

Homegrown Energy: Making the AI boom work for everyone

Executive summary

The AI boom is driving growth — and increasing costs

Hundreds of billions of dollars in private investment are flowing into PJM states to build the infrastructure behind the AI economy. This investment brings real opportunity: economic development, tax revenue, and a competitive edge in one of the world's fastest-growing sectors.

But it also brings a surge in electricity demand. Data centers are projected to add 30 gigawatts of new demand in PJM by 2030 — equivalent to the power needs of 20 million homes. Meeting that demand through traditional infrastructure alone would require hundreds of billions of dollars in grid upgrades, potentially raising the average household energy bill by \$840 per year.

Communities are already pushing back, delaying projects, and enacting moratoriums. And even where data centers have community support, the system isn't keeping up. Interconnection timelines for new large loads now stretch 3–7 years, jeopardizing local jobs and economic activity.

Efforts to ensure data centers pay their fair share are a necessary starting point. **But preventing harm is not the same as delivering benefit. If communities are going to support this level of growth — and if states are going to capture its economic upside — they need a solution that delivers tangible benefits to households and enables faster, more certain speed to power.**

A new approach: Homegrown Energy

Homegrown Energy offers a different path: using the growth of the AI economy to invest in household-level upgrades that strengthen the grid from the bottom up.

Under this model, states set targets for meeting new demand with distributed resources — including weatherization, high-efficiency heat pumps, solar, storage, and virtual power plants — and establish policy frameworks that enable and incentivize hyperscalers to invest. Hyperscalers then fund these upgrades, creating measurable grid capacity while lowering household energy bills and strengthening communities. In return, they receive credit for that capacity along with faster, more certain speed to power.

The opportunity is massive. Across PJM, residential upgrades alone could provide at least 49 GW of capacity — roughly 1.6 times projected data center demand growth. When combined with additional potential in communities, businesses, and institutions, the total distributed capacity available far exceeds expected new load. This means states can set ambitious targets with confidence.

Homegrown Energy is a win-win-win solution.

Hyperscalers invest in distributed energy.

Win

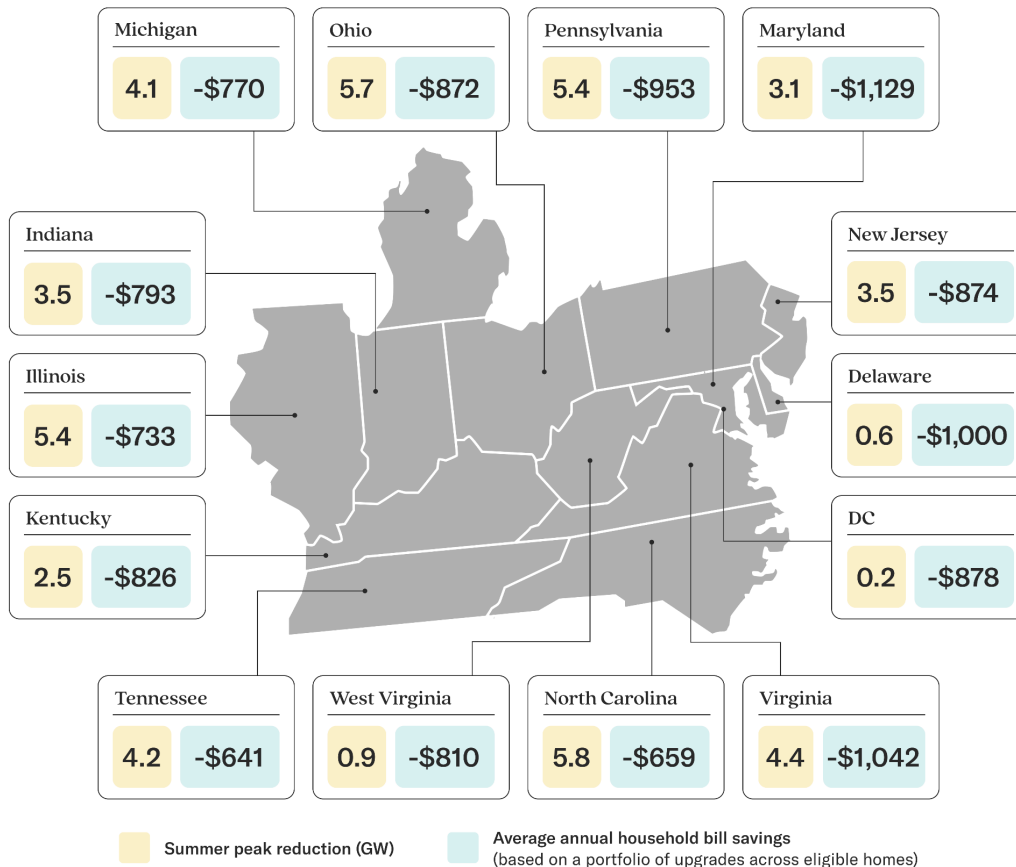
PJM provides accelerated interconnection.

