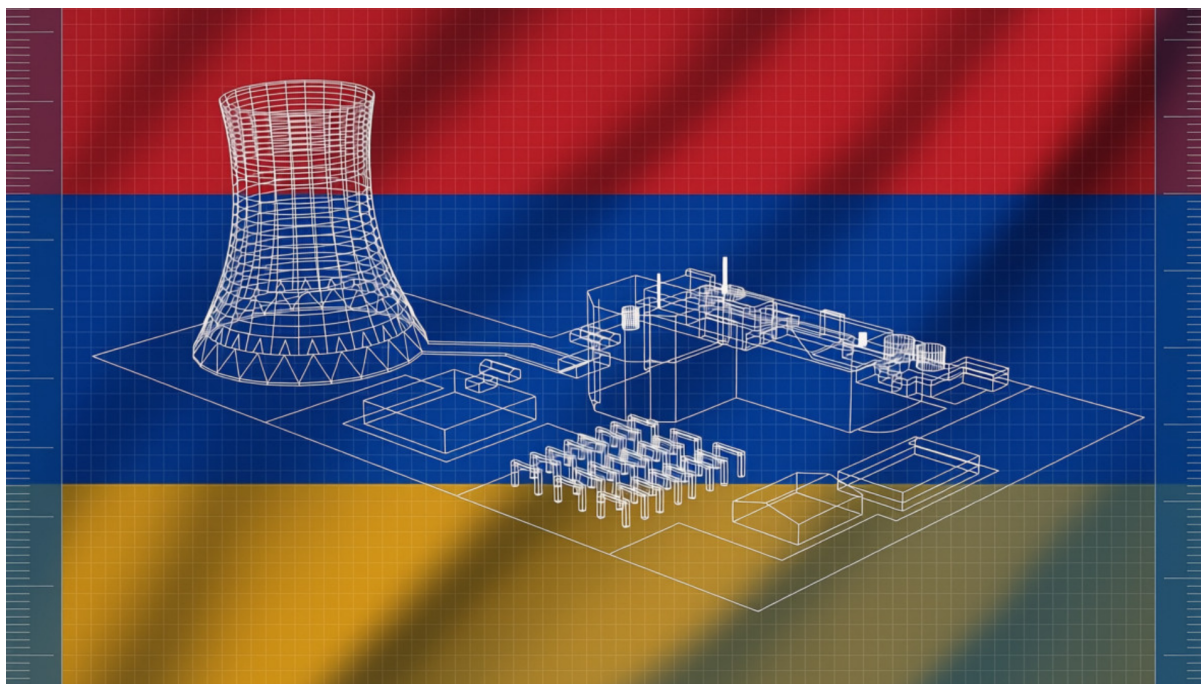




Long Read | The Technological Limits to Armenia's Rosatom Decoupling Ambitions

By Ilya Roubanis¹

July 2026

Armenia must decide on its nuclear technology path. The upper-middle-income state in the South Caucasus depends on nuclear energy for upwards of 30% of its energy mix; building a new plant would require a decade.² Yerevan looks determined to extend the operation of the Metsamor's nuclear power plant for as long as possible, potentially until 2036. What happens thereafter is a decision that must be taken by the end of 2026 or early 2027.³ This paper explores the technological, political, and economic factors Armenia must factor in as it considers moving away from its long-standing commitment to Russian technology with Rosatom.

Theoretically and off the record, diplomats make a technologically agnostic case consistent with Yerevan's multi-vector foreign policy, briefing that the Government is examining Korean, Chinese, French, as well as American and Russian options. On the record, the only option discussed is the experimental US Small Modular Reactor (SMR) technology.⁴ There are over 120 designs for SMRs that

¹ Dr Ilya Roubanis (PhD, EUI Florence) is Senior Fellow at the Institute of International Relations in Athens (IDIS) and the Alithia Foundation, Boston. His business intelligence work spans energy and security, driven by HUMINT and strategic analysis across Europe and the MENA regions.

