

ARIZONA

Data Center Impacts in the West: Policy Solutions for Water and Energy Use

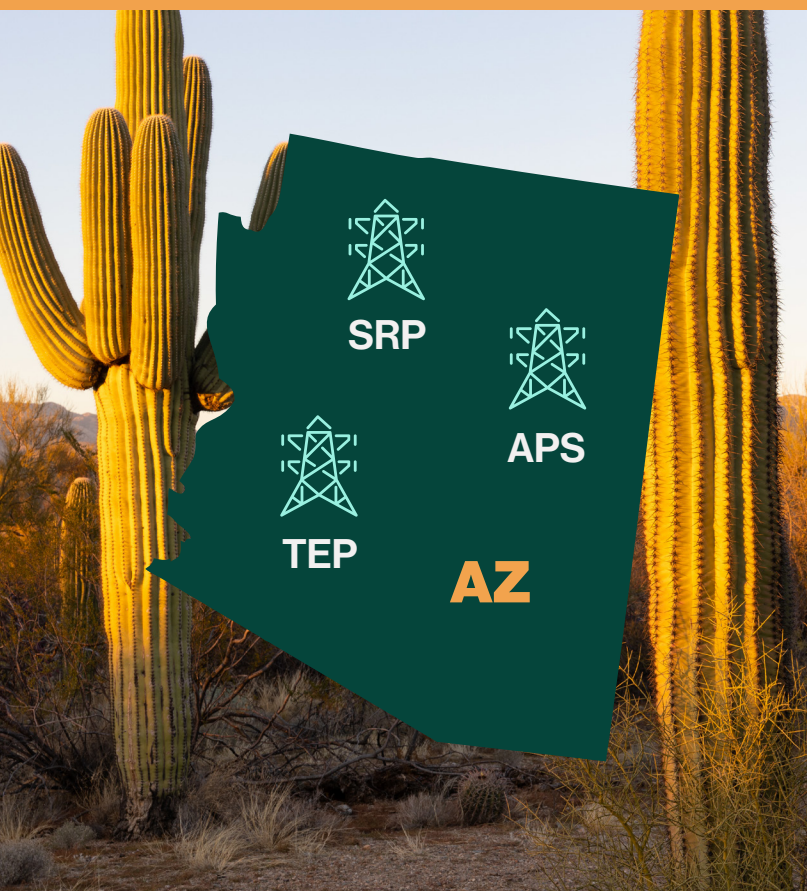
Seemingly overnight, artificial intelligence is now built into everything from iPhones and Google searches to online services like Amazon. As entire industries work to adapt to the sweeping change of AI, data centers — the buildings that serve as the engines of AI and cloud computing — pose explosive demands on Arizona's energy and water.



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KEY FINDINGS

- The collective annual energy demands of the utilities in WRA's region are projected to be **55% higher in 2035**. This equates to an annual growth rate of 4.5% over the next decade.
- The growth projected in just the **next five years** surpasses the current system of electricity production – that took a century or more to build.
- If projections of data center load growth become reality, these new facilities in the Interior West could have an annual on-site water use of **21,600 acre-feet (7 billion gallons) in 2035**. This amount of water can serve the annual needs of up to 194,400 individuals.



Arizona exempts data centers that meet certain requirements from taxes for 10-20 years.

The state's three largest utilities – Arizona Public Service, Salt River Project and Tucson Electric Power – each offer economic discount rates to data centers.

However, as AI usage increases and data centers expand, we must meet new energy demands with clean energy and rapidly decarbonize the rest of our energy infrastructure, while also understanding the impact these centers have on our already stretched water supplies in Arizona.

We need policies that advance clean energy, preserve scarce water resources, and protect electricity customers. With the right policies in place, data centers can catalyze investments in innovative clean energy resources while driving broader system transformation.

ARIZONA PUBLIC SERVICE COMPANY (APS)

Central Arizona has become a hub for data center development. APS has reportedly received inquiries for up to 15,000 megawatts of new capacity. The utility's current net summer peak load is approximately 8,000 megawatts. APS's last published an Integrated Resource Plan (IRP) in August 2023. While this predated the demand surge for AI-based data centers, the IRP still projects significant incremental, additional peak demand and annual energy demands for data centers. The 2023 IRP also includes a new category that was not previously included in the 2020 IRP: **extra-high load factor commercial customers**.

Compared to the 2020 IRP, APS projects that:

- Annual energy demand, as measured by sales prior to energy efficiency and distributed resources, will be approximately 10 million megawatt hours (24%) higher in 2030, and 11 million megawatt hours (24%) higher in 2035. This is almost entirely due to the annual energy demands of new, extra-high load factor commercial customers.
- Peak demands will be 1,200 megawatts (12%) higher in 2030 and 1,100 megawatts (10%) higher in 2035. Like annual energy demands, the higher peak demands are



24%* higher in 2035

**Increase in new annual energy demands compared to APS' 2020 IRP.*



3,312 acre-feet per year (1.08 billion gallons)

in new water demands, or enough water to support up to 25,000 individuals.

largely due to load from the new, extra-high load factor commercial customers.

