# Rolls-Royce pitches SMRs as power source for AI boom



Rolls-Royce believes its small modular reactors (SMRs) could power the next wave of artificial intelligence, supplying steady, low-carbon electricity to energy-hungry data centres and helping the company become Britain’s most valuable firm.

Chief executive Tufan Erginbilgic told the BBC that modular nuclear units — designed for quicker, cheaper deployment than traditional plants — could underpin AI growth and open a lucrative global export market. The pitch comes as International Energy Agency data shows worldwide data-centre power demand is set to more than double from 415 terawatt-hours in 2024 to around 945 TWh by 2030, with AI servers a major driver.

Government backing has been strong. The UK has named the Rolls-Royce SMR a preferred bidder for the first domestic fleet and signed a fast-track export partnership with Czechia. Ministers say SMRs can boost jobs, energy security and exports. Rolls-Royce, whose nuclear expertise stems from Royal Navy submarine programmes, also recently won a major Ministry of Defence contract to design and support naval reactors — bolstering its civil SMR credentials.

Analysts see potential demand for hundreds of SMRs globally by mid-century, with major tech companies already seeking reliable, low-carbon power for AI workloads. But commercial hurdles remain: no SMR has yet been deployed at scale, and projects face regulatory scrutiny, supply-chain ramp-up, financing risks and the challenge of integrating new nuclear capacity with grid infrastructure and data-centre locations.

Supporters say factory manufacture and repeatable designs could drive costs down once early units are proven, aligning industrial strategy with decarbonisation goals. Critics warn that first-of-a-kind delays or public opposition could slow momentum.

If regulatory approvals, grid upgrades and investment align, Rolls-Royce’s SMR-for-AI plan could anchor a new export sector for the UK. The ultimate test will be delivery — turning preferred-bidder status and vision statements into operating reactors powering the AI economy.

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## Bibliography

1. <https://fingaz.co.zw/2025/08/13/ai-can-make-us-uks-biggest-firm-rolls-royce-says/> - Please view link - unable to able to access data
2. <https://fingaz.co.zw/2025/08/13/ai-can-make-us-uks-biggest-firm-rolls-royce-says/> - Rolls-Royce has said its plan to power artificial intelligence (AI) systems using its small modular reactors (SMRs) could propel the company to become the UK’s most valuable firm. The article reports that Rolls-Royce has signed agreements to supply SMRs to both UK and Czech governments, highlighting the firm’s nuclear capability derived from submarine reactor expertise. It notes AI’s dramatic surge in popularity since 2022 and emphasises the technology’s high energy demands, which has prompted interest in reliable low‑carbon power sources. The piece also mentions industry and governmental interest in SMRs as part of wider energy and industrial strategy moving forward.
3. <https://interestingengineering.com/innovation/rolls-royce-boss-says-nuclear-powered-ai-could-make-it-uks-top-company-report> - Interesting Engineering reports that Rolls‑Royce’s chief executive told the BBC the company plans to power artificial intelligence with its small modular reactors (SMRs), a strategy that could elevate Rolls‑Royce to the UK’s most valuable company. The article outlines deals to supply SMRs to the UK and Czech governments and describes SMRs as factory‑built, quicker to deploy and suitable for powering large AI data centres. It cites the CEO’s projection of roughly 400 SMRs required worldwide by 2050 at about $3 billion each, and notes interest from major technology firms in securing low‑carbon, reliable power for energy‑intensive AI workloads and growth.
4. <https://www.gov.uk/government/news/uk-and-czechia-to-lead-global-race-on-small-modular-reactors> - The UK government announced a partnership with Czechia to lead development and export of small modular reactors (SMRs), signed at Downing Street. The statement confirms Rolls‑Royce SMR as a preferred bidder to develop the UK’s first SMRs and signals cooperation on up to six Rolls‑Royce reactors for Czechia. The release highlights government backing, including funding commitments and the inclusion of SMRs in a wider clean energy and industrial strategy designed to secure jobs, boost exports and deliver low‑carbon homegrown power. It frames SMRs as smaller, quicker and potentially cheaper than traditional plants, supporting energy security and industrial growth across sectors.
5. <https://www.theguardian.com/business/2025/jun/10/rolls-royce-named-winning-bidder-for-uk-small-nuclear-reactors-smr-sizewell-c> - The Guardian reports that Rolls‑Royce was named the preferred bidder to build small modular reactors (SMRs) in the UK, chosen ahead of US competitors. The article explains the SMR design will produce around 470 megawatts per unit and that a fleet could provide significant low‑carbon electricity alongside large projects such as Sizewell C. It contrasts factory‑built modular construction with traditional site‑built plants, arguing modular units could be cheaper and faster to deploy. The piece notes SMRs remain unproven commercially but highlights Rolls‑Royce’s submarine reactor expertise, regulatory milestones and the government’s broader nuclear investment plans and boosts Britain’s potential export market.
6. <https://www.iea.org/reports/energy-and-ai/energy-demand-from-ai> - The International Energy Agency analysis examines the growing energy demand from artificial intelligence and data centres. It estimates global data centre electricity consumption at about 415 terawatt‑hours (TWh) in 2024, roughly 1.5% of global electricity use, and projects a substantial rise to around 945 TWh by 2030 under its Base Case. The report highlights that accelerated servers used for AI could grow electricity demand by about 30% annually, driving much of the increase, while overall data centre consumption is forecast to grow faster than other sectors. It stresses regional concentration of data centres and implications for grids and policy makers.
7. <https://www.bbc.co.uk/news/articles/c93q974p341o> - The BBC reports that Rolls‑Royce secured a landmark £9 billion Ministry of Defence contract, named Unity, to design, manufacture and support nuclear reactors for the Royal Navy’s submarine fleet. The story explains the eight‑year deal will create over 1,000 jobs and safeguard around 4,000 additional roles, while aiming to improve efficiency and reduce costs by streamlining previous arrangements. The article highlights Derby as a production centre and situates the contract within broader national security priorities. It notes the agreement’s potential to strengthen the UK defence industrial base and to underpin Rolls‑Royce’s experience in nuclear reactor technology relevant to SMR ambitions.