Google announced the next step in its nuclear energy plans

Google is one step closer to reaching its nuclear ambitions now that it’s working with public power utility Tennessee Valley Authority (TVA) to purchase electricity from a next-generation reactor. It’s the first power purchase agreement for technology this advanced that a US utility has made, according to the companies.

The plan is for TVA to buy electricity from a reactor being developed by engineering company Kairos Power in Oak Ridge, Tennessee. Once the reactor is up and running, expected in 2030, it should start supplying electricity to the local grid that serves Google data centers in Tennessee and Alabama.

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If they manage to pull this all off, it could help jumpstart a whole new era for nuclear energy in the US. The nation’s current fleet of nuclear reactors uses decades-old technology that has struggled to compete with cheap electricity from gas-fired power plants and solar and wind farms. Kairos Power is building one of the first reactors that proponents hope can usher in a resurgence of nuclear energy, and meet rising electricity demand from Big Tech and AI.

Oak Ridge, Tennessee – where Kairos is building Hermes 2 – was once the headquarters for the Manhattan Project. Now, instead of housing facilities enriching uranium for the first atomic bombs, Oak Ridge has become a hub for nuclear energy projects

and research.

Eventually, Google aims to help Kairos deploy 500 megawatts of new nuclear capacity in the US by 2035. For context, America’s 94 operating nuclear reactors had a combined capacity of 97,000MW in 2024 and accounted for just under 20 percent of the US electricity mix. Hermes 2 is supposed to reach a capacity of 50MW.

Companies that generate carbon pollution-free electricity, like nuclear energy and renewables, can make money by selling the electricity they provide to the power grid *and* by selling so-called clean energy attributes that are like separate certificates representing the environmental benefits of avoiding fossil fuel emissions. Google will receive clean energy attributes from the Hermes 2 plant through TVA.

Tech companies with climate goals often buy clean energy attributes to try to cancel out the pollution caused by their electricity use. By matching its electricity use with those certificates, a company might claim that it runs on clean energy even if it’s plugged into a power grid that still runs on dirty energy. Extra income from clean energy attributes is supposed to help developers add more carbon pollution-free power to the grid (although research has shown that the environmental benefits are often overestimated). Google’s carbon emissions rose again last year as it ramps up its AI offerings.

https://www.theverge.com/news/761809/nuclear-energy-google-ai-advanced-reactor-kairos-tva-electricity-utility