

## Testimony Outline for Senate Bill 861

### Public Utilities – High Energy – Use Facilities – Greenhouse Gas Emissions Reductions

March 7, 2024

#### Education, Environment and Energy Committee

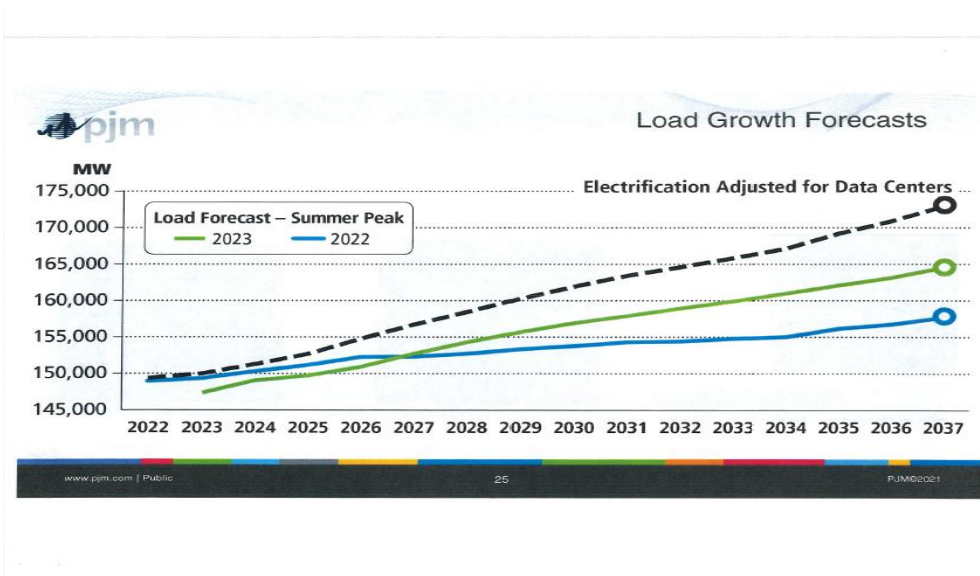
**Opinion: Favorable**

Dear Chair Brian J. Feldman and Committee Members,

The Fellowship of Scientists and Engineers supports SB 861.

I am the Chair of the Fellowship of Scientists and Engineers and an electric power engineer with a Masters in Electric Power Engineering from Rensselaer Polytechnic Institute. I analyzed the NYC grid for Con Edison and investigated blackouts for the Federal Energy Regulatory Commission. As an electric power engineer, it is my opinion that SB 861 is necessary legislation to help transform high energy industries from polluting to sustainable.

We scientists and engineers are constituents of Senator Karen Lewis Young. We are not against datacenters. However, we encourage our elected representatives to promote the use of renewable energy by the industry that will be the biggest consumer of energy in the state. PJM, our regional transmission system operator, projects that the “electrification adjusted for data centers” will drastically accelerate the region’s power requirements as seen in this PJM load growth forecast presented to the Maryland Education, Energy and Environment Committee on September 12, 2023. (See page 13 of the presentation.)



Indeed, Governor Moore’s administration in June 2023, unveiled a wide-ranging plan to achieve a 60% cut in the state’s greenhouse gas emissions by 2031. How will this be

achieved if the enormous increase in power demanded by hyperscale datacenters and other new high use industries is provided by fossil fueled power plants?

SB 861 is a response to dealing with this enormous increase in power demand while complementing current Maryland laws such as the *Climate Solutions Now Act*. Furthermore, SB 861 reflects actions by the Federal Energy Regulatory Commission (FERC) and PJM to encourage a continuous significant increase in the percentage of sources of renewable energy.

