PUBLIC SERVICE COMMISSION OF MARYLAND

Maryland Energy Storage Program (MESP) 2023 Status Report

Submitted to the Maryland General Assembly
Annapolis, Maryland
In compliance with HB 910 of Public Utilities Article,
Annotated Code of Maryland

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Introduction

On May 8, 2023, the Maryland General Assembly enacted House Bill (HB) 910, amending §7-216 and promulgating §7-216.1 of the Public Utilities Article (PUA) of the Annotated Code of Maryland. Those changes directed the Public Service Commission (Commission) to establish a Maryland Energy Storage Program (MESP) that provides a competitive energy storage procurement program, with annual deployment targets for energy storage devices in Maryland. The statute as amended also directed the Commission to file a report to the Maryland General Assembly by December 31, 2023, on pending designs for the MESP and any additional statutory changes required to fully implement an effective program to meet the minimum targets for the deployment of new energy storage devices under §7–216.1.

To that end, the Commission issued Order No. 90823 establishing Case No. 9715[1] and the Maryland Energy Storage Program Workgroup (WG) on October 2, 2023. The WG was directed to develop a consensus proposal for the establishment of MESP in line with the requirements of §7-216.1. The WG was directed to file its final report by October 1, 2024, accompanied by a petition for rulemaking with proposed regulations to implement the MESP no later than July 1, 2025. The WG was further directed to file, by December 15, 2023, an interim report (Interim WG Report) which should contain a status update on the WG's progress, identify any non-consensus issues requiring immediate Commission resolution, and identify any additional statutory changes required to fully implement the MESP. This Interim WG Report is available as item No. 4 in the Case No. 9715 docket.[2]

The following status report provides a summary of the WG's efforts up to the point of this filing. The Commission has not yet taken a position on the Interim WG Report provided by the WG. As outlined in the corresponding fiscal note for HB 910 in 2023, the Commission requested one engineer and one economist to implement the MESP. The Commission has not received these requested resources. Therefore, an amendment to §7–216.1 is requested to require these resources in the statutory language. As the review and development of the energy storage program design is still nascent, the Commission does not currently have any other recommendations for any additional statutory changes required to fully implement an effective program to meet the minimum targets for the deployment of new energy storage devices under §7–216.1. If any are identified, the Commission will bring this to the Maryland General Assembly in 2025.

[1] Case No. 9715, Maryland Energy Storage Program.
[2] *See* https://webpsc.psc.state.md.us/DMS/case/9715.

Current Workgroup Status

The §7–216.1 statute as amended directed the Commission to report on any pending designs for the MESP. The WG has held five meetings to date, with several additional meetings of subgroups involved in various aspects of the MESP design. The WG has established consensus around the general program architecture and an intention of applying a phased approach to program design and implementation. While the MESP is understood as the overarching initiative responsible for implementing HB 910, the WG does not propose creating one singular program designed to completely implement HB 910 from the outset. Instead, the WG intends to design the foundation, general architecture, and phased implementation of the MESP in a manner that supports the ability to continually evolve the program.

Fundamental to this iterative design approach is the use of a set of programs, henceforth referred to as "mechanisms," that serve distinct, yet complementary, purposes. This approach seeks to most cost-effectively achieve the statutory deployment targets by addressing the evolving needs of Maryland's grid through a diversity of energy storage market segments, applications, and customer types. The MESP design will be guided by explicit "key design principles" and a long-term vision for the role of energy storage in Maryland.

The Interim WG Report is a summary of the most important design decisions that the WG has identified in their task of establishing a clear, non-controversial interpretation of HB 910 and designing the programs that can best achieve its deployment requirements. The Interim WG Report includes some initial consensus conclusions from the WG's collaboration thus far, while also outlining its plan and needs from external parties for answering the extensive list of remaining design questions in order to produce a thoroughly considered and consensus-based program proposal.

