

Frequently Asked Questions

What is the Paducah American Energy Hub?

The Paducah American Energy Hub is a proposed project meant to develop and power a large-scale data center at the site of the former Paducah Gaseous Diffusion Plant owned by the U.S. Department of Energy. The project pairs new energy infrastructure, including natural gas generation and battery energy storage systems, with a data center to support advanced computing needs while strengthening grid reliability.

Who is involved in this project?

The project brings together a group of organizations with distinct roles – all coordinating to ensure a thoughtful approach that reflects local needs and priorities.

- » Brookfield, one of the world’s largest investors in the AI infrastructure value chain, would build, finance, and operate the data center. The data center is expected to host computation from America’s most advanced artificial intelligence companies.
- » NextEra Energy Resources, the largest energy infrastructure builder in the U.S., would be responsible for building and supplying the energy infrastructure.
- » Big Rivers Electric Corporation would provide wholesale electric service to the site, with Jackson Purchase Energy Cooperative delivering retail service.
- » Paducah Power System serves as a community supporter.

How did this project come to fruition?

In November 2025, the U.S. Department of Energy issued a Request for Offer seeking proposals from companies to build and power data centers on the site of its Paducah Gaseous Diffusion Plant. As part of that process, NextEra Energy Resources, together with its utility counterparts, and Brookfield formed a strategic collaboration to pursue the opportunity. The organizations were selected in July 2026 to advance the project.

How is this connected to a data center?

The project is specifically designed to support a new data center at the Paducah Gaseous Diffusion site. Under the arrangement, Brookfield would build and operate the data center, while NextEra Energy Resources would develop and supply the energy needed to power it. Big Rivers Electric Power Corporation and Jackson Purchase Energy Cooperative would provide wholesale and retail service, respectively, to the site.



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What energy resources will power the project?

While still in the early stages of development, the project is expected to include new natural gas generation and battery energy storage systems with the potential for additional advanced energy technologies in the future. These energy resources will be added over time in clearly defined stages, allowing the local community to welcome the opportunity without sudden strains.

Why is this project needed?

The U.S. Department of Energy has outlined the project goal to strengthen American leadership in artificial intelligence by leveraging federal land to support new data centers and the energy infrastructure needed to power them. At the same time, it brings new economic investment to communities like Paducah, Kentucky.

What are the benefits of the project for the local community?

Representing billions of dollars in capital investment, the project positions the region for long-term economic growth and competitiveness by attracting technology companies. That investment is also expected to translate into significant job creation, with both the energy generation and data center facilities expected to create more than 8,000 construction jobs and more than 600 high-paying operational positions.

Where is the project located?

The data center will be located on the site of the former Paducah Gaseous Diffusion Plant. The energy infrastructure is expected to be located nearby, with final locations to be determined through ongoing evaluation and community engagement.

Why is the area being considered for a project like this?

The site of the Paducah Gaseous Diffusion Plant, owned by the U.S. Department of Energy, provides a large, industrial-ready location with a long history of supporting energy-intensive operations and national-priority missions. Because the site was originally designed to support these functions, it makes it well-suited for modern technology and manufacturing uses – like a data center. Beyond that, the region benefits from a skilled workforce, strong local utility expertise and a centralized location with excellent connectivity. Together, these factors make the location highly competitive for projects like this.

Will this project affect local electricity rates?

No. The project was designed in coordination with the U.S. government to comply with the Ratepayer Protection Pledge, ensuring the data center covers the costs to serve it. Further, using the cost-of-service structure implemented by Big Rivers Electric Corporation and Jackson Purchase Energy Cooperative helps protect residential and small business customers from additional rate impacts. The project is also structured to generate more power than needed, creating a surplus that would be sent onto the broader electric grid and create downward pressure on energy costs over time.

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Will the project use a lot of water?

As it relates to the natural gas facility, an adequate water supply is needed to support electricity production and to cool the power-generating units. NextEra Energy Resources is completing a detailed analysis of water resources to determine the most suitable and sustainable supply.

For the data center, water is typically needed to help cool equipment and maintain efficient operations. While some older data center designs relied on evaporative cooling, which consumes large amounts of water, this data center is expected to use a modern closed-loop cooling system that continuously recirculates the same water. The system is filled when the facility begins operating and then reuses that water throughout the life of the project, requiring only small amounts of additional water over time to replace minor losses from routine maintenance and normal operation.

It's important to note that the former Paducah Gaseous Diffusion Plant was designed to use 30 million gallons of water per day. This was supplied to the site using an onsite water plant that treated water taken from the Ohio River. Although that infrastructure still exists today, the data center and natural gas facility are anticipated to use less than five million gallons per day, which is less than 20% of the original use. To put this number in perspective, the Ohio River's flow is typically ten to hundreds of billions of gallons of water a day, making the project's consumption less than one-tenth of one percent of the river's flow even at its historic low. Additionally, the nearby Olmsted Dam was completed in 2018, which raised the river's minimum water level meaningfully higher than when the former plant operated.

In addition, both the natural gas facility and data center would undergo rigorous review by regulatory agencies according to local, state, and federal requirements before any water appropriation is approved.

How loud will this project be?

Once the natural gas facility is operational, noise will be present during normal operations and will vary based on plant load and operating conditions, naturally decreasing with distance from the facility. NextEra Energy Resources will also conduct a noise assessment using acoustic modeling to better understand potential impacts and determine whether additional mitigation measures are needed.

Similarly, as it relates to the data center, efforts will be made to manage and mitigate noise from operating equipment. The components of a data center that can contribute to noise – primarily cooling equipment – are well-understood and operate in a consistent, predictable manner. Similar to the natural gas facility, the sound will be modeled before construction, would be tested after and monitored during operation to ensure compliance with local noise ordinances.

It's important to note that both facilities will be designed and operated to meet all applicable noise-level requirements.

What is the current status of the project?

The project is still in its early stages, but work is underway to complete detailed technical and environmental analyses to guide development. As that work moves forward, the project participants are committed to working closely with local leaders and the community to ensure the process is thoughtful and transparent.

How can the community learn more?

All of the project participants believe in building strong relationships and supporting the communities our projects call home. Throughout development, there will be multiple opportunities, including public meetings, for the community to learn more and share input. In the meantime, a project email has been established so community members can connect directly with the project team.