² Nuclear Engineering International, Armenia opts for SMRs, February 2026, <https://www.neimagazine.com/news/armenia-opts-for-smrs/?cf-view>; Anna Vardanyan, The future of nuclear energy in Armenia: debate, risks and strategic choices around the Metsamor Nuclear Power Plant, New Eastern Europe, April 2026, <https://neweasterneurope.eu/2026/04/03/the-future-of-nuclear-energy-in-armenia-debate-risks-and-strategic-choices-around-the-metsamor-nuclear-power-plant/>; Lilit Shahverdyan, Russia to revamp Armenia's nuclear power plant, Eurasianet, December 2023, <http://large.stanford.edu/courses/2024/ph240/barsoian1/docs/eurasianet-dec23.pdf>

³ ARKA, Armenia has not ruled out postponing the decision on a new nuclear power plant until 2027, June 2026, <https://arka.am/en/news/economy/armenia-has-not-ruled-out-postponing-the-decision-on-a-new-nuclear-power-plant-until-2027>

⁴ Skye Jacobs, US microreactor achieves first self-sustaining nuclear chain reaction, targets 2028 deployment, Techspot, June 2026, https://www.techspot.com/news/112684-us-microreactor-achieves-self-sustaining-nuclear-chain-reaction.html?utm_source=copilot.com; Nuscale Power Module, The Future of Advanced Nuclear Energy, 2018, <https://www.nuscalepower.com/products/nuscale-power-module>

vary in size and can generate 20 to 200 megawatts (MWe). While venture capital in the US can bet billions in new and untested technology, the size of the Armenian economy makes such risks existentially precarious. The only rationale justifying a US technological path is geopolitical and Armenia may not have the luxury of a technological path that is not informed by budgetary and technical parameters. Arguably, the United States has failed to de-risk its technological value-proposition to enable a paradigmatic change of direction for Armenia.

Armenia's binary choice

Armenia's policy objective is often explicit, namely, to mitigate its nuclear dependency on Russia. By the end of the operational lifetime of the Metsamor nuclear power plant, by 2036 at the latest, Armenia wants to both retain the sole nuclear power plant in the South Caucasus and switch to an alternative technology partner.⁵ In effect if not in principle, this frames a binary technological choice: American or Russian.

The Korean-led consortium that has been bidding for the development of nuclear power plants in Europe (KHNP) – in the Czech Republic, Slovakia, and Poland – does not have a portfolio of success stories and they have been stepping aside for their American technology partner, Westinghouse.⁶ The second reason raised by one of Armenia's foremost nuclear engineers and energy policy experts, Dr Ara Marjaryan, is that Korean generators are simply too big: it is not logistically feasible to transfer them to landlocked Armenia.⁷ The Chinese option is not seriously considered either. China's engagement in the development of European Pressurised Reactors (EPRs) in the UK has brought to disrepute its own technological profile and that of their French partners. However, as China is constructing data centres and validating its SMR technology, it is likely that scale may in the future create an opening for the European market.

Beyond the UK, Électricité de France (EDF) design faults and cost overruns have plagued the reputation of French-designed EPR development plants in Finland, France, and China.⁸ To date, France does not have a credible international development portfolio. Although the French ambassador to Armenia has visited the Metsamor plant and officials entertain the possibility of a Framatom partnership – an EDF subsidiary – there is no evidence of a convincing value proposition.⁹

⁵ News.am, US Embassy welcomes progress in Armenian-American civil nuclear energy cooperation, May 2026, <https://news.am/en/news/1037472>

⁶ NFP, South Korean firm withdraws from nuclear plant project in Poland, August 2025, <https://notesfrompoland.com/2025/08/21/south-korean-firm-withdraws-from-nuclear-plant-project-in-poland/>; Aneta Zachova, Pushback over Korea's nuclear power ambition in Europe, Euractiv, May 2025, <https://www.euractiv.com/news/pushback-over-koreas-nuclear-power-ambition-in-europe/>

⁷ Dr Ara Marjaryan, formerly Armenian representative to the United Nations Framework Convention on Climate Change (UNFCCC); Government Strategic Advisor for Energy Development; member of the Eurasian Expert Club and senior expert at the Orbeli Centre, 26/05/2026; Modern Power Systems, Korea's APR1400 employs largest ever 60 Hz steam turbine, April 2008, <https://www.modernpowersystems.com/analysis/korea-s-apr1400-employs-largest-ever-60-hz-steam-turbine/>

⁸ Rob Broomby, Flaw found in French nuclear reactor, BBC, July 2015, <https://www.bbc.co.uk/news/science-environment-33469774>; Frank Bass, European Pressurized Reactors (EPRs): Next-generation design suffers from old problems, Institute for Energy Economics and Financial Analysis, February 2023, <https://ieefa.org/resources/european-pressurized-reactors-eprs-next-generation-design-suffers-old-problems>; Faye Brown, China bought out of Sizewell C as UK confirms £700m stake in nuclear project, Sky News, November 2022 <https://news.sky.com/story/sizewell-c-nuclear-power-plant-go-ahead-reconfirmed-with-700m-public-investment-shapps-announce-s-12757786>; Richard Cook, China's nuclear power play falters in Britain, Asia Times, November 2017, <https://asiatimes.com/2017/11/chinas-nuclear-power-play-falters-britain/>