Win

Households see lower costs and tangible benefits.

Win

Homegrown Energy: More capacity, lower bills



⚡ What governors can do

Governors can take three actions to unlock Homegrown Energy:

1. Set a Homegrown Energy target. Establish goals — both within individual states and across a coalition of PJM governors — to link data center growth with the deployment of distributed energy

resources and household upgrades. States could aim to meet at least half of new data center electricity demand through distributed resources, with a meaningful share (e.g., 25 percent) directed toward residential upgrades.

2. Create clear investment pathways. Work with state legislators and public utility commissions (PUCs) to establish tariffs or other mechanisms that allow, enable, and incentivize hyperscalers to invest in distributed resource portfolios.

3. Ensure distributed capacity is fully valued. Encourage PJM to fully accredit distributed resources, enable their participation in wholesale markets, and incorporate them into planning and reliability frameworks.

With the right framework in place, governors can turn data center growth into a catalyst for lower energy bills, faster interconnection, and stronger communities — ensuring that the AI boom works for everyone.

Delivering value to every stakeholder

Because PJM operates a shared regional grid, the benefits of distributed resource investments extend across state lines. Coordinated action allows states to move in the same direction, creating the scale and market certainty needed to turn isolated programs into a durable regional strategy.

For households and communities, Homegrown Energy delivers immediate, visible benefits. Across PJM, a representative portfolio of home energy upgrades can reduce average household energy costs by \$850 per year. For homes with the greatest opportunity for savings — those using electric resistance heating — installing heat pumps, weatherization, solar, and storage can reduce costs by \$2,900 per year. These investments also improve comfort, air quality, and resilience and support local economic development, creating up to 375,000 durable, skilled-trade jobs in PJM.

For the electricity system, distributed energy resources (DERs) provide grid services at lower cost, deferring expensive infrastructure upgrades. By reducing peak demand, DERs can also reduce the amount of capacity PJM must procure, putting downward pressure on prices across the region. Together, these effects can lower system costs by 20–40 percent, helping protect all ratepayers from rising bills. Distributed resource investments also hedge against uncertainty in load forecasts, delivering value regardless of how much demand ultimately materializes.

For data centers, DERs can be deployed far more quickly than traditional infrastructure, helping projects connect to the grid sooner and reducing development risk. Faster timelines carry significant economic value, and investments in community energy upgrades help secure the local support that projects increasingly require.

The following policy memo provides additional detail on the Homegrown Energy framework and specific actions states can take to implement it.

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Policy framework and recommendations

⚡ Background: The Ratepayer Protection Pledge and the need for state action

In the 2026 State of the Union, President Trump announced a “Ratepayer Protection Pledge,” under which major tech companies have since committed to “build, bring, or buy all of the energy needed for building and operating data centers.”

The core principle behind the pledge — that new large loads should not socialize their costs onto other customers — is sound. But voluntary commitments from hyperscalers to bring their own power are unlikely to fully protect ratepayers or strengthen the grid. At best, the pledge may slow bill increases, but slowing increases is not the same as lowering energy bills for PJM households.

This challenge is especially acute within the PJM Interconnection. Across the region, data centers are projected to add 30 gigawatts of new electricity demand by 2030 (roughly one-fifth of PJM’s current peak load),¹ which has already sent capacity prices and infrastructure planning costs soaring by up to 1,000 percent in two years as peak forecasts outpace available firm resources.

Meeting that demand through traditional infrastructure alone would require hundreds of billions of dollars in generation, transmission, and distribution upgrades, potentially raising the average household energy bill by \$840 per year. It would also take too long, limiting states’ ability to capture the economic benefits of the AI boom. And if hyperscale development slows, utilities could be left with overbuilt infrastructure and ratepayers bearing the cost of unused assets.

