DATA CENTER ELECTRICITY

ISSUE BRIEFS

CLIMATE MAYORS

IMPACT OF DATA CENTERS ON ELECTRICITY SYSTEMS IN THE US

Data centers typically operate around the clock and require large amounts of dedicated electricity. The average data center capacity is 62 megawatts (MW), enough power to supply about 40,000 to 50,000 typical American homes continuously. [i] Data centers represented 4.4% of total U.S. electrical consumption in 2023 and are projected to grow to almost 12% by 2030. [ii] The International Energy Agency (IEA) projects that data centers will account for half of all growth in U.S. electrical demand by 2030. [iii] This growth will not be evenly distributed. In PJM, the grid region serving 13 states and Washington, D.C., data center load could increase by up to 30 GW between 2025 and 2030, enough to power 22.5 million American homes. [iv]

Data centers do not automatically raise electricity rates. Still, they can increase the amount of generation and grid infrastructure required to serve them, as well as the costs of maintaining broader grid reliability. Whether those costs are paid by data centers, utilities, or other customers depends on state utility regulations and rate design. Without strong tariffs or agreements that assign these costs to large new loads, households and small businesses can be left paying for these assets. [v]

Energy choices also shape climate and reliability outcomes. Rapid load growth can delay fossil-plant retirements, justify new fossil generation, and encourage onsite gas and diesel systems. The IEA estimates that more than 65% of the electricity physically serving U.S. data centers comes from natural gas or coal. Additionally, CO2 emissions tied to data centers could increase by 70% over the next decade, under the IEA's base case scenario. [vi][vii]

Cities and utilities can use permit approvals, tariffs, and negotiated agreements to secure additional clean energy, storage, high-efficiency design, and investments that reduce system-wide electricity demand. A 2026 analysis found that data center operators paying for programs that help reduce strain on the grid during high demand, coupled with programs that support energy efficiency, heat pumps, and community solar plus storage, could collectively unlock approximately 1.4 GW of summer peak capacity across four U.S. metropolitan areas, while reducing household energy bills and emissions. [viii]

Cities can set clear expectations for affordable, reliable, and clean energy before approving a project. Cities should seek the following outcomes:

NO COST-SHIFTING TO RESIDENTS:

Data centers should pay the full cost of new generation, substations, feeders, transmission, and other infrastructure needed to serve them.

RELIABLE, EFFICIENT OPERATIONS:

Projects should demonstrate available grid capacity, minimize peak demand, and meet best-in-class Power Usage Effectiveness (PUE) targets.

ADDITIONAL CLEAN ENERGY AND ACCOUNTABILITY:

New loads should be matched with additional clean energy on the grid and/or for avoidance of doubt with public reporting on energy use, procurement, PUE, curtailment, and onsite generation.

To achieve these outcomes, **cities must coordinate with municipal or investor-owned utilities, state public utility commissions, grid operators, neighboring jurisdictions, and major employers. In some cases, cities may wish to negotiate directly with hyperscalers to secure community energy programs.** The available levers will differ by local utility structure: cities that own or govern a municipal utility may have direct influence over rates, service requirements, resource planning, and infrastructure investment, while cities served by investor-owned utilities will often need to work through state regulatory proceedings, utility negotiations, and land-use approvals. Electricity infrastructure and wholesale markets span city boundaries, and developers often compare multiple sites to secure fast access to power. **Cities have the greatest influence before zoning, utility-service, interconnection, and incentive approvals are granted.** After those milestones, cities retain enforcement and advocacy tools but have less leverage to shape who pays, what gets built, and how the facility operates.

KEY CITY ACTIONS

Screen grid capacity, affordability, and cumulative impacts.

- Require an independent analysis of current and planned large loads, peak demand, generation and transmission needs, local reliability, rate impacts, and stranded-asset risk; make the developer pay and publish the findings.

Condition approvals on a credible power plan.

- Require demonstrated utility capacity and ability to serve, defined interconnection upgrades and a schedule, plus written confirmation that project-caused costs will not be shifted to residential or small business customers.

Make the project pay its full system costs.

- Use special tariffs, development agreements, or permit conditions to require developer-funded generation, substations, feeders, and transmission; include minimum demand, exit fees, or financial security where appropriate.

Require efficient, clean, and grid-supportive operations

- Set PUE and energy-performance targets; require additional clean energy on the same regional grid, onsite storage, flexible load and demand response that does not rely on polluting backup generators. Cities can also negotiate developer funding for community energy programs, such as demand response, energy efficiency, heat pumps, and distributed solar and storage, that reduce system-wide peak demand and lower household energy costs.