⁹ Artak Khulian, Firm set up to work on Armenian nuclear project, RFE/RL, August 2024, <https://www.azatutyun.am/a/33059646.html>

According to Dr Marjaryan, the only proposal under consideration is for waste-management, should Armenia diverge from the Russian State Atomic Energy Corporation Rosatom's offer (Rostatom), which typically includes spent-fuel-buy-back agreements. However, according to the Associate Professor of Geopolitics at the University of Alsace, Dr Teva Meyer, France cannot even offer a complete spent-fuel processing agreement because both French law and EU regulation prohibit the import of international nuclear waste.¹⁰ Armenia would need to create purpose-built national infrastructure for spent-fuel storage, one of the most capital-intensive infrastructures in the world.

The one technology being considered in Armenia as an alternative to Rosatom's standing offer are US SMRs, even as the technology remains experimental. NuScale is the first and only US company with an SMR design approved by the US Nuclear Regulatory Commission.¹¹ Theoretically, the competitive advantage of this technology is that SMRs are factory assembled, offsite, and delivered within a shorter period of time, meeting demand as it emerges, without adding to the burden of a public grid. If that were the case, an investment in SMRs would require smaller upfront investment capital, projects would be more bankable, and the sites required would be smaller.

None of these advantages has materialised in practice. NuScale's pilot plant in Utah is closed due to cost overruns; Romania's plant is fraught by the same kind of challenges; Poland's plant has failed to secure a license.¹² Although Romania remains theoretically committed, Prime Minister Ilie Bolojan suggests that relaunching development would require the articulation of a viable financial proposition that would render the generated energy competitive. It is unclear whether such a proposal can be formulated. Given an estimated cost of \$7bn, developing a convincing value proposition remains implausible.¹³ The US nuclear value proposition is half the capacity offered by Rosatom for the same capital.

Named after the US 1954 Atomic Energy Act, the Armenian American Section 123 Agreements penned between US Vice President JD Vance and the Armenian Prime Minister Nikol Pashinyan in

¹⁰ Teva Meyer, Associate Professor of Geopolitics, University of Alsace, Principal Investigator, ERC "Critical Geopolitics of Nuclear Fuel Supply in Europe," (GeoNuFe), 26/06/2026.

¹¹ Timothy Gardner and Manas Mishra, NuScale ends Utah project, in blow to US nuclear ambitions, Reuters, November 2023, <https://www.reuters.com/business/energy/nuscale-power-uamps-agree-terminate-nuclear-project-2023-11-08/>; Nuclear Newswire, NRS accepts TerraPower's SMR construction permit, May 2024, <https://www.ans.org/news/article-6073/nrc-accepts-terrapowers-smr-construction-permit/>; SMR.INTEL, SMR NRC Approval Tracker: Every Reactor in the Pipeline, June 2026, https://smrintel.com/smr-nrc-approval-tracker/?utm_source=copilot.com

¹² WNN, Final Investment Decision taken for Romanian SMR Project, February 2026, <https://world-nuclear-news.org/articles/final-investment-decision-taken-for-romanas-smrs>; M. V. Ramana, The collapse of NuScale's project should spell the end for small modular nuclear reactors, Utility Dive, January 2024, <https://www.utilitydive.com/news/nuscale-uamps-project-small-modular-reactor-ramanasmr-/705717/>

¹³ Timothy Gardner and Manas Mishra, NuScale ends Utah project, in blow to US nuclear ambitions, Reuters, November 2023, <https://www.reuters.com/business/energy/nuscale-power-uamps-agree-terminate-nuclear-project-2023-11-08/>; Nuclear Newswire, NRS accepts TerraPower's SMR construction permit, May 2024, <https://www.ans.org/news/article-6073/nrc-accepts-terrapowers-smr-construction-permit/>; SMR.INTEL, SMR NRC Approval Tracker: Every Reactor in the Pipeline, June 2026, https://smrintel.com/smr-nrc-approval-tracker/?utm_source=copilot.com; Onnik James Krikorian, Armenia looks West to reduce nuclear dependency on Russia, Eurasia Daily Monitor, Volume 21, Issue 110, Jamestown, July 2024, <https://jamestown.org/armenia-looks-west-to-reduce-nuclear-energy-dependency-on-russia/>; M. V. Ramana, The collapse of NuScale's project should spell the end for small modular nuclear reactors, Utility Dive, January 2024, <https://www.utilitydive.com/news/nuscale-uamps-project-small-modular-reactor-ramanasmr-/705717/>; David Beren, Analysts see 140% upside in NuScale Power After Implosion, yahoo! finance, February 2026, https://finance.yahoo.com/news/analysts-see-140-upside-nuscale-230107115.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlMmNvbS8&guce_referrer_sig=AQAAAGtOGRFaAtf4oNFrarh5I8VGio8ZD4AQxDkXs1MXr_G6zxR3ND9iXwNblcjUdWhNBNBscfbnvaA5DpPWhUR2p6nvfyOvVo1SdhATK_jyQTdiwjaBoZgoaAfx4ziPMWj_JjW9AcgbShMBOU4rO1u97jQ8DIV5xbiEztdhPutqO; Reuters, Planned SMR nuclear power plant to cost 6-7\$bn, Romanian PM says, February 2026, <https://www.reuters.com/business/energy/planned-smr-nuclear-power-plant-cost-6-7-billion-romanian-pm-says-2026-02-13/>