For each currently addressable design question, the Interim WG Report outlines their current consensus status, characterizes the nature of disagreement where present, and suggests one of three paths towards resolution for any non-consensus questions:

1. Further WG discussion
2. Further Commission guidance
3. Recommendations to the Commission for changes or clarification of Maryland statutes through legislative action

The WG is currently considering three mechanism types, summarized as:

- *Procurement Mechanisms:* Competitive solicitations for energy storage resources where a utility, state agency, or a special state-created entity either acquires the

physical assets of, or contracts for services or credits from, resources on behalf of the grid, rather than a specific energy customer.

- *Grid Services Programs:* Open-access "pay-for-performance" programs that compensate energy storage operators for providing specific grid services.
- *Deployment Incentives:* Subsidies or rebates to accelerate the deployment of energy storage resources to meet State deployment mandates. An incentive is not a payment for performance and should not be tied to specific operations of the resources.

The market segments being explored by the WG are for behind-the-meter (BTM), front-of-the meter distribution (FTM-Distribution), and front-of-the-meter transmission (FTM-Transmission) energy storage devices. The WG currently concludes the MESP should be organized by market segment with each segment having its own mix of mechanisms to achieve deployment, including funding sources, rules regarding ownership models, rules regarding safety and environmental standards, methodology for evaluating cost-effectiveness and equity considerations that are built into the program. Most stakeholders agree that the MESP will be most effective in supporting the diversity of market segments and grid priorities by offering multiple instances of each mechanism type throughout the MESP lifetime and using program performance evaluations and market data to inform their evolution.

The WG will also explore cost-effective and holistic approaches that consider the overlapping benefits of these market segments, particularly between electric transmission and distribution projects. The Commission has scheduled a Technical Conference to address distribution system planning best practices on Thursday, January 4, 2024. PJM, the Regional Transmission Organization serving Maryland, is slated to present on the concept of coordinated electric distribution and regional transmission system planning. While the topics of discussion at the conference will address the broader electric distribution system, we hope to learn more about how energy storage deployed on the electric distribution system can play a role in more holistic reliability planning. Separately, through its participation in the Organization of PJM States, Inc., the Commission has encouraged PJM to consider ways to address reliability through non-transmission alternatives. This could include finding ways to expedite the development of supply and load flexibility resources, including energy storage.

While the WG fully intends to release specific designs and related regulation proposals for an actionable program implementation by its October 1, 2024 deadline, its principal goal will be to have a clear roadmap for the next nine years of program implementation and evolution to achieve a 3 GW energy storage target by 2033.

The WG also is seeking Commission guidance on several non-consensus issues in the Interim WG Report including what specific types of energy storage devices are eligible to

contribute to the statutory deployment targets and the MESP criteria to be considered a deployed or installed energy storage asset that can count towards the statutory deployment targets, among other things.

Finally, the §7–216.1 statute as amended also directed the Commission to report on any additional statutory changes required to fully implement an effective program to meet the minimum targets for the deployment of new energy storage devices under §7–216.1. As outlined in the corresponding fiscal note for HB 910 in 2023, the Commission requested one engineer and one economist to implement the MESP. The Commission has not received these requested resources. Therefore, an amendment to §7–216.1 is requested to require these resources in the statutory language. Also, as described in Appendix I, the WG is still considering additional statutory changes, including any additional resources incremental to the Commission's initial request, that may be required to fully implement an effective program to meet the minimum targets for the deployment of new energy storage devices under §7–216.1.

Conclusion

While many significant MESP design questions remain unresolved and others have yet to receive attention, the Interim WG Report reflects the significant degree of coherence and alignment among stakeholders that will serve as a solid foundation for the WG heading into 2024. It is expected that any recommendations for statutory changes will be forthcoming from the WG by October 1, 2024, when the WG's final report with regulation proposals is due to the Commission. This will conceivably allow any further statutory recommendations to be considered by the Maryland General Assembly in its CY2025 session, in advance of the PUA §7-216.1 requirement to implement the MESP by July 1, 2025.

