications sooner, furthering the state's ability to reach its in-state solar generation goals by 2028. In our view, the types of projects least likely to pose land-use conflicts are those we suggest be ranked as "preferred" sites under our second policy recommendation.

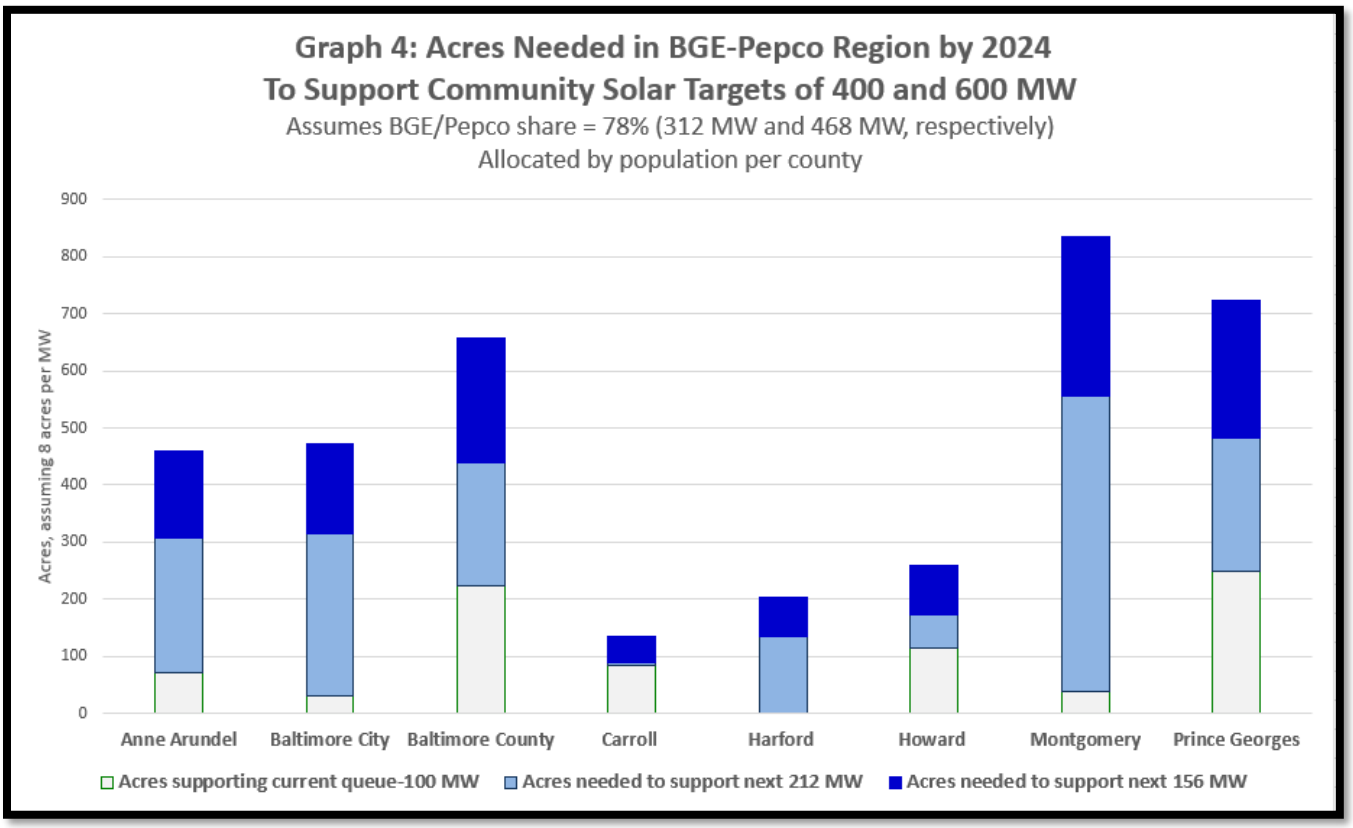
Conclusion

The Advocates for Herring Bay support expanding solar capacity to meet Maryland's clean energy goals, but we believe these ambitious goals can only be met by using more diverse sites. Relying too much on ground-mounted solar on agricultural or forested land is not sustainable either environmentally or politically, as seen in our own Anne Arundel County.