February 2026 is, in the words of the Eurasia Program Director of the Foreign Policy Research Institute in Berlin, Dr. Emily Holland, little more than a Memorandum of Understanding. The \$5bn commitment to finance technology exports and, subsequently, \$4bn for long-term technical maintenance of US-made SMR technology articulates political ambition rather than policy commitment to industrial policy.¹⁴ It does not entail any de-risking element undersigned by Washington, such as a package of soft loans, grants, or loan guarantees. As noted by Dr Meyer, the value proposition of US SMR technology is founded on an unproven technology, without a fuel value chain in place, at significantly greater development cost per delivered kilowatt-hour. No one in the nuclear industry expects American SMR technology to be available before five or six years and the cost overruns in Utah, Romania and Poland are discouraging.

According to Sebastian Stier, co-author of the World Nuclear Industry Status Report, Rosatom has emerged as the undisputed leader of the civil nuclear industry, particularly after the Fukushima disaster, which eroded the capital invested in the sector across the West.¹⁵ Rosatom offers predictable cost, tested technology, soft financing, and a spent-fuel-take-back clause as standard. That is significant in an Armenian context, because seven billion dollars makes up two-thirds of Yerevan's entire annual government budget.¹⁶ Nonetheless, experts from the American company Sargent & Lundy visited Yerevan in May 2026 and their preliminary feasibility study concluded the possibility of replacing Armenia's nuclear power plant in Metsamor with American modular reactors (SMRs). That is the same company that has been supporting engineering and design for NuScale's development of a cluster of six power modules in Romania, which to date appear financially unviable.¹⁷

In fact, the deployment of US SMR technology would be self-defeating in Romania, the only country in Europe with a completely diversified nuclear value chain, reliant on Canadian CANDU technology (Canada Deuterium Uranium), which uniquely operates on raw, unenriched uranium. In this context, the deployment of American SMR technology is not only costly but also opens Romania to the possibility of reliance on Rosatom for enriched uranium fuel, which for the moment is not used in Romania. After all, China and Russia are the only countries to have deployed SMR technology in 2019 and 2021 respectively.¹⁸

¹⁴ UNN, US to allocate \$9bn for Armenia's nuclear energy development to reduce its dependence on Russia, February 2026, <https://unn.ua/en/news/us-to-allocate-dollar9-billion-for-armenias-nuclear-energy-development-to-reduce-its-dependence-on-russia>; News Agencies, US strikes civil nuclear agreement with Armenia, Russia's former close ally, Aljazeera, February 2026, <https://www.aljazeera.com/news/2026/2/10/us-strikes-civil-nuclear-agreement-with-armenia-russias-former-close-ally>

¹⁵ Sebastian Stier, Contributing Author, The World Nuclear Industry Status Report (WNISR), 24/06/2026.

¹⁶ CIEC DATA, Armenia Government Debt: % of GDP, 2013-2026 Quarterly, CEIC, 2025, <https://www.ceicdata.com/en/indicator/armenia/government-debt--of-nominal-gdp#:~:text=In%20the%20latest%20reports%2C%20Armenia,USD%20bn%20in%20Mar%202026>

¹⁷ Sargent & Lundy, Sargent & Lundy to Support Romanian Small Modular Reactor Project, January 2025, <https://www.sargentlundy.com/news/sargent-lundy-to-support-romanian-small-modular-reactor-project/>

¹⁸ European Commission, Small Modular Reactors Explained, 2024, https://energy.ec.europa.eu/topics/nuclear-energy/small-modular-reactors/small-modular-reactors-explained_en; Nathalie Voit, Five of the World's Leading Small Modular Reactor Companies, C3, January 2023, <https://c3newsmag.com/five-of-the-worlds-leading-small-modular-reactor-companies/>; Energy Solutions Intelligence, Small Modular Reactors 2026: Nuclear Economics & Global Deployment, June 2026, https://energy-solutions.co/articles/sub/small-modular-reactors-smr-nuclear-future?utm_source=copilot.com

Why consider Small & Micro Modular Reactors in Armenia?

