HB 40 - SUPPORT
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Public Utilities - Transmission Lines - Advanced Transmission Technologies

House Committee on Environment and Transportation
February 3, 2026

Chair Korman, Vice Chair Guyton, and Members of the Committee:

I am writing to express strong support for H.B. 40, encouraging the deployment of Advanced Transmission Technologies by Maryland utilities. I am writing as a confessed energy nerd – a retired private citizen in Bethesda, a customer of Pepco, a member of Third Act Maryland, and a former official in the U.S. Department of Energy, where I served as Principal Deputy Assistant Secretary for Conservation and Renewable Energy from 1989 to 1993. **Third Act Maryland** is a volunteer organization that brings together over-60 adults who want to build a better future for our children and grandchildren – in this case, by strengthening clean energy policies that also reduce energy costs to consumers.

The rising cost of our monthly electricity bills has focused the attention of Marylanders, including Gov. Moore, on the issue of energy availability and affordability – a complex topic that seemingly defies easy solution. This bill, however, is **the lowest-hanging fruit you will find** to reduce the cost of electricity in a comparatively short period of time. Unlike other proposals you will consider on this committee as you grapple with energy policy, this one is a no-brainer.

Put simply, advanced transmission technologies are low-cost, proven, and quickly deployable tools to squeeze more juice from our existing transmission grid. Ironically, it is the fact that they are low-cost that has proved their biggest impediment. Utilities make money by investing capital and earning a return on that investment. The bigger the investment, the bigger the return. To them, these technologies are small potatoes – even if they save consumers money and make better use of our built-and-paid-for transmission grid. They need to be nudged to do the right thing, and HB 40 would provide that nudge.

What are advanced transmission technologies?

The transmission grid is one of our greatest achievements, but it represents old technology. Advances in material science, power electronics, communication devices, computational processing power, and optimization algorithms have made possible new ways to improve the efficiency and carrying capacity of existing power lines.[1]

To take two that are specifically called out in HB 40:

- "**Grid-enhancing technologies**," or GETs, include hardware and software that increase the capacity, efficiency, reliability, or safety of the power system **faster and at a lower cost** than traditional wires-based solutions. In many cases, GETs can be installed in months, not years, and pay for themselves in less than a year, making them a low-risk investment option.
- "**High-performance conductors**," or HPCs, enable existing power lines to carry higher loads with reduced thermal sag, improved efficiency (i.e., lower losses), and greater resilience compared to traditional conductors – 50% to 100% more than conventional conductors – often **avoiding the need to build additional transmission** lines.

A recent paper from MIT's Center for Energy and Environmental Policy Research[2] summed it up this way:

> In the near-term, perhaps the most powerful opportunity for progress involves increasing the capacity of the electricity grid without building entirely new lines or systems. With so-called advanced transmission technologies (ATTs), we can expand transmission capacity quickly by improving utilization of existing grid infrastructure. According to a recent DOE report[3], wider implementation of these solutions could meet our expected 10-year peak demand growth if deployed rapidly.

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[1] The Brattle Group, "Incorporating GETs and HPCs into Transmission Planning Under FERC Order 1920," Overview of GETs and HPCs, April 2025, p. 11: https://www.brattle.com/wp-content/uploads/2025/04/Incorporating-GETs-and-HPCs-into-Transmission-Planning-Under-FERC-Order-1920.pdf.

[2] Brian Deese, Rob Gramlich, and Anna Pasnau, Massachusetts Institute of Technology Center for Energy and Environmental Policy Research, "A Roadmap for Advanced Transmission Technology Adoption," CEEPR RC-2024-06, September 2024: https://ceepr.mit.edu/wp-content/uploads/2024/09/MIT-CEEPR-RC-2024-06.pdf.

[3] U.S. Department of Energy, "Pathways to Commercial Liftoff: Innovative Grid Deployment," April 2024, p. 1: https://climateprogramportal.org/wp-content/uploads/2025/02/Liftoff_Innovative-Grid-Deployment_Final_5.2-1.pdf.

As the U.S. Department of Energy put it in its December 2020 report, "Advanced Transmission Technologies"[4]:

> Advanced transmission technologies, coupled with advanced computational and advanced dynamic situational awareness, are a suite of tools that can help address transmission challenges, improving the efficiency and effectiveness of electricity delivery and increasing the reliability and resilience of the system.
>
> Other technologies, such as energy storage, microgrids, and distributed controls, can also help support the overall objectives of the electric power system. Underpinning the various grid challenges is the fundamental need to perform real-time balancing of generator outputs to meet demand – at all times and across all regions – within the limits and capabilities of the underlying hardware. Enhanced planning and optimization methods can help minimize operating costs, while new hardware capabilities can help move more power by upgrading existing line materials using existing transmission pathways. These new capabilities become more critical with a growing number of evolving threats from cyber-attacks and extreme weather events, among others.

Why is this legislation needed?