- APS has noted that the data centers that have historically located in Central Arizona provide cloud computing services, rather than AI. As a result, their load grows more steadily, in comparison with AI data centers whose load may increase more abruptly.
- Using an estimate of the national average on-site water intensity of data centers and APS' energy demand projections, WRA estimates the incremental, additional water demands associated with cooling its data centers in could be 2,856 acre-feet per year in 2030 and 3,312 acre-feet per year in 2035.

SALT RIVER PROJECT (SRP)

SRP completed an Integrated System Plan (ISP) in 2023. Like an IRP, SRP develops and models different scenarios of load growth and resource development. In early 2025, the utility presented the following forecasts:

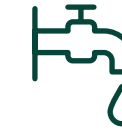
- Annual energy demands are forecast to have a compound annual growth rate of 6% over the 2024-2035 period, compared to 3.3% in the 2023 ISP. As a result, total energy demand is now projected to be 30% (14,000 gigawatt hours) higher in 2035, compared with an earlier forecast.
- Peak demand is forecast to grow at 4.2% over the 2024-2035 time period. Between 2025 and 2035, SRP projects its large customer load will grow by approximately 2,700 megawatts. Of this, roughly 2,200 megawatts of new load is attributed to data centers.

- SRP's overall peak demand is now projected to be approximately 1,000 megawatts higher in 2035 than under the Current Trends scenario developed in 2023.
- Using an estimate of the national average on-site water intensity of data centers and SRP's energy demand projections, WRA estimates the incremental, new water demands associated with cooling its data centers could be 1,020 acre-feet per year in 2030 and 4,049 acre-feet per year in 2035.



30%* higher in 2035

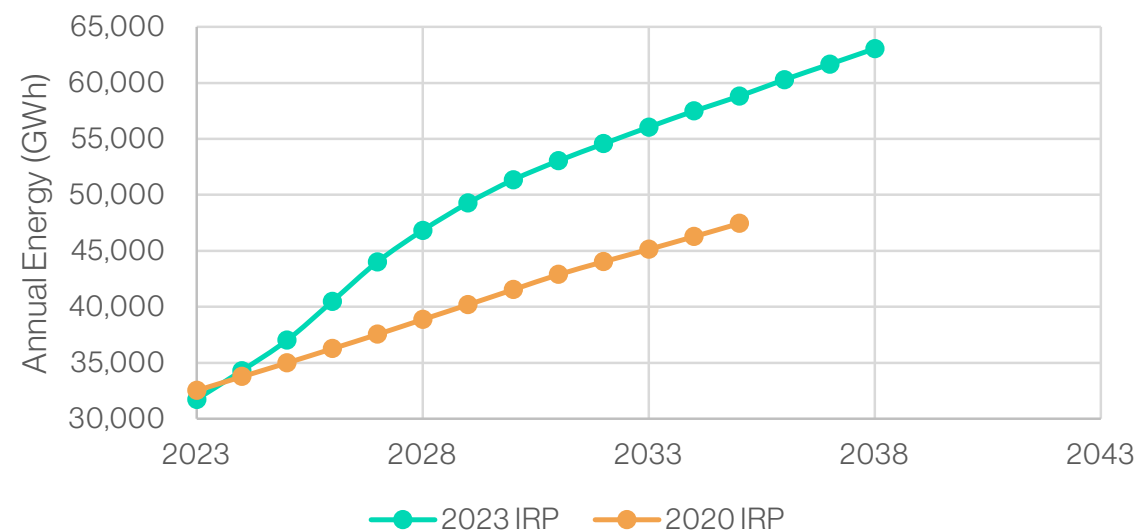
**Increase in annual energy demands compared to SRP's previous forecasts.*



4,049 acre-feet per year (1.3 billion gallons)