According to the Senior Fellow of Saratoga and Jamestown Foundations, Dr Sergey Sukhankin, US platforms are not commercially proven and US SMR technology remains a matter of future rather than readily deployable technology.¹⁹ The argument favouring the adoption of US SMR technology during the 2026 Yerevan Dialogue, echoed separately by Armenian think tanks analysts, is often geopolitical in nature.²⁰ In the current geopolitical context Rosatom's dominance in the civil nuclear sector is securitised, projecting the threat of weaponisation actualised in the oil and gas sector.²¹ However, the consensus among all the experts interviewed for this analysis is that although the weaponisation of a Russian technological lock-in is possible, to date, it remains theoretical. Rosatom has been striving to maintain its reputation as a reliable energy partner and, to date, the company has never withheld nuclear fuel or equipment to exert security policy influence.

Therefore, Rosatom manages a \$18bn industry with a compounding worldwide order book of 33 nuclear power plant units in Bulgaria, Hungary, Slovakia, Turkiye, Bangladesh, India, Kazakhstan, Iran, Burkina Faso, Mali, and elsewhere. The expansion of Russia's nuclear value chains has created economies of scale for enriched uranium fuel production, thereby creating lateral dependencies, even for the United States, the UK, France, and the EU.²² That is potentially a major diplomatic lever but one that has not been used. Although Rosatom is part of Russia's military-industrial complex, the Kremlin has not moved to replicate its oil and gas strategy in the development or maintenance of nuclear plants or indeed the supply of nuclear fuel.²³ Across Europe, major incidents may have been avoided in part because of policy foresight. Ukraine has taken unilateral measures to decouple from its technological reliance on Russian fuel.²⁴ Gradually, Rosatom's technological value proposition is becoming more technologically hybrid, with reliance on French and Chinese subsystems. This internationalisation means that the weaponisation of engineering becomes less plausible.

¹⁹ Dr Sergey Sukhankin, Senior Fellow at the Saratoga Foundation and the Jamestown Foundation (both in Washington DC), 29/06/2026.

²⁰ New Dosh, Pashinyan promised to "destroy th-headed oligarchy" in Armenia, June 2026, <https://newdosh.media/en/news/pasinan-pooobesal-unictozit-trehglavuu-oligarhiu-v-armenii>; Lilit Shahverdyan, Russia to revamp Armenia's nuclear power plant, Eurasianet, December 2023, <http://large.stanford.edu/courses/2024/ph240/barsioan1/docs/eurasianet-dec23.pdf>; Bellona, Rosatom's Uneasy Spring: Armenia Turns Away, Europe Hesitates, China Steps In, May 2026, <https://bellona.org/news/nuclear-issues/2026-05-rosatoms-uneasy-spring-armenia-turns-away-europe-hesitates-china-steps-in-th-at-and-more-in-our-new-nuclear-digest>; RFE/RL, Yerevan Still 'Assessing Proposals' On New Nuclear Plant, March 2026, <https://www.azatutyun.am/a/33700589.html>; Tymon Pastucha, Development of Small Modular Reactors in the EU on the Horizon, PISM, January 2024, <https://www.pism.pl/publications/development-of-small-modular-reactors-in-the-eu-on-the-horizon>

²¹ Teva Meyer, Assessing the weaponability of enriched uranium trade in the geopolitics of nuclear energy: The EU-Russia interrelations, Science Direct, October 2023, <https://www.sciencedirect.com/science/article/abs/pii/S0301420723010292?via%3Dihub>; Sebastian Stier, Contributing Author, The World Nuclear Industry Status Report (WNISR), 24/06/2026; Emily Holland, Eurasia Program Director of the Foreign Policy Research Institute, Berlin, 16/06/2026; Dr Ara Marjaryan, formerly Armenian representative to the United Nations Framework Convention on Climate Change (UNFCCC); Government Strategic Advisor for Energy Development; member of the Eurasian Expert Club and senior expert at the Orbeli Centre, 26/05/2026.