The status quo is not working for hyperscalers, either: PJM’s interconnection process now stretches 3-7 years for new large loads, jeopardizing local jobs, tax revenue, and economic activity. These delays are already pushing developers to invest elsewhere or pursue self-supply strategies that may enable faster interconnection but do little to relieve broader system strain.

Ultimately, state policymakers have both the authority and the responsibility to ensure that households directly benefit from the AI boom. **The challenge — and opportunity — is to coordinate across PJM and structure hyperscale demand in ways that accelerate energy supply, strengthen the grid, and ensure that the benefits of AI-driven growth extend to households and communities.**

¹ PJM estimated roughly 30 GW of new data center demand by 2030 in August 2025. More recent tallies of hyperscale data center announcements suggest potential demand exceeding 80 GW by 2030, highlighting the rapidly evolving scale of projected load growth.

A Homegrown Energy framework for hyperscale growth

Several PJM states have begun moving beyond voluntary commitments toward enforceable guardrails for data center growth. At minimum, these guardrails should include measures to reduce the risk to other ratepayers and ensure that new facilities pay for the infrastructure they require, including interconnection upgrades and other incremental system costs.

But policymakers can go further. The rapid growth of artificial intelligence infrastructure presents a rare opportunity to direct large-scale private capital into distributed energy resources that strengthen the grid and deliver tangible benefits to households.

A **Homegrown Energy framework** builds on baseline guardrails by establishing clear goals for how new demand will be met and pairing them with strong incentives for hyperscalers. States set targets for distributed capacity and create incentives to support hyperscalers that meet them. Hyperscalers, in turn, fund distributed energy investments across PJM and receive credit for the capacity those investments create, along with faster, more certain speed to power. This positions distributed investments not as ancillary benefits, but as a core input into data center development.

Under this framework, states can set targets and enabling policies to:

- **Meet at least half of new data center electricity demand through distributed resources**, including household, community, commercial, and industrial programs.
- **Direct a substantial portion of that investment — e.g., 25 percent of total capacity — toward residential upgrades**, including energy efficiency, solar, and storage.
- **Meet remaining demand through new clean generation and other firm resources** to ensure long-term reliability and continued system development.

States can set these targets with confidence: across PJM, residential upgrades alone could provide roughly 49 GW of flexible capacity — more than enough to meet projected demand growth — with additional potential from community, commercial, and industrial resources.

Homegrown Energy should be understood as a core component of a broader portfolio of solutions that reduce near-term system pressure while continuing to deliver value as the grid evolves. Household- and community-based resources can be deployed quickly and at scale — alongside tools like behind-the-meter storage and data center load flexibility — to create immediate grid headroom and accelerate interconnection timelines.

Over time, as markets and regulatory frameworks evolve to better value distributed capacity, these investments can become a durable component of a more flexible and resilient energy system.

Implementation: What governors can do

Realizing these benefits will require clear policy direction and coordination across PJM states. Governors and state policymakers can collaborate with utilities and hyperscalers, establish shared goals, implement state-level mechanisms that channel investment toward distributed capacity, and push for reforms within PJM. Importantly, states do not need to wait for full market reform to begin enacting Homegrown Energy or partnering with hyperscalers to scale distributed capacity.

Three complementary actions can enable this transition today.

1. Set a Homegrown Energy target:

Governors can establish shared goals — both within individual states and across PJM — to meet a substantial portion of data center load growth through household- and community-based resources. For example, states could aim to meet at least half of new demand through distributed resources, with a meaningful share (e.g., 25 percent) directed toward residential upgrades. Given that the technical potential of household resources alone exceeds projected load growth, these targets can and should be ambitious.

Critically, states can pair their targets with faster, more certain permitting, procurement, and interconnection pathways for projects that deploy DERs, creating a clear incentive for hyperscalers to invest. The following design principles can help ensure effective implementation:

Regional deployment: Deploy DERs within the same load zone as the data center location — and where possible within constrained transmission or distribution areas — so that investments relieve the same system pressures created by hyperscale growth.

Additionality: Require incremental investment in demand-side portfolios rather than displacing utility programs, capturing only the lowest-cost resources, or shifting early development risk to the general rate base. Hyperscaler investment should expand the overall pool of resources deployed.

Comprehensive portfolios of distributed resources: Include both dispatchable DERs and energy efficiency upgrades, such as replacing inefficient electric-resistance heating with heat pumps.

Performance-based: Reward capacity delivered to the grid and transmission/distribution infrastructure avoided, rather than dollars spent or equipment installed.