FERC Order 2023, issued November 6, 2023, details improved processes and requires transmission providers to proceed quickly to connect generating facilities that do not emit greenhouse gases to the transmission system.<sup>1</sup>

PJM is incorporating methods to bring more renewable energy into the system. Jeff Shields, PJM spokesman recently noted, “More than 90% of the projects are renewable energy or energy storage”.<sup>2</sup>

Electric Power by the numbers:<sup>3</sup>

Maryland is a net importer of power. Its existing installed capacity is about 11,000 megawatts while PJM’s installed capacity is over 184,000 megawatts (making Maryland’s contribution about 6%). At present the energy mix of both Maryland and the PJM region is dominated by power generated by fossil fuel and nuclear power plants, but this is about to change.

When a generator wishes to connect to the transmission system in any region, the request for interconnection is entered in a “queue”. Per FERC Order 2023, applicants that will produce renewable power will be given priority in the queue, including PJM’s.

PJM’s queued capacity as of April 1, 2023, is over 252,000 megawatts, of which only 5,500 megawatts is expected to be natural gas generation. Therefore, renewable power will dominate new interconnections in keeping with the objectives of SB 861. It is this renewable power that will be accessible to high energy users such as hyperscale datacenters. At present, Quantum Loophole in Frederick County is the only hyperscale datacenter campus being planned for Maryland. The PJM Regional Transmission Planning

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<sup>1</sup> “FERC issues rule to speed grid connections for storage, renewables, other generators amid 2-TW backlog” (<https://www.utilitydive.com/news/ferc-interconnection-rule-queue-renewable-energy/689289/>)

<sup>2</sup> <https://www.utilitydive.com/news/pjm-outlook-2024-capacity-market-reform-rmr-transmission-planning/708811/>

<sup>3</sup> In September 2023, a delegation of the Maryland Senate Education, Environment and Energy Committee were given a presentation by PJM at its headquarters. The data cited below is from that presentation.

report projects providing an initial 1500 megawatts by 2027/2028, (See Data Center Component Load for FirstEnergy (APS) below.)

**Table 1.** 2027/28 Case Summer Zonal Load for Dominion and FirstEnergy

| Study Case                                    | Summer Zonal Load (MW)            |                                 |
|---|-----------------------------------|---------------------------------|
|   | Dominion/NOVEC                    | FirstEnergy (APS)               |
| 2022 Peak                                     | 20,424 (forecast)/21,156 (actual) | 8,675 (forecast)/8,412 (actual) |
| 2027 RTEP                                     | 23,681                            | 8,780                           |
| 2027 Baseline                                 | 26,393                            | 9,607                           |
| 2027 High Load Growth                         | 28,893                            | 10,559                          |
| 2028 RTEP (2023 Load Forecast)                | 28,705                            | 9,568                           |
| Data Center Component Load (modeled in cases) | ~5,700                            | ~1,500                          |

PJM RTEP – 2022 Window 3, page 5, [20231205-2022-rtep-window-3-reliability-analysis-report.ashx](https://www.pjm.com/20231205-2022-rtep-window-3-reliability-analysis-report.ashx) ([pjm.com](https://www.pjm.com))

Projections for Quantum Loophole Datacenter Campus:

Quantum Loophole CEO Josh Snowhorn has estimated that the campus could require 2400 to 3000 or more megawatts at full buildout in 15 years. Consider the greenhouse gas emissions that could be avoided if this mega scale amount of power were emission free.

It will take an unknown number of years to build the projected renewable generation and interconnect it to high energy use industries via bulk power transmission lines. As an engineer, it has been my experience that projects often go past the original completion date. During that construction and interconnection time, data centers and other high energy use industries can arrange for power purchase agreements (PPAs) of renewable energy.

To reduce the amount of power required from the PJM system, high energy use industries can invest in solar arrays onsite or on an adjacent site. As technology advances fuel cells, flow batteries or heat recovery to steam systems will become available. Further power demand reduction can be achieved through sustainable building and lighting practices.

We scientists and engineers ask that you protect our environment, honor our laws, and encourage the development of renewable power by approving SB 861.

Elizabeth Law, Chair,  
 William Steigleemann, Vice Chair  
 Fellowship of Scientists and Engineers