²² Emmy Sasipornkarn, Beyond oil and gas: Russia's Nuclear Leverage Explained, Deutsche Welle, March 2026, <https://www.worldnuclearreport.org/Beyond-Oil-and-Gas-Russia-s-Nuclear-Leverage-Explained>; Anna T., Question of (In)Dependencies: Nuclear Energy Generation in France, BISI.org, April 2026, <https://bisi.org.uk/reports/question-of-independencies-nuclear-energy-generation-in-france>; Reuters, Russia's Rosatom says overseas nuclear plant projects continue despite new UK sanctions, February 2026, <https://www.reuters.com/world/russias-rosatom-says-overseas-nuclear-plant-projects-continue-despite-new-uk-2026-02-26/>

²³ Toby Woodall, Explainer: Why Russia's nuclear industry has escaped major sanctions, World Nuclear Industry Status Report, December 2025, <https://www.worldnuclearreport.org/Explainer-Why-Russia-s-nuclear-industry-has-escaped-major-sanctions>

²⁴ Charles Digges, Rosatom's role in the war in Ukraine, Bellona Foundation Working Paper, Bellona, 2023, <https://network.bellona.org/content/uploads/sites/4/2024/04/Rosatoms-role-in-the-war-in-Ukraine-1.pdf>

From a political perspective, Yerevan has its own legitimate reasons to be proactively cautious of a singular reliance on Rosatom. The Government of Armenia moved to nationalise the country's electricity distribution network in June 2025, revoking the license of the Russian-Armenian oligarch Samvel Karapetyan; at the time, it was widely understood that Yerevan was taking steps towards a strategic decoupling.²⁵ Armenia's Strategic Partnership Charter with the United States in January 2025 was meant to signal that Yerevan is taking a step away from Russia's Near Abroad.²⁶ This perception was accentuated by the fact that Karapetyan took charge of the opposition front, framing the 7 June 2026 legislative elections as an East versus West contest.²⁷ Russia has been warning Yerevan that its pro-Western turn will have severe economic consequences, with explicit references to the country's energy security.²⁸ However, most references refer to the subsidised prices of natural gas provided by Gazprom rather than nuclear fuel. It is in this context that the Armenian Government is exploring ways of shielding its energy security.²⁹

While the Armenian Government recognises that nuclear energy is and will remain a vital element of the country's energy mix, the political risk associated with a singular dependence on Rosatom may be politically risky.³⁰ However, Hungary, Bulgaria, and Ukraine, have adopted an alternative strategy for hedging energy risk, using nuclear fuel supply diversification to mitigate the geopolitical risks associated with dependence on Russia. According to Dr Sukhankin, the most realistic expectation at this point in time is that Armenia will continue to operate Russian-designed units while turning towards Westinghouse and Framatome fuel. This would not eliminate Russian nuclear dependence entirely but would reduce the most recurrent and politically sensitive dependency.

Yerevan has an additional motive to build closer technological ties with Washington. An Armenian-American company has secured a US export license for tens of thousands of top-tier US artificial intelligence (AI) chips (NVIDIA GB200 GPUs) with the vision of creating in Yerevan the largest

²⁵ OC Media, Armenia's regulator moves to strip Karapetyan's firm of power grid licence, November 2025, <https://oc-media.org/armenias-regulator-moves-to-strip-karapetyans-firm-of-power-grid-licence/>

²⁶ Wojciech Wojtasiewicz, Armenia Cautious about rapprochement with the EU and the U.S, PRISM, February 2025, <https://www.pism.pl/publications/armenia-cautious-about-rapprochement-with-the-eu-and-us>

²⁷ JAMnews, Arrested Russian-Armenian businessman Samvel Karapetyan forms a political party, July 2025, <https://jam-news.net/samvel-karapetyans-new-political-force-in-armenia/>; Lucy Papachristou, Armenia arrests six candidates for pro-Russian opposition party before vote, The Independent, June 2026, <https://www.independent.co.uk/news/world/europe/armenia-election-russia-arrests-party-b2991037.html>; Sovanews.tv, Pashinyan dismisses Karapetyan's plans to consolidate opposition, June 2026, <https://sovanews.tv/en/2026/06/21/pashinyan-dismisses-karapetyans-plans-to-consolidate-opposition/amp/>

²⁸ Gevorg Tosunyan, Russia's economic pressure ahead of Armenia's elections: what to expect, CivilNet, June 2026, <https://civilnet.am/en/news/1012274>; Avet Demourian, Armenia's opposition faces arrests as it contests the ruling party's election win, Los Angeles Times, June 2026, <https://www.latimes.com/world-nation/story/2026-06-19/armenias-opposition-faces-arrests-as-it-contests-ruling-partys-election-win>