Flexible compliance pathways: Allow developers to meet targets through multiple channels, including third-party aggregators and utility-run programs.

2. Create clear investment pathways:

Governors can work with state legislators and public utility commissions (PUCs) to establish tariffs or other mechanisms that allow, enable, and incentivize hyperscalers to fund distributed resource portfolios in exchange for verifiable incremental grid capacity credits. These policies include:

Large-load tariffs: Many states are establishing large-load tariffs (LLTs) to ensure that new data centers pay for the infrastructure they require and do not pass costs on to existing customers. To date, however, most LLTs have been designed to minimize risk, with limited incentives for flexibility or grid services. States can build on this foundation by expanding LLTs to serve as the primary hyperscaler incentive structure for Homegrown Energy, linking faster, more certain speed to power with investments in DERs and household upgrades. Several PJM states already have — or are actively considering — large-load tariffs that could be expanded to incorporate these elements.

Flexible procurement pathways: To operationalize these incentives, policymakers and regulators can authorize mechanisms that allow hyperscalers to meet distributed capacity targets. These include bring-your-own-distributed-capacity (BYODC) structures and clean transition tariffs that enable large customers to directly procure distributed-resource portfolios or fund expansions of existing ratepayer-funded programs, ensuring investments are aligned with system needs.

Early examples are already emerging. Under a recent agreement between Google and Xcel Energy in Minnesota, Google will fund a \$50 million expansion of Xcel's Capacity*Connect program, which deploys distributed batteries to relieve congestion and defer infrastructure upgrades, alongside additional investments in large-scale generation and storage. Separately, proposed legislation in Illinois would explicitly allow data center developers to meet bring-your-own-capacity requirements through distributed and demand-side resources.

Non-bypassable system benefit charges: A complementary approach is to assess non-bypassable charges on data centers, with revenues dedicated to distributed resource investments — particularly for low-income households. Basing these charges on interconnection peak demand ensures data centers contribute fairly even when co-located generation or storage reduces their metered load. Paired with BYODC or clean transition tariffs, system benefit charges provide a floor for demand-side investment while preserving flexibility in how developers meet broader distributed capacity goals. At a time when affordability pressures are prompting some states to scale back such programs, this approach helps sustain energy-efficiency investments while reducing the burden on ratepayers by leveraging hyperscaler capital. Several states are already advancing this model.²

² In Minnesota, legislation enacted in 2025 requires large data centers to pay an annual fee of \$2–\$5 million, depending on facility size, to fund state-administered energy efficiency upgrades for low-income households. Proposed legislation in Illinois would similarly assess fees of \$2–\$12 million on hyperscale data centers to support energy affordability and grid modernization programs.

Additional enabling policies: Scaling the Homegrown Energy framework will require complementary policy reforms to accelerate the deployment of distributed resources. States can:

- Set measurement, verification, and accreditation rules for hyperscaler investments in DERs;
- Ensure DERs are evaluated alongside traditional infrastructure investments in utility planning, compensated for their distribution value, and allowed to participate fully in retail programs and rate structures;
- Allow DER aggregators to reduce peak load contributions based on their net system impact — including exports to the grid — and to aggregate those impacts across customers;
- Establish clear implementation frameworks so utilities, aggregators, and third parties can coordinate effectively, with PUC oversight to ensure DERs are incorporated into load forecasting and system planning; and
- Enable standardized enrollment and interoperable data access to reduce participation barriers.

These policies can unlock significant near-term value from DERs — reducing peak demand, avoiding expensive new infrastructure, and lowering future capacity needs in PJM markets.

3. Ensure distributed capacity is fully valued:

Because PJM operates a shared regional bulk power system, state action alone cannot unlock the full value of household- and community-based resources. Governors can work together — alongside participating hyperscalers — to ensure PJM’s market rules and planning processes fully recognize and compensate the grid services provided by distributed energy resources.

At a high level, PJM should:

Accredit distributed capacity in markets and planning: PJM should accelerate implementation of FERC Order 2222 and establish clear rules for how aggregated DERs participate in wholesale markets. Distributed portfolios that deliver reliable peak reductions should be treated as eligible resources to provide multiple grid services, including capacity, energy, and ancillary services, analogous to supply-side infrastructure.

Remove participation barriers: Current rules often prevent customer-sited solar-plus-storage from participating in energy and capacity markets, particularly when those resources operate under retail tariffs like net metering. PJM should adopt accounting approaches that avoid double compensation while still allowing these resources to be paid for the grid services they deliver. PJM should also work with states and utilities to streamline coordination at the retail-wholesale interface, ensure access to smart meter data, and simplify requirements to make DER aggregation practical at scale.