To get results, Maryland needs policies that will steer a large percentage of new CSEGS projects to the state's abundant supply of previously developed surfaces, while minimizing the use of vegetated lands. Without such policies, conflicts over land use are likely to occur. As shown in Graph 4 on the next page, meeting the Commission's 400 MW goal will depend on the willingness of local governments and communities in the BGE/Pepco region to dedicate another 1,700 acres for CSEGS by 2024; at 600 MW, the siting challenge would rise to over 2,900 acres.[9] Revising the Commission's rules to ensure compatibility with local land-use conditions would serve the public interest and promote the diversity and growth of Maryland's in-state solar generation.

[8] For more information on the Massachusetts program see MA Pricing Regulations and MA 2020 Guidelines.

[9] This estimate is based on the assumption that the BGE-Pepco region accounts for 78 percent of the CSEGS capacity and that the existing queue totals about 100 MW. Graph 4 allocates the incremental capacity by county based on population and assumes an average of 8 acres per MW.



Thank you for considering our views. If you have any questions regarding our recommendations, please contact us at herringbay@gmail.com.

Attachment 1: New Jersey Ranking Criteria for Community Solar Projects, 2019
Attachment 2: New Jersey Pricing Framework for Transitional Renewable Energy Certificates
Attachment 3: Massachusetts Location-Based Rate Adders and Subtractors
Attachment 4: New York and Rhode Island Price Adders for Canopy Systems
Attachment 5: Examples of Possible Data in a Land-Use Profile

Attachment 1: New Jersey's 2019 Ranking Criteria for Community Solar Projects

Evaluation Criteria	Max. Points
Low- and Moderate-Income and Environmental Justice Inclusion Higher preference: LMI project	30
Siting Higher preference: landfills, brownfields, areas of historic fill, rooftops, parking lots, parking decks Medium preference: canopies over impervious surfaces (e.g. walkway), areas designated in need of redevelopment No Points: preserved lands, wetlands, forested areas, farmland Bonus points for: landscaping, land enhancement, pollination support, stormwater management, soil conservation	20 Max. possible bonus points: 5
Product Offering Higher preference: guaranteed savings >10%, flexible terms* Medium preference: guaranteed savings >5% No Points: no guaranteed savings, no flexible terms* *Flexible terms may include: no cancellation fee, short-term contract	15
Community and Environmental Justice Engagement Higher preference: partnership with municipality, partnership with local community organization(s), partnership with affordable housing provider Medium preference: letter of support from municipality, project owner is a government and/or public and/or quasi-public entity, project owner is an affordable housing developer	10
Subscribers Higher preference: more than 51% project capacity is allocated to residential subscribers	10
Other Benefits Higher preference: Provides local jobs/job training, demonstrates co-benefits (e.g. paired with storage, micro-grid project, energy audit, EE measures)	10
Geographic Limit within EDC service territory Higher preference: municipality/adjacent municipality Medium preference: county/adjacent county No Points: any geographic location within the EDC service territory.	5

Attachment 2: New Jersey Pricing Framework for Transitional Renewable Energy Certificates

TREC Value and Factors

31. How is the value of a TREC determined? (April 2020)

NJBPU calculates the value of a Transition Renewable Energy Certificate (TREC) by multiplying the base compensation rate ($152/MWh) by the project's assigned factor.

The TREC factors are defined based on the chart 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 carport	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 carport	0.6
Net metered non-residential ground mount	0.6

Attachment 3: Massachusetts Location-Based Rate Adders and Subtractors, 2020

Massachusetts Location-Based Rate Incentives

As of 2020, see: https://www.mass.gov/doc/capacity-block-base-compensation-rate-and-compensation-rate-adder-guideline-2