²⁹ Daniel Markind, As Armenia Looks West, Russia Threatens Its Energy Supply, Forbes, June, 2026, <https://www.forbes.com/sites/danielmarkind/2026/06/03/as-armenia-looks-west-russia-threatens-its-energy-supply/>; Andrew Osborn, Lucy Papachristou and Jekaterina Golubkova, Russia warns Armenia on supplies over EU bid; Trump backs PM Pashinyan, Reuters, May 2026, <https://www.reuters.com/business/energy/russia-warns-armenia-it-could-end-cheap-fuel-supplies-if-yerevan-continues-eu-2026-05-27/>

³⁰ HETQ, Pashinyan Backs Nuclear Energy for Armenia at Brussels Summit, March 2024, <https://hetq.am/en/article/165206>

computing hub between Europe and Central Asia.³¹ In this partnership, NVIDIA provides GPU architecture while Armenia's systemic banks are providing the capital.³² The vision of delivering a 50,000 GPU capacity means Armenia would operate a cluster in the same league with OpenAI/Microsoft, Google/DeepMind, Meta, and Amazon. This venture is energy intensive and will require 0.3 to 0.6 TWh/year, comparable to the consumption of a mid-sized city like Gyumri or Vanadzor.³³ That begs the question of where this additional capacity will come from. Small nuclear reactors are marketed in the United States as an ideal source of baseload energy for data centres in a manner that is both reliable and retains a low carbon footprint.³⁴ Investment in the technology is led by technological giants like Amazon, Google, and Microsoft, and is directly associated with the admission that grid development and the explosive surge for baseload energy cannot keep pace with existing infrastructure.³⁵

While US SMRs have not reached a level of technological maturity or indeed a 'de-risking' package that is competitive to Russian leadership in the civic nuclear sector, what is at stake is supply security.³⁶ Given the current surge in energy demand, nuclear power may be the only viable path to keeping American industrial policy on track, particularly when it comes to the data economy and AI. In an Armenian context and given the imminent nature of energy policy decisions and the pressure for increased baseload supply, the most realistic scenario is tested Russian civil nuclear technology, perhaps in combination with an alternative source of nuclear fuel. Besides, both Russian SMRs and Russian PWR plants are becoming more hybrid in nature, relying on Chinese and French inputs for command and control and turbine units.³⁷ According to Dr Meyer and Dr Marjaryan, Rosatom's

³¹ Firebird, Firebird and U.S. Government Announce Phase 2 of Armenia AI Megaproject, Scaling to \$4bn and 50,000 GPU in 2026, February 2026, https://www.firebird.ai/firebird-us-government-announce-phase-2-armenia-ai-megaproject-scaling-to-4-billion-50000-gpus-2026?utm_source=copilot.com; Telecom Armenia, Team Group, NVIDIA, and Firebird Announce a \$500 Million Megaproject to Build a Regional AI Supercomputing Hub, June 2025, https://www.telecomarmenia.am/en/news/2025/06/11/team-group-nvidia-and-firebird-announce-a-500-million-megaproject-to-build-a-regional-ai-supercompu/1274/?utm_source=copilot.com; Charlotte Trueman, Armenian bank Ameriabank invests 460m in Firebird.ai's planned 100 MW data center, DCD, March 2026, <https://www.datacenterdynamics.com/en/news/armenian-bank-ameriabank-invests-60m-in-firebirdais-planned-100mw-data-center/>

³² Armenpress, Armenia signs first-ever syndicated loan agreement to finance \$300 mln Firebird AI project, March 2026, <https://armenpress.am/en/article/1245822>

³³ Cyfuture, What is the power consumption of h100 GPUs?, https://cyfuture.cloud/kb/gpu/what-is-the-power-consumption-of-h100-gpus?utm_source=copilot.com; IEA, Armenia Energy Profile, https://www.iea.org/reports/armenia-energy-profile/energy-security-2?utm_source=copilot.com; LowCarbonPower, Electricity in Armenia in 2025/2026, 2025, https://lowcarbonpower.org/region/Armenia?utm_source=copilot.com

³⁴ WNN, White paper sets out advantages of SMRs for data centres, October 2024, <https://www.world-nuclear-news.org/articles/white-paper-sets-out-advantages-of-smrs-for-data-centres>; BIS Research, Top 10 Startups Driving Sustainable Power in Data Centers with Small Modular Reactors, August 2024, <https://bisresearch.com/insights/top-10-startups-revolutionizing-data-center-energy-with-small-modular-reactors>

³⁵ Amazon Staff, Amazon enlists nuclear small modular reactors in push for net carbon-zero, Amazon News, 2024, <https://www.aboutamazon.com/news/sustainability/amazon-nuclear-small-modular-reactor-net-carbon-zero>; Spencer Kimball, Oracle is designing a data center that would be powered by three small nuclear reactors, CNBC, September 2024, <https://www.cnbc.com/2024/09/10/oracle-is-designing-a-data-center-that-would-be-powered-by-three-small-nuclear-reactors.html>; Sebastian Moss, Google signs nuclear SMR deal with Kairos for data center power, DCD, October 2024, <https://www.datacenterdynamics.com/en/news/google-signs-nuclear-smr-deal-with-kairos-for-data-center-power/>

