August 22, 2022

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

Re: RM56, *Supplementary data and recommendations for report to the Maryland General Assembly*[1]

The Advocates for Herring Bay (AHB)[2] are pleased to add for the record the enclosed 198-page profile of the ecological features of parcels being used for projects in Maryland's Community Solar Energy Generating Systems (CSEGS) Pilot Program. We developed these materials because of our dual interests in expanding clean energy and promoting the health and biodiversity of Maryland's natural resources. The profiles attest to the need for Maryland to amend its law to make ecological protection a priority in the design and implementation of the CSEGS program, and highlight opportunities for developing community solar in an ecologically and socially sound manner.

Based on our review of the profiles and participation in the Commission's Net Metering Working Group, we believe that the CSEGS program should not be extended beyond its current 2024 expiration date unless the state adopts three basic reforms:

- Amend the CSEGS statute to make preserving ecological assets a priority
- End the practice of paying full net metering payments for CSEGS projects regardless of their cost of generation, and target that financial incentive to projects that need a subsidy to be economically viable, especially less lucrative projects that protect ecological resources
- Ensure that any study sponsored by the state regarding the CSEGS program is impartial, authoritative, and comprehensive, with a scope that addresses ecological and financial effects.

Key Findings from the Ecological Profiles

The profiles presented in Appendix A provide aerial mapping images for active CSEGS projects in the BGE, Pepco, Delmarva, and Potomac Edison service areas as of June 2022 (see *AHB-Appendix A*). AHB relied on the addresses shown on the public websites of the utilities to identify project parcels, and tapped supplementary sources where possible to resolve deficiencies in that data. The maps and the estimates of the Ecosystem Services Value (ESV) of the parcels were taken from the *Greenprint* GIS website developed by the Maryland Department of Natural Resources (DNR).[3]

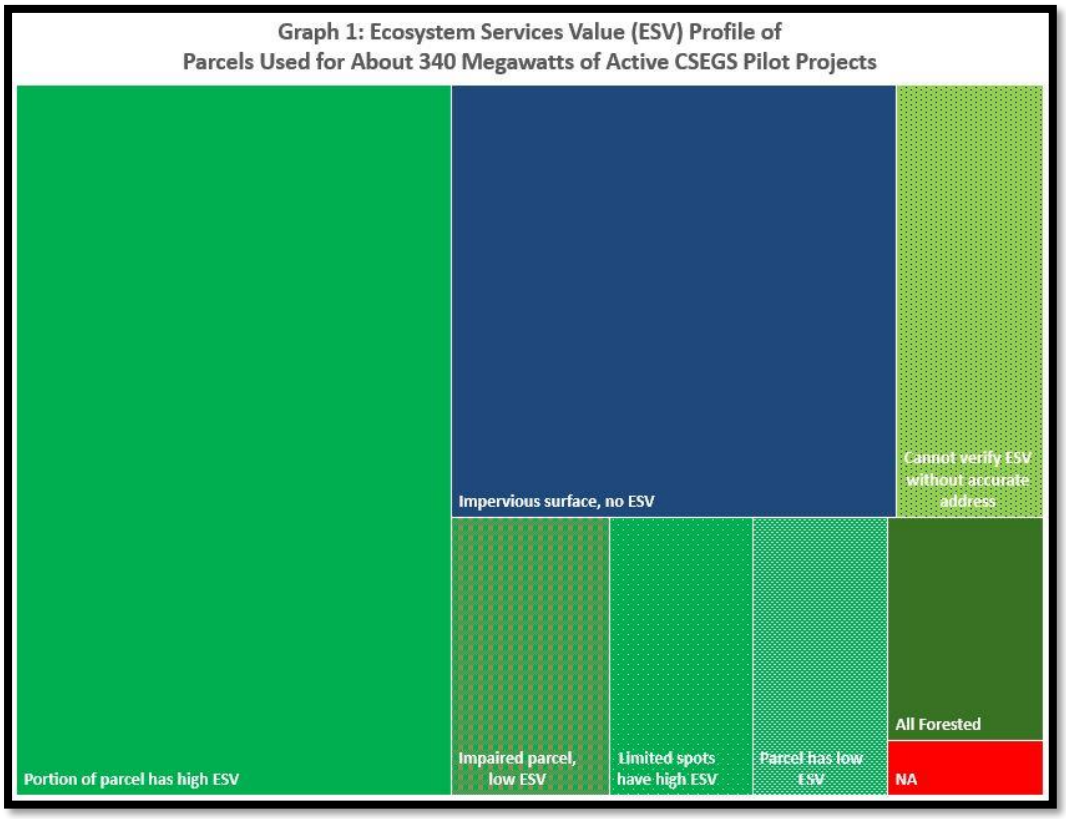
> ***FAQ: Total Ecosystem Services Value (ESV)*** *– Provides the total yearly economic value of ecosystem services provided by forest and wetland areas across the state of Maryland. This value is a summation of the economic value of all ecosystem services analyzed through DNR's "Accounting for Maryland Ecosystem Services" program. Services included are: atmospheric pollution removal, groundwater recharge, nitrogen removal, flood prevention and stormwater mitigation, wildlife habitat and biodiversity, surface water protection, and carbon sequestration.*

