April 1, 2026

Senate Transportation & Energy Committee

RE: Support for HB 26-1081

Honorable Committee Members,

I wish to express my strong support for HB26-1081, "Concerning measures to optimize Colorado's electric transmission system." As I will be traveling outside of Colorado on February 26, I will not be able to attend your hearing in person and must instead submit these written comments.

I am a retired engineer and public policy analyst and a registered voter in Fort Collins (zip code 80526). I spent the last 30 years of my career working for and with governmental departments and commissions across the United States (and abroad) that regulate electric utilities. I advised public utility commissions in dozens of states (including Colorado) on how to ensure that electric utilities can provide reliable and affordable electricity to consumers while reducing the environmental impacts of their operations. As a Senior Associate at the nonprofit Regulatory Assistance Project from 2011-2022, I authored dozens of research papers relevant to the topic of electric transmission systems, including:

- Shenot, J., Prause, E., & Shipley, J. (2022). *Using Benefit-Cost Analysis to Improve Distribution System Investment Decisions*. Montpelier, VT: The Regulatory Assistance Project.
- Shenot, J. (lead editor). (2019). *Integrated Distribution Planning for Electric Utilities: Guidance for Public Utility Commissions*. Mid-Atlantic Distributed Resources Initiative.
- IRENA. (2018). *Insights on Planning for Power System Regulators*. Abu Dhabi: International Renewable Energy Agency.
- SEE Action Driving Ratepayer-Funded Efficiency through Regulatory Policies Working Group. (2011). *Using Integrated Resource Planning to Encourage Investment in Cost-Effective Energy Efficiency Measures*.

Throughout my work and the publications cited above, I consistently emphasized the benefits to consumers of smart long-term electricity system planning practices. Electric utilities routinely develop and update long-term plans to meet their customers' needs for decades in advance. They make hugely expensive investments in transmission lines, power plants, and other infrastructure that may last for decades. And they recover the costs of those investments through the rates customers pay on their electric bills for decades. The cost to consumers of investing in the wrong things can be extraordinary and can last for decades. This is why smart planning practices are so important. If we take every reasonable step during the planning process to make sound investment decisions, we will

not only keep the lights on but do so at the lowest long-term cost possible while meeting all other state policy goals.

Most people do not realize that investor-owned, for-profit electric utilities like Xcel and Black Hills typically are authorized by regulators to earn a rate of return for their shareholders (i.e., profits) **only** on **capital** investments made on **infrastructure**. They do not earn profits on a myriad of non-infrastructure investments or operational expenditures that might reduce their operational costs, such as reducing energy losses and using transmission lines more efficiently. This "utility business model" creates a disincentive for those utilities to invest in the kinds of grid-enhancing technologies that HB26-1081 would encourage. To put it bluntly, investor-owned utilities can earn greater returns for their shareholders by building big new transmission lines than by using their existing lines more efficiently or building smaller but more efficient new lines.[1] And this, fundamentally, is the reason I support HB26-1081. This legislation would direct the public utilities commission to require the state's electric utilities to consider grid-enhancing technologies as part of their long-term planning processes.

Consumers would likely benefit, and benefit hugely, from enactment of HB26-1081 and fair consideration of grid-enhancing technologies. This bill would ensure that our utilities look for opportunities to reduce consumer costs by deploying such technologies in lieu of more costly investments in new and/or less efficient transmission lines. One such technology is the installation of sensors on existing transmission lines that measure key variables in real time and allow for "dynamic line ratings." What this means is that the grid operator can know in real time, from hour to hour, how much current that line is able to carry. Without such sensors, the grid operator must rely on a conservative estimate of how much current the line can carry under worst case conditions, which will avoid overloading the line but will frequently underestimate its actual capacity to carry current in most hours of the year. Dynamic line ratings can thus improve the reliability of the transmission system by replacing estimates with real-time data. In addition, and probably most importantly, if the grid operator always relies on conservative estimates of how much current existing transmission lines can carry, the utility may feel the need to invest in new transmission lines that are not yet needed or are oversized. And those kinds of mistakes can be hugely expensive for utility customers.

An often-cited example of how grid-enhancing technologies save money occurred in Pennsylvania. Instead of reconstructing two high voltage transmission lines to increase their capacity, the electric utility PPL installed sensors and dynamic line rating capabilities

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[1] Even though electric cooperatives and municipal electric utilities are not similarly driven by a profit motive, these smaller utilities may have less exposure to new technologies and some (certainly not all!) may still harbor a bias in favor of those technologies that are most familiar or "industry standards" – often until long after new technologies have proven to be superior.

that solved a perceived transmission capacity problem at much lower cost. PPL and its customers saved about $50 million in investment costs and are expected to save about $20 million annually in operational costs.

I also want to emphasize that dynamic line ratings and other grid-enhancing technologies not detailed in my testimony can also reduce the environmental impacts of the electric grid. Transmission lines are the backbone of an electric power system that provides huge societal benefits, but they come at an environmental cost in terms of land use, habitat disturbances, resources used to build them, and wildlife impacts. To minimize those impacts, we need to get as much capacity and value as possible out of every transmission investment our utilities make. Building or rebuilding lines that we don't need or that are oversized will waste resources and damage habitats that are already threatened by other human impacts.

For all these reasons, I urge the Committee and the entire legislature to vote in favor of HB26-1081.

Respectfully,
John Shenot
Fort Collins