

The Impacts of Data Centers *continued*

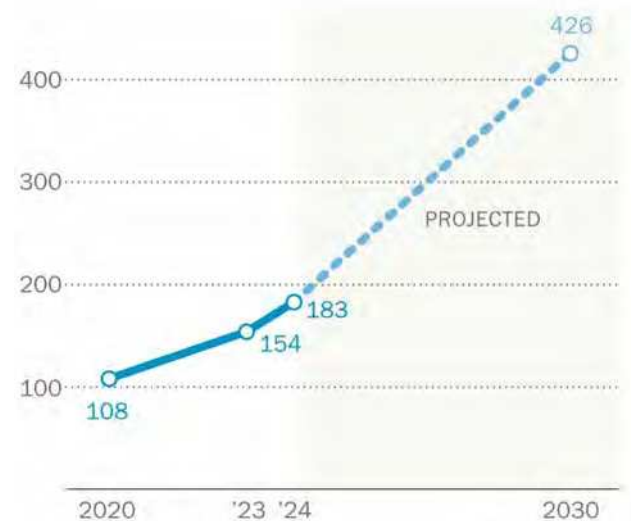
Existing electrical generating capacity is usually not sufficient to power these facilities, so new generating sources need to be constructed adjacent to sites, or at other locations requiring new transmission lines and substations. In some cases renewable energy sources, particularly solar arrays, are being constructed to supply some of the needed power, but because data centers require power 24 hours a day, very large other energy sources are generally needed.

Energy demand for data centers has raised several important issues:

- Because of the speed at which data centers are being developed, new generating facilities cannot come online fast enough to supply the needed power, so old, polluting, and inefficient fossil-fuel power plants that were scheduled to be retired are being kept in operation.
- Some companies and developers have made commitments for the use of renewable energy to power data centers and co-location of solar power generation is taking place, particularly in the West. While solar power has no emissions, it changes land use, including displacing active farm and ranch land.
- Gas-fired generating plants are the easiest to construct, but while they have lower conventional and greenhouse gas emissions than coal plants, they still represent a net increase in emissions. They also require new gas pipelines and electricity transmissions corridors.
- There is much talk of small modular nuclear generating plants and restarting closed conventional nuclear plants, but these energy

Electricity Consumption at U.S. Data Centers is Expected to More Than Double by 2030

Total electricity consumption by U.S. data centers (terawatt-hours)



Note: 2030 projection is based on IEA's "base case" scenario, which assumes current industry forecasts and regulatory conditions persist. Source: International Energy Agency, "Energy and AI," April 2025. PEW RESEARCH CENTER

sources will take time to get online and present their own land-use issues.

- A major concern is who pays for the additional electrical and generating and transmission capacity. The article, "Extracting Profits from the Public: How Utility Ratepayers Are Paying for Big Tech Power" from the Environmental Energy and Law Program at Harvard Law School (March, 2015) makes the case that in some instances power companies and data center developers have entered into agreements that allocate some of the costs of additional generating and transmission capacity to other ratepayers, thus increasing electric rates for all. States are now passing legislation to preclude this from happening. Policies and legislation addressing this issue have been proposed in Florida.

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