Appendix I - Summary List of Existing Statutes That May Require Future Modifications to Implement MESP

HB 910 defines an “energy storage device” in the PUA §7-216-(a)(2). As discussed in Section III.1 of the Interim WG Report, this definition allows for diverse interpretations particularly when it comes to thermal storage and hydrogen-based storage where, although included in the statute definition for an energy storage device, the storage device capacity cannot easily be translated into a MW value. Also as discussed in Section III.5 of the Interim WG report virtual power plants, although included in the statute definition for an energy storage device, could potentially contain non-energy storage resources (e.g. distributed generation, smart appliances) and could also potentially contain multiple energy storage assets of varying technologies.

In addition, as described in Section III.7 and III.8 of the Interim WG report, whether vehicle-to-grid (V2G) applications, mobile battery systems and pumped storage hydro energy storage devices should be included in the statute definition are still being considered in the program design with Commission guidance requested. There are also several other statute interpretation questions regarding eligibility of energy storage devices for the MESP described in Section II of the WG Report. Given these issues to be resolved, the WG will make a recommendation to the Commission at the end of program design as to whether to request the Maryland General Assembly modify the PUA §7-216-(a)(2) statute definition for an energy storage device.

HB 910 includes the term “Competitive Procurement Mechanisms” in the PUA §7-216.1(c) as a driver of the program "to reach a minimum of 3,000 MW of energy storage." As discussed in Section VII.4 of the Interim WG Report, a strict interpretation of this would limit the Commission in achieving the goal of a robust, cost-effective energy storage system in the State. The WG will make a recommendation to the Commission at the end of program design as to whether to request the Maryland General Assembly modify PUA §7-216.1(c) to allow for a broader interpretation.

As discussed in several subsections of Section VIII of the Interim WG report, utilities’ lessons learned from the existing energy storage pilots in Case No. 9619 regarding community and customer acceptance may result in a need to modify Certificate of Public Convenience and Necessity (CPCN) statutes and related regulations. In addition, several stakeholders expressed a need for reviews of large energy storage projects similar to those typically deployed in CPCN proceedings. Energy storage is currently not included in the definition of a “generating station”

in statute because energy storage is not an integral plant or generating unit for the **production** [*Emphasis Intentional*] of electric energy.

Some stakeholders have advocated for a "*CPCN-Lite*" process for energy storage that is streamlined so that projects can move through the process in a timely fashion. This may require modification of CPCN requirements in PUA §§7-205—7-208. In addition, stakeholders conclude that BTM Battery Energy Storage System (BESS) systems eligible for the MESP should be required to be installed in compliance with the National Fire Protection Association (NFPA) 855 standard. This may necessitate changes to other statutes outside of the Public Utilities Article to implement building code and environmental statute changes that consider energy storage. Given these issues to be resolved, the WG will make a recommendation to the Commission at the end of program design as to whether to request the Maryland General Assembly modify PUA §§7-205—7-208 to implement *CPCN-Lite* requirements for large energy storage devices in addition to potential changes to building code and environmental statutes to consider energy storage.

The EmPOWER statutes in PUA §7–211 and 7-211.1 currently do not authorize the use of BTM battery storage as a demand response resource, and furthermore the energy storage deployment mechanisms discussed in this report could potentially be funded through a surcharge. This could involve modifying the definition of demand response to not foreclose BTM energy storage programs that could involve injections into the grid as a grid service as well as reducing demand from the grid at times of constraint (i.e., traditional demand response). To the extent that surcharge mechanisms may be proposed are used in a future energy storage incentive program design, the WG may need coordination with the EmPOWER Workgroup and modification of the EmPOWER statutes in PUA §7–211 and 7-211.1

At present, it is unknown what the MESP's incentive mechanism funding and incremental staffing needs are or how they will be fulfilled. More detailed design work for the program needs to be completed before these resource needs can be identified. In addition, as described in VIII.8 of the Interim WG Report, other state agency resources may also be impacted. The WG will make a future recommendation regarding these needs as soon as they are determined through its program design efforts. This could result in the need to further modify PUA §7–216.1 to include a statute requirement to ensure that needed resources are allocated to effectively implement the MESP.