Note: NY and Rhode Island also have 6-cent adders for canopies

Summary of Compensation Rate Adder Values by Type and Adder Tranche

Adder Type[1]	Generation Unit Type	Adder Tranche and Value ($/kWh)[2]							
		Adder Tranche 1 (80 MW)	Adder Tranche 2 (80 MW)	Adder Tranche 3 (80 MW)	Adder Tranche 4 (80 MW)	Adder Tranche 5 (80 MW)	Adder Tranche 6 (80 MW)	Adder Tranche 7 (80 MW)	Adder Tranche 8 (80 MW)	Ad
Location Based	Building Mounted Solar Tariff Generation Unit								$0.01920	
	Floating Solar Tariff Generation Unit								$0.03000	
	Solar Tariff Generation Unit on a Brownfield								$0.03000	
	Solar Tariff Generation Unit on an Eligible Landfill								$0.04000	
	Canopy Solar Tariff Generation Unit								$0.06000	
	Agricultural Solar Tariff Generation Unit								$0.06000	
Off-taker Based	Low Income Property Solar Tariff Generation Unit	$0.03000	$0.02880	$0.02765	$0.02654	$0.02548	$0.02446	$0.02348	$0.02254	
	Low Income Community Shared Solar Tariff Generation Unit	$0.06000	$0.05760	$0.05530	$0.05308	$0.05096	$0.04892	$0.04697	$0.04509	
	Public Entity Solar Tariff Generation Unit	$0.04000	$0.03840	$0.03686	$0.03539	$0.03397	$0.03261	$0.03131	$0.03006	
Energy Storage[3]	Energy Storage Adder	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable	
Solar Tracking	Solar Tracking Adder	$0.01000	$0.00960	$0.00922	$0.00885	$0.00849	$0.00815	$0.00783	$0.00751	
Pollinator Adder	Pollinator Adder	$0.00250	$0.00240	$0.00230	$0.00221	$0.00212	$0.00204	$0.00196	$0.00188	

Massachusetts Location-Based Rate "Subtractors"

See: https://www.mass.gov/doc/land-use-and-siting-guideline/download

Note: Category 1 includes preferred sites, including eligible elevated systems for agriculture

b) Greenfield Subtractor

Pursuant to 225 CMR 20.07(4)(g), a STGU that falls under Category 2 or Category 3 has an associated Greenfield Subtractor applied to the STGU's Base Compensation Rate.

Before the Publication Date, Greenfield Subtractors apply as follows:

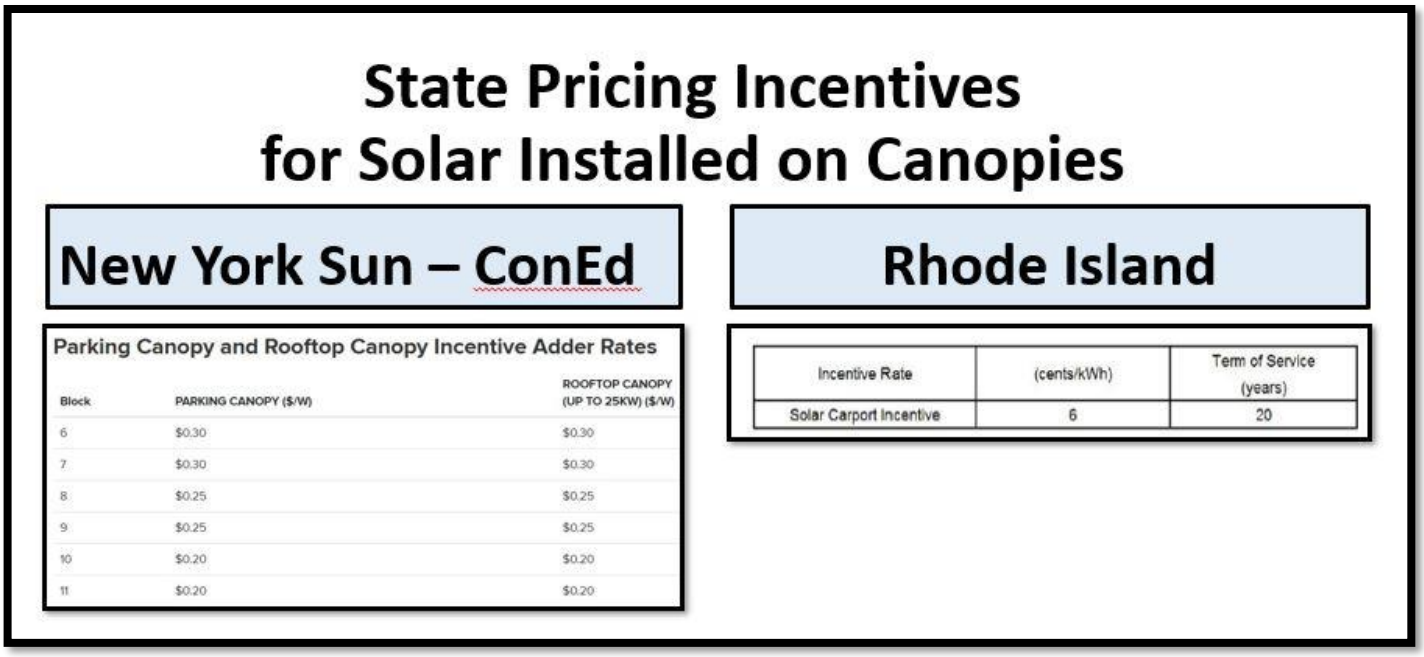
Category 1 Agricultural and Non-Agricultural:	No Greenfield Subtractor
Category 2 Land Use:	$0.0005/kWh per acre impacted
Category 3 Land Use:	$0.001/kWh per acre impacted

