



**Testimony of Robert Altenburg  
Senior Director for Energy and Climate, PennFuture  
Before the PA Senate Democratic Policy Committee**

Jan 23, 2025

Good morning, Chairman Miller and members of the Senate Democratic Policy Committee. My name is Robert Altenburg, and I am the Senior Director for Energy and Climate at PennFuture. PennFuture is a public interest membership organization dedicated to leading the transition to a clean energy economy in Pennsylvania and beyond. PennFuture strives to protect our air, water, and land and to empower citizens to build sustainable communities for future generations.

Affordable and reliable energy may be one of the defining issues for this legislative session. While costs are skyrocketing, worries are increasing that our energy system can reliably meet future demand. The current system isn't working, but missteps in responding to the problem could worsen the situation.

*PJM's Market Failure is Expensive*

In the July capacity auction for the 2025/2026 delivery year, PJM cleared over 135 gigawatts—an 18.6% reserve margin over the forecasted peak demand at a cost of \$14.7 billion.<sup>1</sup> This represented an increase of almost \$12.5 billion over the prior year—an enormous windfall for generators.

As Governor Shapiro noted in a recent complaint filed with FERC, this is a clear market failure. A key purpose of rising capacity prices is to send a market signal incentivizing more generation, but “it is currently physically impossible for new resources to respond.”<sup>2</sup> There are 3,300 projects currently stuck in PJM's interconnection queue, and even if PJM's proposed “fast-track” Reliability Resource Initiative (RRI) is approved and works as planned, it's unlikely new generation could respond before 2029/2030.

This problem is further aggravated by PJM's delays in holding capacity auctions. While the system was designed to hold capacity auctions three years prior to the delivery year to allow plenty of time for new capacity to respond. Since 2019, PJM has failed to do that. This past auction sent the price signal less than a year before the electricity needs to be available.

What we are getting for our money isn't the new capacity ready to respond to increasing demand but only encouraging existing generators to continue producing. That doesn't require or justify paying “new generation” prices. As the Governor noted, such a windfall to

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<sup>1</sup> PJM, 2025/2026 Base Residual Auction Report, (July 30, 2024).

<sup>2</sup> Complaint at 17, Shapiro v. PJM Interconnection, EL25-\_\_\_ (FERC Dec. 30, 2024).

existing generators may even be a disincentive for companies to increase generation since doing so would lower fleet-wide profits.<sup>3</sup> This has led the Governor to question whether the Commonwealth should continue participating in PJM's market.<sup>4</sup>

Resource adequacy in the future is a concern, but the most immediate driver to raising consumer costs is the flawed market design. Governor Shapiro is correct in focusing on these issues as the most effective short-term measure to protect consumers.

### *Reliability In Perspective*

It makes sense to address questions of future resource adequacy and our immediate concerns differently. With significant reserve margins built into our system, we are unlikely to run short of power on a typical day. Our biggest problem is extreme events on summer and winter days with unusually high demand. Different problems require different solutions.

Diversification is essential for all sorts of investments, and energy resources are no different.

We learned this lesson in Winter Storm Elliot in 2022 when gas plants failed. Knowing forced outages were usually 5 to 10 percent higher during winter storms, PJM prepared with about 30 gigawatts of reserve capacity. As it turned out, almost 24 percent of the generating capacity—47 gigawatts—failed. While gas-fired power plants accounted for less than half of the capacity on the grid, they were responsible for more than 70% of the failures.<sup>5</sup>

This is not unique to PJM. A 2021 freeze in Texas resulted in more than 5 gigawatts of generation going offline.<sup>6</sup> That event left more than 4 million people without power and more than 100 fatalities, but it also drove electricity prices up more than 400 times the usual amount.<sup>7</sup> Despite initial attempts in the media to blame renewable generation, gas was again responsible for about two-thirds of the failures.<sup>8</sup>

Like Texas, PJM had been operating as if a failure at a gas plant could be treated as an isolated event. With both upstream fuel supply and mechanical issues, gas plants have a disturbing tendency to fail simultaneously. Worse yet, these mass failures can be hard to

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<sup>3</sup> Id. At 20.

<sup>4</sup> Gov. Shapiro, Letter to the Mark Takahashi, Chair, PJM Board of Managers (Jan. 13, 2025).

<sup>5</sup> PJM, Winter Storm Elliot Event Analysis & Recommendation Report (July 17, 2023).

<sup>6</sup> S. Webb, Investigation: Texas failed to crack down on gas after grid crisis, E&E News, (July 20, 2023).