Mandate transparent monitoring and reporting.

- Require annual public reports on electricity use, peak demand, PUE, clean energy procurement, storage, curtailment, backup-generator operation, and compliance with ratepayer protections.

Coordinate with utilities, regulators, and peer cities.

- Participate in integrated resource planning and tariff proceedings, align regional minimum standards, and push for cost-causation, clean energy, and consumer-protection requirements.

MAYFIELD BOROUGH, PA: MAKE RATEPAYER PROTECTION A PERMIT CONDITION

Mayfield Borough adopted Ordinance No. 2025-14 in December 2025, making data centers a conditional use in its commercial district and placing demonstrated grid capacity at the center of approval. [ix] **Any data center applicant connecting to the grid must provide documentation from the electric provider certifying that capacity is available and that the provider will serve the facility.** Known impacts on electric rates or availability for other users must be disclosed. The ordinance goes beyond a standard "will-serve" letter. **It requires an interconnection agreement to st**ate that the data center owner will pay any costs imposed on residential customers within the borough. Any new generation system built to supply the data center during normal operations (as opposed to backup power) is treated as a separate land use, preventing onsite power from being approved automatically as part of the data center permit. Mayfield translates an abstract no-cost-shifting goal into a clear, enforceable approval condition. **Other cities may require the same elements before approving a project, including proof of available power capacity, disclosure of rate and reliability impacts, assignment of responsibility for upgrades, and a binding commitment that residents will not pay project-related costs.**

LANCASTER, PA: LEVERAGE A CBA FOR CLEAN ENERGY AND COMMUNITY BENEFITS


Lancaster, PA

Lancaster negotiated a Community Benefits Agreement for the planned Lancaster AI Hub, which the City describes as three data-center buildings across two campuses. [x][xi] **The agreement says all data-center buildings will use 100% clean energy electricity.** Owners may use long-term energy contracts below 100% clean energy only if they make significant contributions to a contingent clean energy fund. The agreement requires an annual public presentation to the City Council on each building's clean energy use and compliance. It also secures **$10 million for a City-managed Sustainable Development and Clean Energy Fund,** paid in $2.5 million installments as construction financing and operations begin for each phase, alongside a separate $10 million economic-development fund. The agreement requires financial security, including a $20 million letter of credit (or an acceptable corporate guarantee) to support certain community-benefit obligations, and separate financial security for specified clean-energy commitments. [x][xi] Lancaster shows how a city can pair project-specific energy requirements with reporting, enforcement, and community investment when it cannot directly set utility rates or generation policy. Other cities can use development agreements or CBAs to define acceptable clean-energy procurement, require annual disclosure, fund local efficiency and resilience priorities, and secure commitments before land-use approvals are finalized.

LAGRANGE, GA: DATA CENTER INVESTMENTS TO LOWER HOUSEHOLD ENERGY BILLS

Google announced plans in April 2026 for a new data center in LaGrange, where the City owns and operates the electric utility. Alongside the project, Google committed **$1 million to expand Groundswell's SOUL® (Save On Utilities Long-Term) program,** which LaGrange launched with Groundswell and EEtility in 2020 to invest in residential energy efficiency. Google's funding is expected to provide no-cost home repairs and energy-efficiency upgrades to **at least 50 income-qualified homeowners in the city.** [xii][xiii] Groundswell expects the $1 million contribution to leverage approximately **$700,000 in Georgia Environmental Finance Authority energy-efficiency rebates,** bringing the total investment to about **$1.7 million.**

Eligible work includes insulation, air sealing, electrical upgrades, heat pumps and other HVAC improvements, plumbing repairs, and roof replacement. The repair component is important: Groundswell reports that 53% of homes enrolled in SOUL require repairs before efficiency improvements can be made. The program has achieved an average **34% improvement in energy efficiency.** Google also said it will cover the full cost of power for the data center and infrastructure needs driven by its operations rather than pass those costs to local families. [xii][xiv] LaGrange shows how cities can pair protections against project-related energy costs with **direct investment in household energy affordability**. Rather than create a new program, cities can seek developer funding for established local programs, target households facing high energy burdens, fund the home repairs needed to unlock efficiency improvements, and structure contributions to leverage additional public funding. The key is to connect community-benefit investment to measurable, durable reductions in residents' energy use and bills.

ENDNOTES

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DATA CENTERS AND THE CLIMATE LANDSCAPE

AN ACTIONABLE RESOURCE FOR US MAYORS

CLIMATE MAYORS

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