After the Publication Date, Greenfield Subtractors apply as follows:

Category 1 Agricultural and Non-Agricultural:	No Greenfield Subtractor
Category 2 Land Use:	$0.00125/kWh per acre impacted
Category 3 Land Use:	$0.0025/kWh per acre impacted

Pursuant to 225 CMR 20.07(4)(g), the value of the total Greenfield Subtractor applied to a STGU is measured as the acreage of land that a STGU occupies, which is calculated by measuring the square footage of the solar photovoltaic modules.

Attachment 4: Price incentives for Canopies in New York and Rhode Island



State Pricing Incentives for Solar Installed on Canopies

New York Sun – ConEd

Parking Canopy and Rooftop Canopy Incentive Adder Rates

Block	PARKING CANOPY ($/W)	ROOFTOP CANOPY (UP TO 25KW) ($/W)
6	$0.30	$0.30
7	$0.30	$0.30
8	$0.25	$0.25
9	$0.25	$0.25
10	$0.20	$0.20
11	$0.20	$0.20

Rhode Island

Incentive Rate	(cents/kWh)	Term of Service (years)
Solar Carport Incentive	6	20

Attachment 5: Illustrative data that could be included in proposed Land-Use Profile submitted by the applicant when CSEGS project applies to the PSC

			If the answer is "yes"			
Project address						
City/County						
Zoning						
Parcel size in acres						
Project impact area, in acres						
MW	no	yes	project acres	acres as % project acres as	GIS map source	Comments
General Features: Is the proposed community solar facility located in whole, or in part, on a:						
Rooftop					Aerial map	
Canopy					Aerial map	
Landfill					Aerial map	
Brownfield					Aerial map	
Reclaimed land					Aerial map	
Wastewater treatment facility or man-made reservoir					Aerial map	
Forest/woodlands					Merlin/Land Cover	
Farmland					Merlin/Land Cover	
Open space other than farmed land					Merlin/Land Cover	
Floodplain					Merlin	
Wetlands or streams, including buffers					Merlin-NWI Wetlands	
Other (describe)						
Total surface			XX	100%		
Significant Policy Features: Is the proposed community solar facility located in whole, or in part, in areas designated as:						
Critical Area, RCA					Merlin/Greenprint	
Critical Area, LDA or IDA					Merlin/Greenprint	
Forest Interior Dwelling Species Habitat					Maryland I-Map	
Targeted Ecological Area					Greenprint	
Watershed with Tier II or other high quality streams					MDE	
Prime farmland					USDA	
Area with cultural or historic significance					State/local	
Specific regulatory or contractual features: Is the site:						
Designated by governments as preferred for solar project?						
Owned or managed by a government entity?						
Owned or managed by utilities, airports, or other institutions?						
Subject to any federal or state permitting requirements?						