[1] See *psc.state.md.us*, Docket RM56, Item 255.
[2] The Advocates for Herring Bay, Inc. is a community-based environmental group in Anne Arundel County.
[3] DNR's *Greenprint* GIS is available at *https://geodata.md.gov/greenprint/*

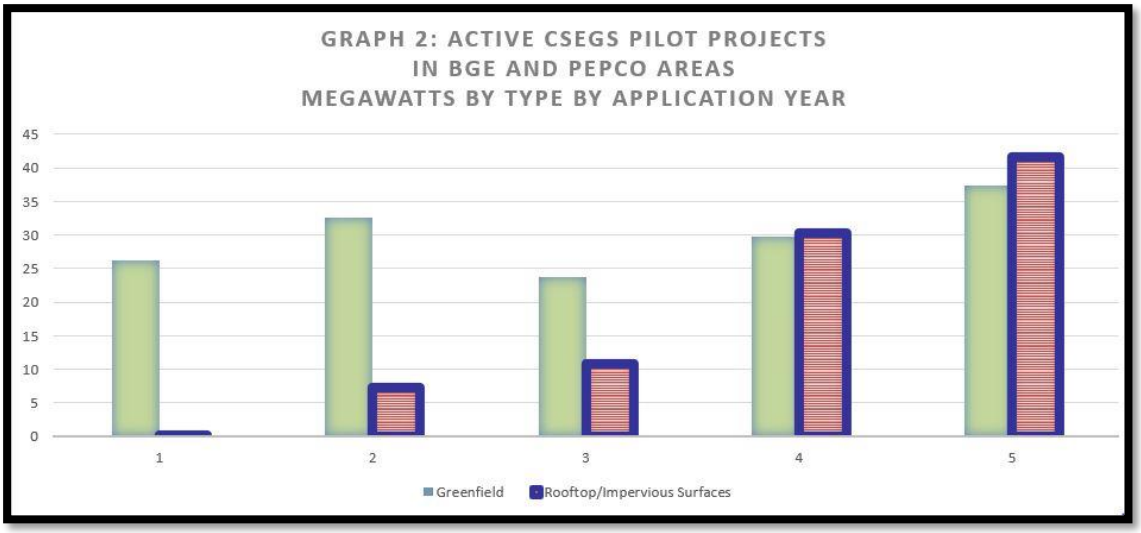
The active projects covered in Appendix A represent a total of about 340 megawatts of capacity, which would impact approximately 1,700 acres across the four utilities.[4] AHB's findings show that:

- In the absence of ecological safeguards for CSEGS projects:
  - Some forested parcels with high ecosystem services value are being cleared for the construction of these net-metered community solar projects; and
  - Although many partially forested parcels could be developed without impacting acreage with high ESV, decisions about whether to build on acreage with high ESV depend on the economic interests of developers and property owners.
- Applying ecological protections to the CSEGS program would not impede Maryland's progress in meeting its decarbonization goals:
  - Developers are demonstrating that installing solar generation on commercial rooftops and other impervious surfaces is financially viable at Maryland's net metering rates; and
  - Apart from forested parcels, virtually all of the tracts being used for ground-mounted arrays have enough acreage with low ESV to accommodate solar arrays without impairing acreage with high ESV.

