



# One more time about Strategic Roadmap for the Deployment of a Nuclear Energy Program: Global Analysis and Adaptation of the "Barakah" Model for the Republic of Serbia

## Content

Strategic Roadmap for the Deployment of a Nuclear Energy Program: Global Analysis and Adaptation of the "Barakah" Model for the Republic of Serbia .....	1
Introduction: The Global Energy Transition and the Imperative of Baseload Generation .....	2
Global Analysis of NPP Construction and Project Roadmaps (2023–2026) .....	3
United States of America: Vogtle NPP and Systemic Supply Chain Challenges .....	3
Turkey: Akkuyu NPP and the Innovative BOO Model .....	3
People's Republic of China: Serial Deployment and Technological Autonomy .....	4
People's Republic of Bangladesh: The Rooppur Project as a Newcomer Adaptation .....	4
Deconstruction of the "Barakah" Model (UAE): The Gold Standard for Developing Programs .....	5
Chronology and Deployment Stages of the Barakah Project .....	6
Institutional and Financial Architecture of Barakah .....	7
Development of Human Capital and Supply Chains .....	8
IAEA Methodology: The Infrastructure Compass for Newcomers .....	8
Geopolitical and Legal Barriers: The Dispute Over APR-1400 Technology .....	9
Current Status of Serbia's Nuclear Program (2024–2026) and the Role of EDF .....	10
Conclusions of the EDF Preliminary Study .....	10
Disputes and Implementation Challenges .....	11
Adapted Roadmap for the Republic of Serbia: Integrating the 19 Infrastructure Steps .....	11
Phase 1: Justification, Institutionalization, and Decision Readiness (2024–2027) .....	11
Phase 2: Technology Selection, Structuring, and Contracting (2028–2032) .....	15
Phase 3: Construction, Commissioning, and Integration (2033–2040) .....	16
Integration of National Expert Potential: The Role of the Nuclear Serbia Platform, NUCON, and CONSILIO .....	16
Conclusion .....	17



## Introduction: The Global Energy Transition and the Imperative of Baseload Generation

The global economy has entered a phase of tectonic macroeconomic and geopolitical shifts, characterized by a state that analysts define as an era of "total uncertainty."<sup>1</sup> Under conditions of unprecedented inflation, volatility in fossil fuel prices, and the disruption of traditional global supply chains, ensuring energy sovereignty has become a cornerstone of national security.<sup>1</sup> This process is being catalyzed by global targets for deep industrial decarbonization, the reindustrialization of developed nations, and the exponential growth of energy-intensive sectors, including data centers and artificial intelligence infrastructure.<sup>2</sup> In this context, nuclear power is undergoing a massive global renaissance. According to the International Energy Agency (IEA), global nuclear electricity generation has reached historical highs, and more than 40 countries are currently considering expanding or introducing nuclear energy programs.<sup>3</sup> Recent climate summits have officially enshrined an international declaration calling for the tripling of global nuclear generation capacity by 2050.<sup>5</sup>

The Republic of Serbia, which historically relies on coal-fired generation that currently provides about 70% of its national electricity production, faces the necessity of radically transforming its energy balance.<sup>7</sup> In November 2024, the National Assembly of Serbia made a historic decision by adopting amendments to the energy law, thereby repealing the 35-year moratorium on the construction of nuclear power plants (NPPs) and nuclear fuel cycle facilities, which had been introduced in 1989 following the Chernobyl disaster.<sup>8</sup> Under the Integrated National Energy and Climate Plan (INECP) up to 2030 with projections up to 2050, the Serbian government is officially considering the introduction of at least 1,200 MW of nuclear capacity after 2040.<sup>9</sup> Introducing nuclear generation on this scale will allow the country not only to diversify its energy supply sources but also to transform from a net importer into a net exporter of electricity in the Balkan region.<sup>7</sup>

To implement a project of this magnitude, which requires intergenerational financial and intellectual investments, Serbia has turned to advanced international experience. Particular attention has been paid to the United Arab Emirates (UAE), whose Barakah NPP project is recognized by the International Atomic Energy Agency (IAEA) as a benchmark model for newcomer countries.<sup>11</sup> In early 2026, the Emirates Nuclear Energy Corporation (ENEC) expressed official readiness to share its institutional "roadmap" for nuclear energy implementation with Serbia.<sup>4</sup> In parallel, Serbia has initiated a strategic partnership with the French state-owned company Électricité de France (EDF), which in 2025 completed a "Preliminary Technical Study on the Peaceful Use of Nuclear Energy in Serbia," outlining 19 key infrastructure steps.<sup>8</sup>

This report presents a comprehensive analysis of global NPP construction experience for the period 2023–2026, a detailed deconstruction of the "Barakah" management and financial model, and the development of an adapted strategic roadmap for the Republic of Serbia that takes into account the country's unique geopolitical, logistical, and macroeconomic realities against the backdrop of global technological innovations.