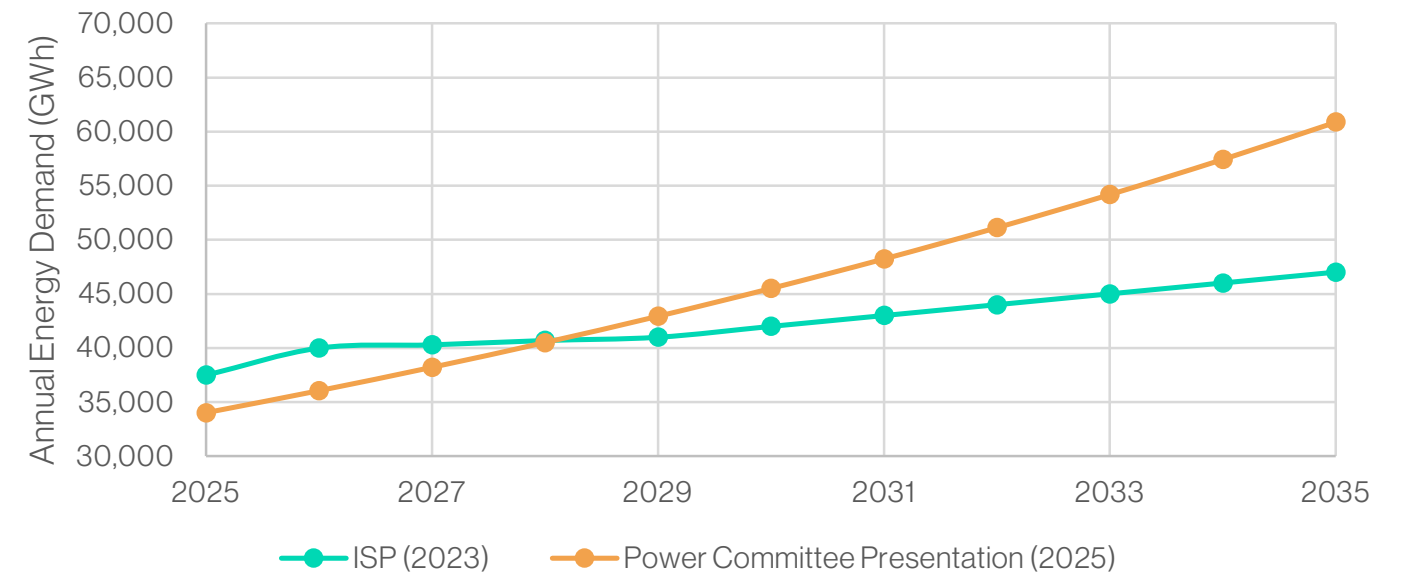
in new water demands, or enough water to support up to 31,000 individuals.

APS: Change in Annual Energy Sales (Prior to DSM and DE)