<sup>7</sup> D.K. Kumar, S. DiSavino, & J. Resnick-Ault, Focus: Texas Freeze Delivers Billions in Profits to Gas and Power Sellers, Reuters (May 26, 2021).

<sup>8</sup> A. Swenson & A Lajka, Texas Blackouts Fuel False Claims About Renewable Energy, AP, (Feb. 17, 2021).

predict. In Winder Storm Elliot, PJM reported that in 90 percent of the failures, they had less than an hour's notice.<sup>9</sup>

Prices spiked during these storms, but we continue to pay the cost. One of the most significant drivers in the recent soaring capacity prices resulted from PJM applying a lower effective load-carrying capacity (ELCC) for gas plants. In PJM's planning, one megawatt of nameplate capacity is now worth considerably less, so they purchase more capacity. But, when this additional capacity is almost entirely gas, we are putting more eggs in the same basket.

### *The Path Forward*

When faced with reliability problems, it's no surprise our first instinct is to build more power plants, but building another 365-day-per-year plant to address a 3-day-per-year problem is an expensive solution that doesn't even address present needs. Instead, our immediate focus should be on increasing reliability at existing plants. As NRDC's Tom Rutigliano pointed out in testimony to the PA House Environmental Resources and Energy Committee last October, raising the capacity rating of gas plants from its current 76% to 90% through weatherization, backup fuels, and other investments would add 12.2 gigawatts of capacity, save billions of dollars, and erase any imminent capacity problems.<sup>10</sup>

In addition to improved reliability, another area in which we can see immediate results is by increasing our investments in energy efficiency, demand response, and other measures to reduce peak loads. Every year, the independent statewide evaluator for the Act 129 program finds additional measures that can provide savings at no net cost to consumers. But, because of the investment cap built into that program, these are not funded—legislation is needed to correct this.

Over the long term, additional new generation will likely be needed. To realize the benefits of diversification this means more than building new gas plants. The proposed reactivation of Three Mile Island is a unique opportunity in this regard, but beyond that, solar resources represent a key opportunity.

Solar is, in many cases, the least expensive new generation available today.<sup>11</sup> Perhaps more importantly, the price is much less subject to volatility caused by geopolitical events

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<sup>9</sup> PJM, Winter Storm Elliot Event Analysis & Recommendation Report (July 17, 2023).

<sup>10</sup> T. Rutigliano, Testimony of the Natural Resources Defense Council, Before the PA House ER&E Committee (Oct. 16, 2024).

<sup>11</sup> Lazard's Levelized Cost of Energy Analysis—Version 17.0 (Jun. 2024).

and economic shifts than gas and other fossil fuels.<sup>12</sup> This is of particular concern with projects currently being proposed to expand LNG exports and raise gas prices for PA consumers.<sup>13</sup> Aside from making financial sense, solar projects have another practical advantage: Solar represents the majority of the projects already in the PJM queue and projects that are most quickly deployable.

While energy generated from solar, wind, and other clean renewable sources varies throughout the day, it is increasingly playing a vital role in reliability and affordability. This has been particularly evident in Texas, the leading state in wind production and number two, behind California, in solar production. Indeed, Texans understand that renewable resources helped to keep the lights on during periods of high demand and saved consumers money in the process.<sup>14</sup>

This shouldn't be surprising. Our energy demand has always been volatile, and historical "baseload" resources like coal and nuclear were never designed to follow the demand. In the past, we relied on gas's flexibility to ramp up when needed to cover the last few megawatts. Winter Storm Elliot showed us that gas's flexibility is overstated, and our current understanding of "baseload" is insufficient. Instead, modern needs require a system with more options. With inexpensive solar and wind carrying as much load as possible, storage, demand response, and the remaining gas plants will be more able to adjust to volatile conditions.

Pennsylvania has long been the country's leader in innovation when it comes to electricity. The next generation of power is literally waiting in the queue to be unleashed, reducing energy costs, providing jobs, and improving our quality of life. It is time to ensure we are doing everything we can to deliver on that promise for Pennsylvania.

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<sup>12</sup> IEA, *Strategies for Affordable and Fair Clean Energy Transitions*, 65.

<sup>13</sup> A. Zibel, *Keystone Gas Gouge: Export Push Could Stick PA Consumers with \$16 Billion Bill*, Public Citizen (Nov. 25, 2024).

<sup>14</sup> J. Jacobo, "Solar, wind energy keeping Texas power grids running amid weekslong heat wave", ABC News, (Jul. 7, 2023).