## Global Analysis of NPP Construction and Project Roadmaps (2023–2026)

The global landscape of nuclear power plant construction between 2023 and 2026 demonstrates extreme polarization in project management approaches, implementation timelines, budget control, and the choice of financial models. While Asian countries (especially China) are showing unprecedented rates of bringing new units online thanks to serial production, Western projects frequently face substantial delays due to the loss of competencies in supply chains.<sup>3</sup> Currently, more than 75 reactors are under construction worldwide, with the vast majority located in the Asia-Pacific region.<sup>15</sup> An analysis of projects completed or entering their final construction stages over the last three years helps identify critical success factors and primary risks for states planning to launch national nuclear programs.

### United States of America: Vogtle NPP and Systemic Supply Chain Challenges

The expansion project at the Vogtle NPP (Units 3 and 4) in Georgia, USA, was the first attempt in over three decades to build new nuclear reactors within the country.<sup>16</sup> Generation III+ AP1000 reactors from Westinghouse were selected as the technology. Commercial operation of Unit 3 began in July 2023, and Unit 4 was connected to the grid and entered commercial operation in the spring of 2024, making the plant the largest generating facility in the US with a total capacity of nearly 5 GW.<sup>17</sup>

Despite its successful completion, the Vogtle project roadmap serves as a classic example of infrastructure risk materialization. The construction, which began in 2009–2013, was plagued by catastrophic delays and cost overruns.<sup>18</sup> The original budget was estimated at around \$14 billion, with expected completion dates in 2016 (Unit 3) and 2017 (Unit 4).<sup>18</sup> The final cost exceeded \$30 billion, and the timeline slipped by seven years.<sup>18</sup> The fundamental cause of these figures was the degradation of the national supply chain and a shortage of a qualified workforce capable of building facilities to strict nuclear-grade standards, ultimately leading to the bankruptcy of the reactor developer—Westinghouse—in 2017.<sup>16</sup> Completing the project required the emergency involvement of the Bechtel Corporation, which managed to optimize processes and reduce the construction costs for the fourth unit by 30% compared to the third unit through the "learning by doing" effect.<sup>16</sup>

### Turkey: Akkuyu NPP and the Innovative BOO Model

The Akkuyu NPP project, being implemented on Turkey's Mediterranean coast, is the world's largest nuclear construction site, where four power units featuring VVER-1200 reactors with a total capacity of 4.8 GW are being built simultaneously.<sup>14</sup> Turkey, as a newcomer country to the nuclear sphere, chose a financial-legal model unprecedented in global practice: Build-Own-Operate (BOO).<sup>21</sup>

Under this model, the Russian State Corporation "Rosatom" acts not only as the technology supplier and general contractor but also as the 100% owner of the plant, fully financing the capital costs estimated at \$20 billion.<sup>21</sup> The Turkish government, in turn, provides guarantees to purchase a specific volume of electricity at a fixed tariff (Power Purchase Agreement - PPA) over 15 years from the launch of each unit.<sup>21</sup>



This model shifts construction and macroeconomic risks onto the vendor, making it highly attractive for the host country. The project roadmap shows steady progress: the first concrete was poured in 2018, and full-scale commissioning and startup work on Unit 1 began in 2024–2025. The physical and energy startup of the first reactor is expected during 2026.<sup>21</sup> The project also demonstrates a high degree of localization, with Turkish contractors actively involved in civil construction and the supply of non-nuclear equipment.<sup>24</sup>

## **People's Republic of China: Serial Deployment and Technological Autonomy**

China absolutely dominates the global market for new NPP construction. Out of 52 reactors that started construction worldwide from 2017 to 2024, 25 are based on Chinese technologies.<sup>3</sup> In the 2023–2026 period, the roadmaps of Chinese projects demonstrated outstanding efficiency based on the concept of serial construction (fleet approach).