Recognize durable demand reduction: PJM should fully account for energy efficiency improvements and behind-the-meter solar in load forecasts and planning processes, reflecting their impact on system demand and ensuring they reduce overall capacity needs.

Credit early investments: PJM should ensure that resources deployed under the Homegrown Energy framework can receive timely and predictable credit for the grid services they provide, even as participation rules continue to evolve, so early hyperscaler investments are not penalized.

Together, these actions position distributed capacity as core infrastructure to meet new demand.

Homegrown Energy value for stakeholders

Because PJM operates a shared regional transmission system, the benefits of distributed energy investments extend beyond any single state. Reducing peak demand in one part of the PJM footprint can lower zonal capacity procurement obligations, putting downward pressure on clearing prices across the region. Likewise, the costs of failing to manage hyperscale demand — higher infrastructure spending, rising capacity prices, and reliability risks — will ultimately be shared throughout PJM.

As more states move in the same direction, it becomes easier for utilities, regulators, and developers to build repeatable models that strengthen the grid and deliver public benefit. A coordinated Homegrown Energy framework provides the scale, consistency, and market direction needed to turn isolated pilots into a durable regional approach. It also creates distinct and lasting value for households, host communities, the electricity system, and hyperscalers.

For households and host communities, hyperscaler investments in distributed capacity translate into tangible upgrades that immediately reduce energy bills, improve comfort and indoor air quality, and increase resilience during extreme weather events and grid outages. Across PJM, home energy upgrades can reduce average household energy costs by roughly \$850 per year. For households with the greatest savings potential — those relying on electric resistance heating — pairing heat pumps and weatherization with solar and storage can cut average energy costs by \$2,900 annually.

These investments can also support local economic development, creating up to 375,000 new, durable jobs in PJM. Most of these jobs will be in the skilled trades: electricians, HVAC technicians, plumbers, and solar installers who live and work in the neighborhoods they serve.

At the same time, enabling data center development without driving up energy costs allows communities to capture the economic benefits of the AI boom, including new tax revenue and jobs.

For the electricity system, DERs can provide grid services more quickly and at lower cost than traditional infrastructure projects, reducing peak demand and deferring transmission and distribution expansion. These deferrals can reduce the system costs of data center development by

20–40 percent. More broadly, scaling flexible distributed capacity could save \$10 billion per year nationwide by avoiding new infrastructure and peak generation. Together, these savings help insulate all ratepayers from upward pressure on electricity bills.

Distributed investments also hedge against the risk of overbuilding infrastructure based on uncertain data center load forecasts. Household electrification and efficiency upgrades deliver permanent system benefits and preserve optionality regardless of how much new load ultimately comes online.

For data centers, distributed investments can significantly accelerate speed to power. Large-scale generation and transmission projects can take up to a decade to permit, finance, and interconnect in congested regions, while DERs can be deployed in 6–24 months to reduce peak demand or meet incremental capacity needs — allowing data center projects to come online years sooner. These investments can also strengthen community support and provide data center developers with a “license to operate” at a time when local opposition to hyperscale facilities is increasing nationwide.

Faster interconnection carries significant economic value: bringing a 500 MW data center in PJM online 3–5 years earlier can generate \$0.9–\$4.3 billion in net returns, even after accounting for potentially higher procurement costs. These advantages can justify paying a premium for distributed resources relative to conventional alternatives — reflecting their value as infrastructure that enables faster, more certain project delivery, rather than as negotiated community benefits.

Bottom line

The rapid growth of data center infrastructure presents a defining opportunity for PJM — and for the United States — to lead the next era of economic growth.

States that can deliver reliable, affordable, and abundant energy will attract investment, create jobs, and strengthen technological leadership. But capturing that opportunity will require expanding energy supply and modernizing the electricity grid at unprecedented speed and scale. Today, the system is not keeping pace, and relying solely on large-scale generation and transmission risks delaying projects, driving up energy costs, and fueling community backlash.

Meeting this moment will require investing in Homegrown Energy. Done right, this approach can lower household energy bills, strengthen the grid, and unlock faster interconnection. By setting ambitious targets, implementing frameworks that channel hyperscaler investment into distributed capacity, and coordinating across PJM, governors can ensure the AI boom works for everyone.