As illustrated in Graph 1, ground-mounted solar arrays accounted for 74 percent of the capacity of active CSEGS projects (or about 1,260 acres, shown in green in the graph), and rooftop/canopy systems the remaining 26 percent (or roughly 440 acres, shown in blue). ***Two-thirds of the ground-mounted capacity is slated to be built on greenfield sites that include acreage with high ecosystem services value, including some that are completely forested.*** Parcels with low or limited ESV are hosting 14 percent of the ground-mounted capacity, and previously developed surfaces (e.g., landfills) another 8 percent. The ESV of the remaining 12 percent cannot be verified because of data limitations. Examples of parcels in each category are shown in Exhibit 1 on page 6.

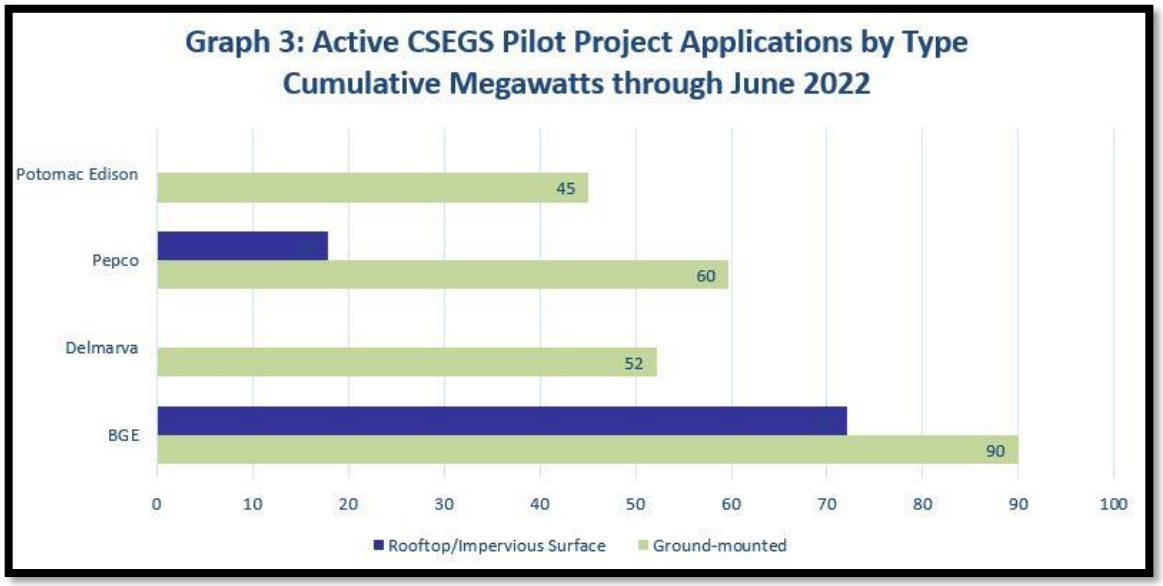


[4] This estimate assumes an average of 5 acres per megawatt of solar capacity.



As illustrated in Graph 2, ***applications for installing CSEGS projects on impervious surfaces surged in Years 4 and 5 of the Pilot Program***. This trend partly reflects the changing dynamics of the solar market. For example, the National Renewable Energy Lab reports that solar generation costs for commercial rooftop installations were about one-third lower in 2020 than when the Pilot Program began in 2015.[5] A review of the utilities' application lists also suggests, at least anecdotally, that the growth in rooftop projects resulted from new firms entering Maryland's CSEGS market.