The cornerstone of the Chinese strategy has been the third-generation Hualong One (HPR1000) reactor. Thanks to peak standardization, centralized state financing, and a finely tuned national supply chain, the average construction time for Hualong One reactors ranges between 5.3 and 6.1 years from the pouring of first concrete to commercial operation.<sup>25</sup> For example, the Zhangzhou-2 unit (CNNC) entered commercial operation in January 2026, just 5.3 years after construction began.<sup>25</sup> In parallel, China is successfully implementing CAP1000 reactor projects (an advanced localized variant of the American AP1000) and high-temperature gas-cooled small reactors (HTR-PM), the first of which (Shidaowan) entered commercial operation in late 2023 – early 2024.<sup>25</sup> China's experience proves that radical reductions in capital costs and adherence to schedules are achievable only with a continuous stream of orders, allowing contractors to retain their competencies.

## **People's Republic of Bangladesh: The Rooppur Project as a Newcomer Adaptation**

The Rooppur NPP project, featuring two VVER-1200 reactors, is another example of creating nuclear infrastructure from scratch with robust financial and technical support from a vendor. Construction, which began in 2017, is being carried out by Rosatom. Financing is secured through a state export credit from the Russian Federation covering 90% of the contract's value.<sup>15</sup> Despite logistical difficulties exacerbated by the global pandemic and sanctions restrictions on Russian financial institutions since 2022, the project is in its final stages. Grid connection and the launch of Unit 1 and Unit 2 are expected in 2026 and 2027, respectively.<sup>15</sup> For Serbia, this project is interesting from the perspective of managing a complex intergovernmental financial architecture and overcoming geopolitical barriers during transactions.



Country and NPP	Technology (Generation)	Implementation Format / Vendor	Construction Start Year	Commissioning	Financial Model
<b>USA (Vogtle 3/4)</b>	AP1000 (III+)	Traditional EPC (Westinghouse / Bechtel)	2009 / 2013	2023 (Unit 3), 2024 (Unit 4)	Corporate capital + US state guarantees
<b>Turkey (Akkuyu 1-4)</b>	VVER-1200 (III+)	BOO - Build-Own-Operate (Rosatom)	2018 (Unit 1)	Expected in 2026 (Unit 1)	100% vendor investment + PPA
<b>China (Zhangzhou 2)</b>	HPR1000 (III+)	Serial national project (CNNC)	2020	January 2026	State corporate financing
<b>Bangladesh (Rooppur 1/2)</b>	VVER-1200 (III+)	Intergovernmental EPC (Rosatom)	2017	Expected in 2026/2027	Russian sovereign export credit (90%)
<b>UAE (Barakah 1-4)</b>	APR-1400 (III)	G2G Joint Venture (KEPCO)	2012 (Unit 1)	2021 (Unit 1) — 2024 (Unit 4)	KEXIM loan + UAE and South Korean capital

## Deconstruction of the "Barakah" Model (UAE): The Gold Standard for Developing Programs

Among all global projects introducing nuclear energy over recent decades, it is the Barakah NPP model in the United Arab Emirates that has been recognized by the IAEA and the international community as the benchmark roadmap for newcomer countries.<sup>11</sup> In early 2026, during bilateral meetings in Dubai, the leadership of the Emirates Nuclear Energy Corporation (ENEC) expressed their readiness to transfer this model to Serbia to serve as the foundation for its own nuclear program.<sup>12</sup> Understanding the mechanisms



behind the UAE's success is critically important for shaping the strategy of the Republic of Serbia.

The Barakah project comprises four South Korean-designed APR-1400 reactors with a total capacity of 5.6 GW.<sup>29</sup> The plant single-handedly provides up to 25% of the UAE's electricity consumption and prevents the emission of 22 million tons of carbon dioxide annually, making it the largest decarbonization project in the region.<sup>29</sup> The program's success is due to the flawless integration of political will, advanced IAEA methodologies, a transparent governance structure, and innovative financing.<sup>30</sup>

## Chronology and Deployment Stages of the Barakah Project

The UAE roadmap demonstrated astonishing efficiency, especially when compared to projects in the US and Europe, staying within strict time and budget constraints. The program's deployment can be divided into several key phases:

- 1. Political Justification and Institutionalization (2008–2009)** In April 2008, the UAE government published a comprehensive "Policy of the United Arab Emirates on the Evaluation and Potential Development of Peaceful Nuclear Energy."<sup>31</sup> The document was based on six principles: complete operational transparency, non-proliferation (forgoing domestic uranium enrichment and spent fuel reprocessing), the highest safety standards, collaboration with the IAEA, partnerships with responsible nations, and long-term sustainability.<sup>31</sup> In October 2009, the Federal Nuclear Law was adopted, legally cementing these standards, and in December of the same year, the ENEC corporation was established and the general contractor (the KEPCO consortium) was selected.<sup>31</sup>
- 2. Licensing and Oversight (2010–2012)** In parallel with ENEC, an independent regulator was created—the Federal Authority for Nuclear Regulation (FANR). Separating the functions of the owner (ENEC) and the supervisor (FANR) became the cornerstone of international trust in the project.<sup>29</sup> In April 2010, ENEC submitted applications for environmental assessments and preliminary site works, and in December 2010, an application for the construction license of Units 1 and 2.<sup>31</sup> The licensing process took a year and a half, and in July 2012, FANR issued the permit, after which the pouring of the first concrete commenced.<sup>31</sup>
- 3. Construction Phase and Technology Adaptation (2012–2018)** Construction of the four units was carried out in a cascading method with an interval of about one year: Unit 1 in July 2012, Unit 2 in May 2013, Unit 3 in September 2014, and Unit 4 in September 2015.<sup>31</sup> The base design (reference unit) consisted of the Korean Shin-Kori 3 and 4 reactors, but the APR-1400 technology was adapted to the UAE's climatic conditions (enlarged heat exchangers for the warmer waters of the Persian Gulf, reinforced pumps, 50 Hz cooling systems).<sup>32</sup> The construction of the first power unit was completed in March 2018.<sup>31</sup> The delay between the end of construction (2018) and start-up (2020) was caused by FANR's stringent requirements regarding the qualifications of local operational staff and identified issues with pilot-operated safety relief valves (POSRV), which required additional safety checks.<sup>33</sup> The UAE opted to sacrifice the schedule in favor of uncompromising safety.
- 4. Commissioning and Commercialization (2020–2024)** Following thorough preparation and the certification of the first batches of reactor operators (including UAE citizens) in July 2019<sup>31</sup>, Unit 1 was connected to the grid in August 2020 and entered commercial operation in April 2021.<sup>33</sup> This



was followed by Unit 2 (March 2022), Unit 3 (February 2023), and Unit 4, which was connected to the grid in March 2024 and transitioned into commercial operation in September 2024.<sup>33</sup>

Key Project Milestone	Unit 1	Unit 2	Unit 3	Unit 4
Issuance of Construction License	July 2012	July 2012	Sept. 2014	Sept. 2014
Pouring of First Concrete	July 2012	May 2013	Sept. 2014	Sept. 2015
Reactor Vessel Installation	May 2014	June 2015	July 2016	Feb. 2017 (condenser)
Grid Connection	August 2020	Sept. 2021	October 2022	March 2024
Commercial Operation	April 2021	March 2022	Feb. 2023	Sept. 2024
Data source: ENEC Timeline, WNN reports, and IAEA PRIS <sup>31</sup>				

## Institutional and Financial Architecture of Barakah

A distinctive feature of the Emirati model was the deep integration of the technology supplier into the plant's long-term lifecycle. The UAE didn't just purchase reactors on a "turnkey EPC" basis; they created a joint venture. In October 2016, ENEC and KEPCO finalized a deal to form **Barakah One Company** (ENEC share — 82%, KEPCO — 18%), which manages the project's commercial and financial aspects, as well as the **Nawah Energy Company** (with the same share distribution), responsible for operations and maintenance.<sup>14</sup>

The total project cost is estimated at \$24.4 billion USD (according to other estimates accounting for inflation and infrastructure—up to \$32 billion).<sup>33</sup> Financing was structured as follows: \$19.6 billion in direct loans (including \$2.5 billion from the Export-Import Bank of Korea (KEXIM), \$16.2 billion from the Abu Dhabi government, and \$250 million from commercial banks), and \$4.7 billion in equity commitments from ENEC and KEPCO.<sup>32</sup> To guarantee the return on investment, Barakah One Company signed a long-term Power Purchase Agreement with the Abu Dhabi Water and Electricity Company.<sup>31</sup>

This model ensures the South Korean consortium has "skin in the game." KEPCO not only builds the plant but also profits from its safe and efficient operation over its 60-year lifecycle, minimizing the risks of hidden defects or technology orphaning of the facility.<sup>35</sup>



## Development of Human Capital and Supply Chains

The UAE demonstrated how a nuclear program can become an engine for the national economy. More than 2,000 local Emirati companies passed rigorous certification to participate in the Barakah project's supply chain, providing non-nuclear equipment, cables, piping, and concrete.<sup>11</sup> For instance, Emirates Steel supplied over 100,000 tons of high-strength steel, upgrading its own manufacturing standards to "nuclear-grade."<sup>36</sup>

In terms of personnel, the UAE invested in simulators and training facilities from day one (launched in 2014 and 2015), ensuring the training of UAE citizens at Korean sites and domestically.<sup>31</sup> The "Energy Pioneers" program trained hundreds of operating engineers, a practice highly relevant for Serbia, which currently faces a deficit of specialized personnel.