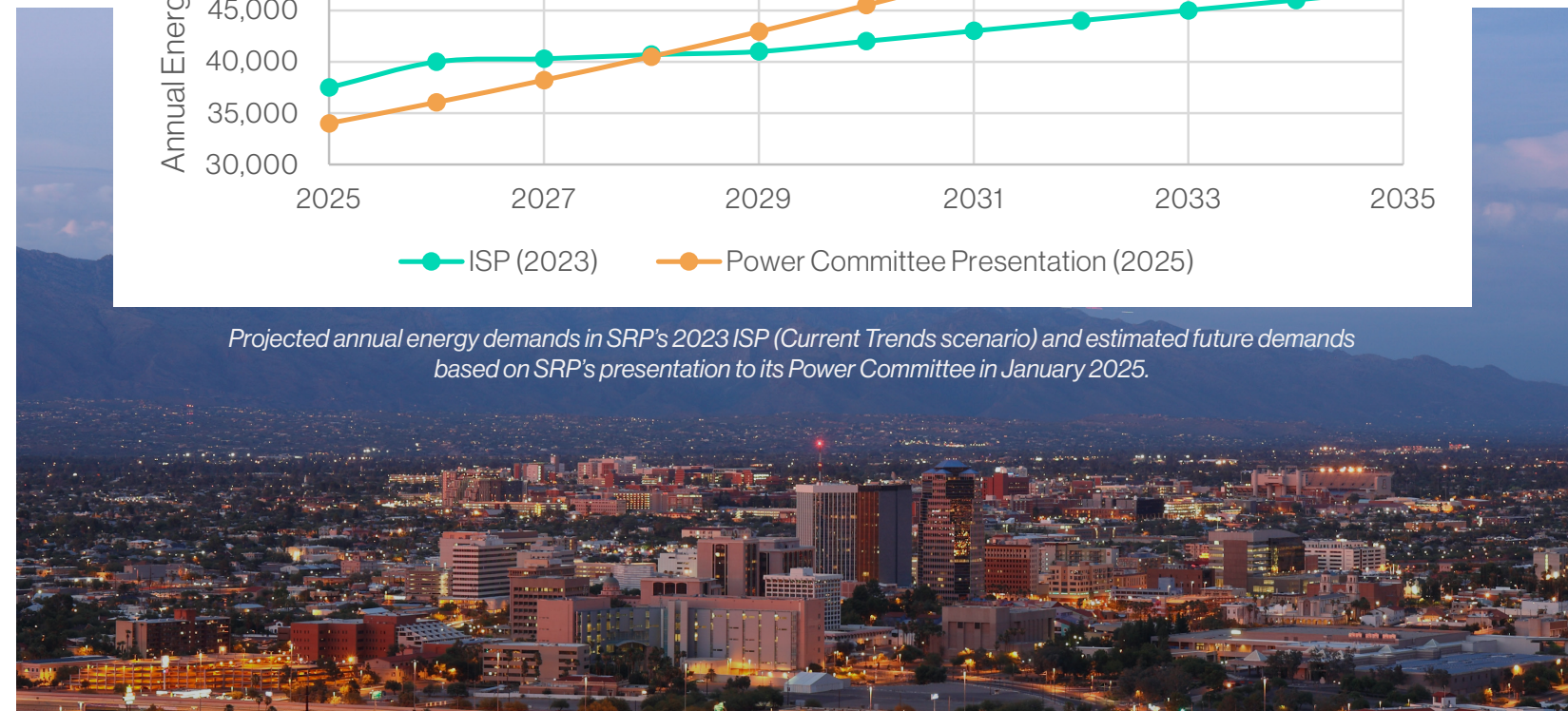


Change in annual energy demands between the 2020 IRP and the 2023 IRP. The figures reflect sales to customers, prior to energy efficiency and distributed resources.

SRP: Projected Annual Energy Demands



Projected annual energy demands in SRP's 2023 ISP (Current Trends scenario) and estimated future demands based on SRP's presentation to its Power Committee in January 2025.



TUCSON ELECTRIC POWER COMPANY (TEP)

TEP filed its last IRP in August 2023, predating the surge in data center demands. However, the utility reported that it has received over 10,000 megawatts of interconnection requests.

- As of early 2025, the utility is developing contracts for 300 megawatts of new data center load, which could come online starting in 2027, relying on existing and planned capacity. TEP stated in its 2024 earnings call that “at full production, a 300-megawatt high load factor customer would increase retail sales by about 20%.”
- The utility expects negotiations with additional customers representing approximately 600 megawatts of new load requesting interconnection in the 2030 timeframe.
- Assuming the new data centers operate at an 85% load factor, WRA estimates that TEP’s peak demand



52%* higher in 2035

**Increase in projected annual energy demands compared to TEP’s 2023 IRP.*



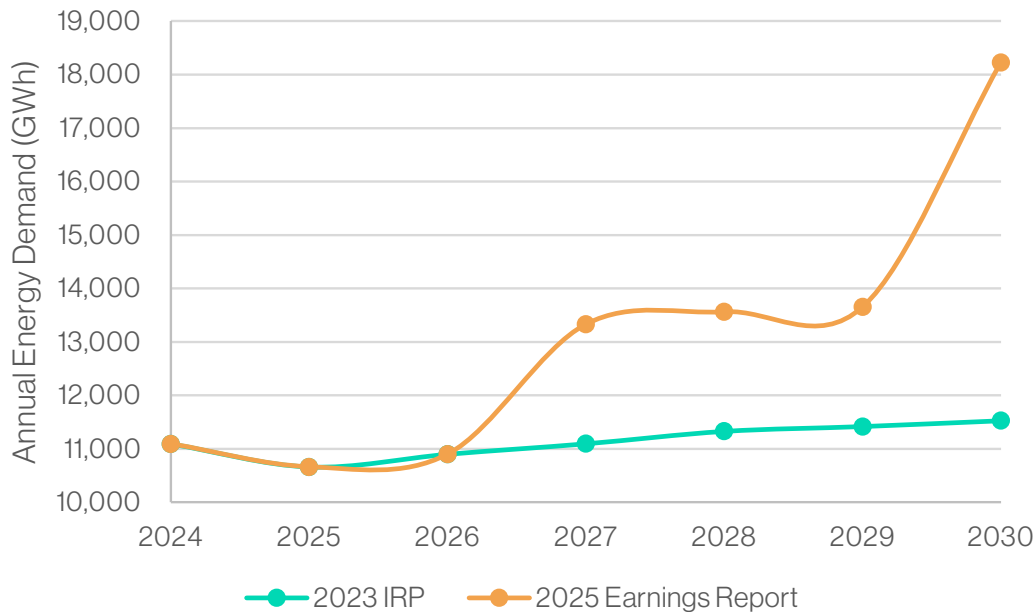
1,953 acre-feet per year (637 million gallons)

in new water demands, or enough water to support up to 15,000 individuals.

could increase by approximately 20% in 2027, when the first data center comes online, and 60% in 2030, when the second wave of data centers come online.

- Using an estimate of the national average on-site water intensity of data centers and TEP’s energy demand projections, WRA estimates the incremental, new water demands associated with cooling its data centers could be 1,953 acre-feet per year in 2035.

TEP: Projected Annual Energy Demands



TEP’s projected annual energy demands under the 2023 IRP and updated with information from the 2025 Earnings Report.

FOR MORE INFORMATION:

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Access WRA’s full report.