As seen in Graph 3, the BGE region accounted for 80 percent of applications for rooftop/canopy projects, with the rest being built in Pepco's region. Nearly half of the capacity in the Pepco region is being built at subway stations in the Washington DC area, while projects in the BGE's territory are primarily being installed on commercial rooftops. As a result of these investments, the share of rooftop capacity in BGE's portfolio grew from 25 percent at the end of Year 3 to 45 percent by June 2022.



[5] During that same period, residential rooftop costs fell by about 25 percent and utility-scale generation by almost 50 percent. See National Renewable Energy Laboratory, *U.S. Solar Photovoltaic System and Energy Storage Cost Benchmarks: Q1 2021,* November 2021, pages 75-76.

Policy Considerations Supporting AHB Recommendations

Making ecosystem protection a statutory priority

In 2015, the Maryland legislature failed to include the environment as a factor to be considered in the design of the state's CSEGS program. Now—when the industry is requesting an extension of the program beyond 2024—is the time to correct that omission.

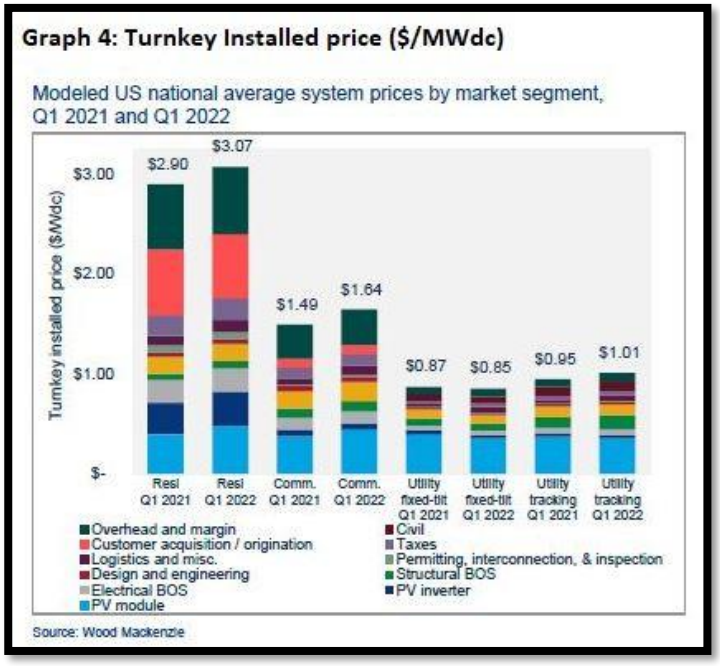
In our view, special conditions to protect ecological assets are appropriate for any recipient of state financial support, which in the case of CSEGS generators comes in the form of net metering payments paid by residents across the state. Such ecological safeguards should be implemented as a condition of state aid, separate from and in addition to other governmental regulations.

Having ecological guardrails for the CSEGS program would not impede Maryland's progress in addressing climate change. Discouraging the clearing of forests for solar arrays would dovetail with Maryland's investments in reforestation programs aimed at mitigating carbon dioxide emissions. And as noted above, AHB's profiles show that about 95 percent of the capacity of the active projects are being built on parcels that have the potential to avoid impacts on high-ESV land.

In practice, ecological safeguards could be implemented through a variety of procedural reforms. For example, Maryland currently assigns development rights for CSEGS projects on a first-come-first-served basis by email time stamps. By contrast, New Jersey has an approval process that accords priority to projects on previously developed surfaces and varies financial incentives by project type.[6]

Targeting net metering payments to the need for a subsidy

CSEGS projects in Maryland currently are guaranteed a uniform net metering price, regardless of their cost to generate electricity. The state makes no adjustment for variations in economies of scale, material costs, or benefits to the grid. Maryland pays the same net metering rate for CSEGS projects that it pays for residential rooftop systems, even though national data show that the "turnkey" costs of capacity for small commercial systems are about half the cost of residential rooftop (see Graph 4).[7]



Maryland's practice of paying uniform rates creates disparities in the profitability of different types of CSEGS projects. Those profit differentials may deter investments in less lucrative but ecologically beneficial projects, such as those on impervious or impaired surfaces. Paying more than needed for a given type of solar generation also may deter progress in decarbonizing other sectors by increasing the cost to consumers of switching to electric appliances and vehicles.