³⁶ Jennifer L, US Data Center Power Use Will Double by 2030 Because of AI, Carbon Credits, June 2024, <https://carboncredits.com/us-data-centers-power-requirement-will-double-by-2030/>

³⁷ Sebastian Stier, Contributing Author, The World Nuclear Industry Status Report (WNISR), 24/06/2026; Emily Holland, Eurasia Program Director of the Foreign Policy Research Institute, Berlin, 16/06/2026; Teva Meyer, Associate Professor of Geopolitics, University of Alsace, Principal Investigator, ERC "Critical Geopolitics of Nuclear Fuel Supply in Europe," (GeoNuFe), 26/06/2026; Dr Ara Marjaryan, formerly Armenian representative to the United Nations Framework Convention on Climate Change (UNFCCC); Government Strategic Advisor for Energy Development; member of the Eurasian Expert Club and senior expert at the Orbeli Centre, 26/05/2026.

baseline value proposition in Hungary and Türkiye has been integrating French EPR turbines.³⁸ Similarly, vessels hosting Russian SMRs are made in China. This is not solely Russian technology.

Conclusions

1. The consensus for analysts interviewed for this paper is that Rosatom's value proposition cannot be matched from an industrial policy perspective, particularly given unique spent-fuel-take-back and soft financing elements. Rosatom's technological proposition is superior to any of its peers both in terms of development and operational cost. While in the future Rosatom's ability to extend credit to states that may not be sustainable, Russia is at present the nuclear partner of choice for low- and middle-income countries.

2. There is no apparent benefit for countries that assume the cost of de-risking private investment in experimental US SMR technology, such as Romania, Poland, or indeed Armenia. Armenia's economic stability and energy security would be directly undermined by a commitment to an SMR technology without a spent-fuel-take-back guarantee or a safe nuclear fuel supply value chain in place. Given the country's reliance on nuclear energy and a projected surge on baseload electricity demand, reliance on US SMR technology is politically rational but economically unfeasible. In that respect, the only tested technology that could be seen as an alternative to Rosatom's value proposition is Canadian technology tested in Romania.

3. The one measure Armenia can take to hedge its singular dependence on Rosatom is to consider an alternative supply of nuclear fuel, in cooperation with Westinghouse. That is a tested supply chain that has been taken up by Bulgaria, Ukraine, and Hungary. According to Dr Marjanyan, this still leaves open the question of developing human resources able to operate across divergent value chains, but this is certainly a more manageable risk than a complete technological shift.

4. The South Caucasus is no longer dominated by a single military power. In this sense, technological 'lock-ins' and economic influence are factors that are likely to become diplomatically significant. While the United States may see Armenia as an entry point for the post-Soviet space, without a complete value proposition that includes fuel management and development credit, its SMR industry is unlikely to gain a foothold in the region. Armenia is under pressure to avoid an energy supply cliff-edge and with the current state of play in the civilian nuclear market, there is no viable US nuclear technology path. However, this does not mean that Yerevan does not have a path towards hedging geopolitical risks, or indeed diversifying its nuclear fuel supply.

³⁸ Lily Ottinger, China's Arctic Leverage: Russian polar dominance is on thin ice, China Talk, January 2026, <https://www.chinatalk.media/p/chinas-arctic-leverage>

References to interviews:

- **Teva Meyer**, Associate Professor of Geopolitics, University of Alsace, Principal Investigator, ERC “Critical Geopolitics of Nuclear Fuel Supply in Europe,” (GeoNuFe), 26/06/2026.
- **Sebastian Stier**, Contributing Author, The World Nuclear Industry Status Report (WNISR), 24/06/2026.
- **Emily Holland**, Eurasia Program Director of the Foreign Policy Research Institute, Berlin, 16/06/2026.
- **Dr Ara Marjaryan**, formerly Armenian representative to the United Nations Framework Convention on Climate Change (UNFCCC); Government Strategic Advisor for Energy Development; member of the Eurasian Expert Club and senior expert at the Orbeli Centre, 26/05/2026.
- **Dr Sergey Sukhankin**, Senior Fellow at the Saratoga Foundation and the Jamestown Foundation (both in Washington DC), 29/06/2026.

Disclaimer: The views expressed in this piece are those of the individual author and do not reflect the views of The Foreign Policy Centre.