

CLIENT ALERT

Another Nuclear Renaissance

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AUTHORS

Eric Pogue | S. Kris Agarwal | Archie Fallon | John R. Thomas
Norman C. Bay | Niko Letsos | Jacob Bell

Nuclear energy is having a moment.

Public and private sector leaders – in the U.S. and internationally – have shown increasing interest in this clean power source in recent years. By way of example, in 2023 Poland announced plans for the development of its first nuclear power plants; plans are underway to repower a previously decommissioned nuclear power plant in Michigan with up to \$1.5B in related federal, DOE support; and plans for the deployment of small modular reactors are moving forward on many fronts with encouragement of stakeholders including tech companies and data center owners.

The need to reconsider previous energy plans that did not include nuclear energy has also grown due to soaring estimates for future energy consumption. Grid planners' five-year load growth forecast has nearly doubled nationwide in the last year, with U.S. demand expected to grow by 38 GW through 2028.¹ Some regions' demand is much greater. Due to the expansion of data centers and industrial operations, Georgia, Mississippi, and Alabama are now expected to experience 17 times more energy demand over the rest of the 2020s.²

The demand growth is being propelled by the most exciting areas of the U.S. economy – U.S. manufacturing, growth of the electric vehicle sector, and data centers. Leading tech companies anticipate a significant increase in energy consumption to support more data centers with greater power needs as AI capabilities revolutionize nearly every sector of the economy.³

¹ <https://gridstrategiesllc.com/wp-content/uploads/2023/12/National-Load-Growth-Report-2023.pdf>

² https://www.wsj.com/business/energy-oil/big-techs-latest-obsession-is-finding-enough-energy-f00055b2?st=wr91q2v4sh8pa86&reflink=article_email_share

³ *Id.*

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These same companies are also most determined to eliminate their carbon footprint and have taken the lead in developing sustainable energy sources as well as committing to “net zero”. Nuclear energy offers a path forward in the years ahead.

This groundswell has grown stronger due to recent advancements in nuclear energy generation. For example, scientists successfully created net energy through nuclear fusion for the first time in 2023. A partnership between the U.S. and Japanese governments was announced on April 10, 2024 to speed up the commercialization of energy derived from nuclear fusion.⁴

Another advancement is with respect to small modular reactors (SMRs). Unlike traditional power plants, SMRs have a much lighter brick-and-mortar footprint, have many safety advantages, and can come online in less than a decade, making them a promising source of energy in the U.S. Using SMRs have the potential to allow data centers specializing in extensive AI computations to meet all their energy demands without drawing from the grid. The first SMR design that can be used in the U.S. was approved by regulators in 2023, allowing the country to keep up in the race to utilize this essential technology.⁵ Internationally, China has moved forward with the world’s first plant based on SMRs.⁶ In March 2024, the U.S., UK, and Canada updated past regulatory agreements between their main nuclear agencies to account for SMRs. The three countries aim to share best practices to facilitate the use of SMRs in the near future.⁷

Nuclear energy is increasingly part of the “all of the above” consensus to uphold environmental commitments to net zero emissions while also meeting growing energy demand and pursuing groundbreaking innovations. Nonetheless, advancing nuclear as an energy solution entails securing significant, ongoing financing for large-scale projects, as well as a deep understanding of the regulatory and tax burdens and government credits associated with the nuclear industry. In each of these areas, Willkie Farr and Gallagher LLP stands at the forefront of the industry. In the weeks and months ahead, Willkie plans to release series of client alerts focusing on areas of interest in the nuclear industry.

⁴ <https://www.reuters.com/business/energy/us-japan-announce-joint-partnership-accelerate-nuclear-fusion-sources-2024-04-10/>

⁵ <https://www.energy.gov/ne/articles/nrc-certifies-first-us-small-modular-reactor-design>

⁶ <https://www.world-nuclear-news.org/Articles/Outer-dome-installed-on-Chinese-small-modular-nucl#:~:text=Once%20completed%2C%20the%20Changjiang%20ACP100,the%20needs%20of%20526%2C000%20households>

⁷ <https://www.powermag.com/u-s-uk-canada-ink-trilateral-memo-to-cooperate-on-advanced-reactor-licensing/>

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If you have any questions regarding this client alert, please contact the following attorneys or the Willkie attorney with whom you regularly work.

Eric Pogue

212 728 8035

epogue@willkie.com

S. Kris Agarwal

713 510 1778

kagarwal@willkie.com

Archie Fallon

713 510 1775

afallon@willkie.com

John R. Thomas

212 728 3605

jrthomas@willkie.com

Norman C. Bay

202 303 1155

nbay@willkie.com

Niko Letsos

713 510 1768

nletsos@willkie.com

Jacob Bell

713 510 1752

jbelle@willkie.com

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