Calibrating rates to the need for a subsidy would maximize the quantity of solar capacity that can be leveraged over time by net metering payments. Maximizing that leverage is key to the success of

[6] See New Jersey's Evaluation Criteria (Appendix C, page 45) and a summary of the state's varied price incentives.
[7] Source of graph: Wood Mackenzie, *U.S. Solar Market Insight, Report Summary*, June 7, 2022, page 16.

Maryland's decarbonization efforts since ratepayer funds are a finite resource. AHB recommends that the state establish a process for continuously monitoring and adjusting the net metering rates paid for different types of solar projects. Ensuring the effectiveness of these payments may involve having dual tracks for any future CSEGS program, one that authorizes program operations and one that regularly reassesses eligibility for net metering payments.

Ensuring that studies are impartial, authoritative, and comprehensive in scope

In its report to the legislature, the Public Service Commission is recommending that the state fund a study of the benefits and costs of the CSEGS program. Based on our experience participating in the Net Metering Working Group, AHB urges the legislature to ensure that any such study:

- is done by nationally recognized experts unaffiliated with participants in the program,
- includes assessments of options to avoid risks to ecological resources done by experts on land-use and GIS analysis, natural resource conservation, and community development, and
- includes research by academic or other independent economists on ways Maryland could optimize net metering payments for CSEGS generation.

Procedural Considerations

As explained in prior filings, AHB has developed data and analysis on these issues because of our interest in policies that will maximize the ecological and social benefits of Maryland's transition to a clean energy future. We hope that the ecological profiles in Appendix A will be helpful in the decision-making process, and ask the Commission to consider providing the Appendix to the Maryland General Assembly as a supplement to the Commission's final report. Finally, as active members of the Work Group,[8] we respectfully ask the Commission to revise the list of study topics on page 18 of your July 1, 2022 report to expressly include the ecological and financial issues that AHB analyzed and discussed in this letter.

Thank you for considering our views.

Stephen Marley
Policy Coordinator
Advocates for Herring Bay

Exhibit 1: Examples of Types of Parcels Used for CSEGS Projects through June 2022
Appendix A: *Profile of Ecological Features of Active Community Solar Projects in Maryland as of June 2022*, which is filed with this letter and may be accessed at this link: *AHB-Appendix A*.

[8] AHB has been an regular participant in the meetings of the Work Group since the fall of 2000 and has submitted numerous filings in RM56, including items 147 (October 2020), 185 (January 2021), 212 (March 2021), 240 (August 2021), and 250 (February 2022).

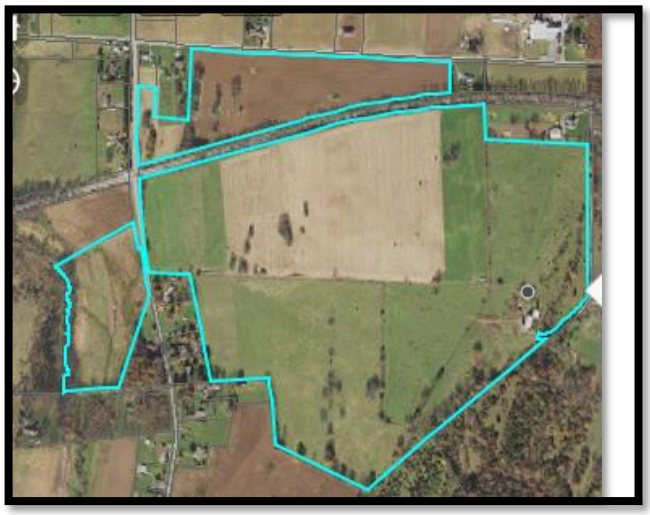
Exhibit 1: Examples of Types of Parcels Used for CSEGS Projects through June 2022

Forested parcel

Portion of parcel has high ESV

Parcel has limited areas with high ESV

Parcel has low ESV



Previously developed surface (e.g., landfill)

Impervious surface (commercial rooftop)