States' emerging climate dilemma: Data centers

By Adam Aton | 06/04/2024 06:21 AM EDT

The sector's boom is one reason U.S. energy demand is projected to grow significantly for the first time in decades.

Traffic passes data centers in Ashburn, Virginia. The centers house the computer servers and hardware required to support modern internet use, including artificial intelligence. Ted Shaffrey/AP

When Michigan state Rep. Joey Andrews describes the pros and cons of attracting data centers to his state — they're a boon to property taxes but a drain on the electrical grid — he ultimately returns to one point: There's no stopping them.

"We can't put this genie back in the bottle," said Andrews, who is sponsoring legislation to offer data centers a sales tax exemption. That has pitted the Democratic lawmaker, who also owns a solar installation company, against environmental advocates who warn that power-thirsty data centers could overwhelm the state's renewable energy targets.

But with climate tech going increasingly digital, Andrews argues that activists need to get used to these kinds of trade-offs.

"Everything we're doing to fight climate change requires more energy production," he said. "We have to constantly be scaling our energy production to meet the increased energy demands of decarbonizing — which, you know, seems counterproductive. But that's the way it is."

From Lansing to Annapolis to Atlanta, this year has seen the data center sector advance favorable policies — such as tax exemptions — or beat back efforts to restrict their growth. The industry's expansion is one of the main reasons U.S. energy demand is projected to grow significantly (https://gridstrategiesllc.com/wp-content/uploads/2023/12/National-Load-Growth-Report-2023.pdf) for the first time in decades (https://subscriber.politicopro.com/article/eenews/2024/06/03/emissions-plateau-as-coal-retirements-slow-00160838). And many utilities are responding with proposals to burn more fossil fuels, sometimes at a greater cost to ratepayers.

That's ringing alarm bells for climate hawks as well as some Republicans. But the concerns haven't stalled the industry's advance — especially in states trying to position themselves on the cutting edge of the energy transition. And the industry says that while data center companies have strong climate goals themselves, it's up to utilities to manage the electricity sector's emissions.

"We're in a unique moment," said Tyler Norris, a former renewable energy executive who now researches energy systems at Duke University. "At the same time that we have this [electricity] load growth, we're attempting to decarbonize the power system and integrate all of these new technologies. So I think it's probably one of the most complex moments of load growth that we've probably ever faced."

In Michigan, lawmakers are close to passing a pair of data center tax exemptions, including Andrews' bill. After environmental groups objected to offering tax breaks without conditions on their climate impacts, lawmakers amended the bill to say the Legislature "encourages" such data centers to use renewable energy. But that change did not mollify progressives who want to see Democrats tie incentives to binding climate and environmental standards.

Denise Keele, executive director of the Michigan Climate Action Network, said Michigan risks falling into the same pattern as other states that have attracted data centers.

"We've seen in other states that these moments of energy and electricity [demand] surges are then used as moments to excuse our climate goals," she said last month at a press conference with other green groups and local officials. The effect, she said, would be "to continue to rely on carbon-polluting sources like oil and gas, just when we need to move and end the era of fossil fuels."

In Maryland, after a data center developer last year said it would cancel a 3-million-square-foot project after state regulators rejected its plan for 168 diesel backup generators (https://www.datacenterdynamics.com/en/news/maryland-denies-aligned-data-centers-exemption-for-168-diesel-gens-at-quantum-loophole-campus/), citing their emissions, Democratic Gov. Wes Moore proposed exempting data centers from some environmental reviews.

Over the objections of green groups (https://insideclimatenews.org/news/15032024/maryland-governor-wes-moore-data-center-bill/) like the Maryland League of Conservation Voters — which noted the legislation would be the only major climate bill Moore backed this year, and it would increase emissions — the Legislature passed the bill and Moore signed it last month.

Moore's spokesperson said the governor is committed to modernizing the state's economy and that data centers still would be subject to the same emissions standards as other regulated facilities.

"Maryland does not have to choose between making a cleaner home for everyone and preparing for the cyber challenges ahead, and the governor is committed to tackling both," said Carter Elliott IV, the governor's senior press secretary.

In Virginia, where more than half the world's data centers are based, over a dozen bills that would have restricted data centers were shelved, according to the *Virginia Mercury* (https://virginiamercury.com/2024/05/28/virginia-explained-data-center-expansion-with-all-its-challenges-and-benefits/), while the Joint Legislative Audit Review Commission studies the issue.

Dominion Energy, the state's biggest utility, is proposing to add new gas plants to its long-term plans in order to meet data centers' energy demands. In 2022, it noted, the state's data centers reached a peak load of 2.8 gigawatts — 1 ½ times the capacity of Dominion's North Anna Nuclear Generating Station.