Utility profit incentives get in the way of the deployment of advanced transmission technologies. As a report from the U.S. Department of Energy put it:[5]

> Broadly speaking, under traditional cost-of-service regulation, [utilities] earn profits based on capital expenditures (CAPEX) investments and volumetric energy sales rather than customer outcomes. Operational expenditures (OPEX) are passed on to customers at cost, without generating a return for utilities. This business model can disincentivize investments in innovative technologies that have relatively lower CAPEX costs, have higher OPEX, improve system efficiency, or facilitate integration of third-party owned generation and storage (e.g., distributed energy resources, VPPs).
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> Additionally, the value of advanced grid solutions sometimes flows to customers, other grid stakeholders, or society at large, while the utility bears the cost without realizing significant financial benefit. In the absence of a financial incentive or regulatory mandate, utilities are likely to prioritize investments in other projects that

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[4] U.S. Department of Energy, "Advanced Transmission Technologies," December 2020, pp. i-ii: https://www.energy.gov/sites/prod/files/2021/02/f82/Advanced%20Transmission%20Technologies%20Report%20-%20final%20as%20of%2012.3%20-%20FOR%20PUBLIC.pdf.

[5] U.S. Department of Energy, *op. cit.* ("Innovative Grid Deployment"), p. 54.

generate higher financial returns, rather than prioritizing solutions that may drive better overall system or societal impact.

MIT's recent report made a similar point:

> This "capex bias," which has become an accepted and well-known feature of cost-of-service regulation for over 50 years, ultimately means that transmission providers lack a positive incentive to use GETs or can be disincentivized from using GETs. Because GETs can obviate the need for more costly construction of new transmission lines, thereby reducing utility capital expenditures, they can lower utilities' profits. Even high-performance conductors, which are more expensive than regular conductors, can lower profits when they are installed in lieu of building new transmission – [because] reconductoring transmission lines costs less than half as much as building new transmission.[6]

Conventional incentives based on return on equity cannot motivate utilities because profit is directly proportional to capital invested, which for advanced transmission technologies can be very small: "For example, a 100-basis-point incentive on $1 million of equity invested yields only $50,000 in additional earnings. It is hard to imagine senior utility management even having a meeting to discuss an action that could achieve only a $50,000 contribution to the bottom line, especially when 100 basis points on a $100 million transmission line with potentially similar system benefits would yield $5,000,000 in additional earnings."[7]

HB 40 addresses this dilemma by putting it squarely in front of the Public Service Commission. A utility that wants permission to build a new transmission line would have to show the Commission that it had already considered alternatives to that line, including advanced transmission technologies.

Would Maryland be breaking new ground with HB 40?

HB 40 does not represent radical new thinking in utility regulation. **Twenty years ago,** in the Energy Policy Act of 2005, Congress directed FERC to "encourage deployment of transmission technologies and other measures to increase the capacity and efficiency of existing transmission facilities and improve the operation of the facilities."[8] In that same

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[6] Deese *et al., op. cit.*

[7] American Council on Renewable Energy, Comments before the Federal Energy Regulatory Commission on "Electric Transmission Incentives Policy Under Section 219 of the Federal Power Act," RM20-10-000, July 2020: https://acore.org/wp-content/uploads/2020/07/ACORE-Comments-on-FERC-Transmission-Incentives-NOPR.pdf.

[8] Public Law 109–58, title XII, Subtitle D – Transmission Rate Reform, Sec. 1241, Transmission Infrastructure Investment, codified at 16 U.S. Code § 824s: https://www.law.cornell.edu/uscode/text/16/824s.

law, Congress defined advanced transmission technology as including, among other things, energy storage devices (specifically including batteries), controllable load, and distributed generation (including PV, fuel cells, and microturbines).[9]

Former **FERC Chairs Rich Glick and Neil Chatterjee** recently urged[10] state action to encourage the rapid adoption of grid-enhancing technologies and high-performance conductors to quickly squeeze more out of existing transmission lines and rights-of-way. Noting the long lead time needed to build new electric transmission capacity, they said:

> Advanced transmission technologies will provide numerous benefits, but misaligned economic incentives often keep utilities from integrating them into their transmission planning processes. …
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> At least 10 states passed legislation in 2025 requiring, at minimum, the consideration of advanced transmission technologies. …
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> Given the urgent need to bring new generation online and keep costs low for customers as demand grows, we must maximize the use of the existing system through advanced transmission technologies. Economic growth relies on low-cost reliable power, and state regulators – in their state commissions and in regional planning processes – now have an important opportunity to ensure that growth is supported by cost-effective investments in advanced transmission technologies.

Gov. Moore's Executive Order of December 19, 2025, addressing the topic of Consumer Affordability, directs the Maryland Energy Administration to petition the Maryland Public Service Commission to require transmission owners to "specifically evaluate Advanced Transmission Technologies (ATTs), including Grid-Enhancing Technologies (GETs), before approving new transmission lines or major upgrades."[11] That is a step in the right direction, but HB 40 would put that direction into law.

We urge a favorable report on HB 40.

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[9] *Ibid*., Sec. 1223, Advanced Transmission Technologies, codified at 42 U.S. Code § 16422: https://www.law.cornell.edu/uscode/text/42/16422.

[10] Rich Glick and Neil Chatterjee, "FERC paved the way for smart grid solutions. States must take the next step." in *Utility Dive*, Aug. 15, 2025: https://www.utilitydive.com/news/smart-grid-gets-grid-enhancing-hpc-states/757687/.

[11] Gov. Wes Moore, Executive Order: "Building an Affordable and Reliable Energy Future," Sec. E2, "Grid Optimization and Advanced Transmission Technologies," Dec. 19, 2025, p. 6: https://governor.maryland.gov/Lists/ExecutiveOrders/Attachments/99/EO%2001.01.2025.27%20Building%20an%20Affordable%20and%20Reliable%20Energy%20Future_Accessible.pdf.