"The data center industry is one of the fastest growing industries worldwide. In the Company's service territory, the industry has grown on average 0.5 GW a year in the last three years," Dominion wrote (https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/company/2023-va-integrated-resource-plan.pdf). "Since 2019, the Company has connected 75 data centers with an eventual capacity of 3 GW. These data centers will ramp up to this capacity over time, so the Company expects this growth to materialize over the next 3 to 5 years."

A similar story is playing out nationwide. Over 2023 alone, grid planners nearly doubled their load-growth forecasts to 38 GW over the next five years, according to a report (https://gridstrategiesllc.com/wp-content/uploads/2023/12/National-Load-Growth-Report-2023.pdf) by the consulting firm Grid Strategies. That new growth — driven in large part by data centers — raises the possibility that "some regions may miss out on economic development opportunities because the grid can't keep up."

South Carolina lawmakers this year considered blocking data centers from discounted power rates, according to the *South Carolina Daily Gazette*, (https://scdailygazette.com/2024/04/15/data-centers-need-massive-amounts-of-energy-what-does-that-mean-for-sc/) but that proposal was killed in a Senate committee after it passed the House.

And in Georgia, where utility regulators in April approved a plan (https://georgiarecorder.com/2024/04/16/state-utility-regulators-approve-georgia-power-plan-to-use-fossil-fuels-to-power-data-centers/) to add gas capacity to meet electricity demand from data centers, lawmakers passed a bill to freeze tax incentives for data centers for two years.

Republican Gov. Brian Kemp vetoed that bill. Noting that lawmakers recently had extended those same tax exemptions, the governor said pausing them would undermine business investment.

The Republican state lawmakers behind Georgia's bill say they aren't sure if data centers are bringing enough jobs and economic development to the state to justify their costs.

Republican state Rep. Shaw Blackmon, chair of the Georgia House's Ways and Means Committee, said policymakers still need more information to determine if data centers are a good investment for the state — a question that's not confined to Georgia.

"Worldwide, these discussions are going on in a lot of different places," Blackmon said.

The data center industry has responded to criticism of its energy demand by pointing out that cutting emissions will rely on technology that relies on data — either through direct links, like smart thermometers, or simply through increasing efficiencies elsewhere in the economy.

Josh Levi, president of the Data Center Coalition, said data centers are among the biggest direct purchasers of renewable energy contracts and that the industry sees its future as enabling other sectors to decarbonize.

"Many states have recognized that data centers are highly efficient facilities that enable energy savings and efficiencies for homes, businesses, utilities and other end users," he said. "While grid planning and management is ultimately the role of utilities and grid operators in individual states and markets, the data center industry is committed to leaning in as an engaged partner."

Analysts have found that electricity availability (https://www.cbre.com/insights/reports/north-america-data-center-trends-h2-2023) is one key driver of data center siting. Utilities would have an easier time coping with the increased demand, and would risk fewer emissions, if data centers could add flexibility to their energy demand, Duke's Norris said. That's because electrical systems are designed to respond to their highest demand at short notice, even if those conditions might only arise once a year or less.

But data center companies are resistant to agreeing to load flexibility, because it could mean potential outages for information systems that demand reliability.

The result, Norris said, has been utilities proposing the kind of combined-cycle gas plants that would lock in significant emissions for years.

"The overall system is responding to new loads by adding large volumes of fossil-generated capacity," he said. "That's a problem for emissions."

RELATED ARTICLES

ENERGYWIRE (HTTPS://WWW.EENEWS.NET/PUBLICATION/ENERGYWIRE/)

Bitcoin in the Permian? Data centers test Texas grid. (https://www.eenews.net/articles/bitcoin-in-the-permian-data-centers-test-texas-grid/)

BY SHELBY WEBB | 06/03/2024 06:55 AM EDT

CLIMATEWIRE (HTTPS://WWW.EENEWS.NET/PUBLICATION/CLIMATEWIRE/)

Michigan considers subsidies for power-hungry data centers (https://www.eenews.net/articles/michigan-considers-subsidies-for-power-hungry-data-centers/)

BY ADAM ATON | 05/15/2024 06:46 AM EDT

ENERGYWIRE (HTTPS://WWW.EENEWS.NET/PUBLICATION/ENERGYWIRE/)

Data centers may use 9 percent of US electricity by 2030, report finds (https://www.eenews.net/articles/data-centers-may-use-9-percent-of-us-electricity-by-2030-report-finds/)

BY JACK QUINN | 05/31/2024 06:24 AM EDT

ENERGYWIRE (HTTPS://WWW.EENEWS.NET/PUBLICATION/ENERGYWIRE/)

Tech companies are shopping for nuclear power to run new data centers (https://www.eenews.net/articles/tech-companies-are-shopping-for-nuclear-power-to-run-new-data-centers/)

BY CATHERINE MOREHOUSE | 04/19/2024 06:30 AM EDT