## IAEA Methodology: The Infrastructure Compass for Newcomers

The Barakah model is inextricably linked to the IAEA methodology known as the "Milestones Approach".<sup>37</sup> The UAE became the first state to pass through all three phases of this approach and successfully invite an IAEA Integrated Nuclear Infrastructure Review (INIR) mission to assess its operational readiness.<sup>38</sup> This methodology is the de facto international standard and is mandatorily included in the roadmap for the Republic of Serbia, being developed jointly with EDF.

The IAEA approach divides the process of creating a nuclear program into three phases lasting between 10 and 15 years, each ending with a key "Milestone" requiring political decisions:

- **Phase 1 (Consideration and Justification):** The period before an official decision is made to launch a nuclear program. It concludes with **Milestone 1** — readiness to make a knowledgeable commitment to the program.<sup>37</sup>
- **Phase 2 (Preparation and Contracting):** Establishing the regulatory framework, selecting the technology, structuring financing, and site preparation. It concludes with **Milestone 2** — readiness to invite bids or negotiate a contract for the first nuclear power plant (EPC).<sup>37</sup>
- **Phase 3 (Construction and Commissioning):** Construction management, oversight, staff training, and systems testing. It concludes with **Milestone 3** — readiness to commission and operate the first nuclear power plant.<sup>37</sup>

To successfully pass through each phase, the state must methodically address **19 infrastructure issues**, none of which can be ignored.<sup>37</sup> These include: national position, nuclear safety, management, funding and financing, legal framework, safeguards, regulatory framework, radiation protection, electrical grid, human resource development, stakeholder involvement, site and supporting facilities, environmental protection, emergency planning, nuclear security, nuclear fuel cycle, radioactive waste management, industrial involvement, and procurement.<sup>39</sup>

A lack of progress in even one of these 19 areas in the early stages inevitably leads to financial disasters



during the construction phase, as global experience has proven.<sup>41</sup>

## Geopolitical and Legal Barriers: The Dispute Over APR-1400 Technology

When analyzing Serbia's stated intent to utilize the "Barakah" model<sup>12</sup>, it is necessary to clearly differentiate between the institutional and technological components of this model. While the managerial, financial, and regulatory experience of the UAE is fully applicable, the direct copying of the technology—selecting the APR-1400 reactor from the KEPCO consortium—is currently blocked for Serbia by a series of critical legal and geopolitical obstacles.

Over the past few years, the global nuclear market has witnessed an unprecedented legal battle between the American corporation Westinghouse Electric Company (WEC) and South Korea's KEPCO and KHNP.<sup>43</sup> The subject of the dispute is the APR-1400 reactor technology upon which the Barakah NPP is built. Historically, the APR-1400 is an evolution of the American System 80+ technology, a license for which was transferred to the Korean side by Combustion Engineering (later acquired by Westinghouse) in the 1990s.<sup>44</sup>

Westinghouse argued that South Korean companies could not export these reactors to third countries without explicit permission from WEC and the US Department of Energy, as the design falls under strict US export control regulations (10 C.F.R. Part 810) designed to prevent the unauthorized transfer of American nuclear secrets.<sup>44</sup> When KEPCO and KHNP attempted to enter markets in Poland, Saudi Arabia, and the Czech Republic with the APR-1400 and APR-1000 technologies, Westinghouse initiated lawsuits in a US District Court.<sup>43</sup> In the case of the UAE in 2009, the conflict was settled when Westinghouse joined the consortium, received a significant volume of subcontracting work, and approved the deal.<sup>46</sup> However, in subsequent attempts at independent Korean exports to Europe, the American side blocked the deals.

In January 2025, under intense pressure from the US and South Korean governments, Westinghouse and KEPCO/KHNP signed a confidential global settlement agreement resolving the dispute.<sup>47</sup> Despite the secrecy of the details, industry experts and specialized media report that the settlement imposes severe restrictions on South Korea. KHNP is expected to pay substantial royalties for each exported reactor. Furthermore, under the terms of the agreement, South Korea is effectively barred from participating independently in tenders for NPP construction in North America, the European Union (except for the previously approved project in the Czech Republic), the UK, and several other countries.<sup>47</sup> Following this agreement, KHNP was forced to officially withdraw its bids and scale back activities in the markets of Poland, Sweden, Slovenia, and the Netherlands.<sup>45</sup>

For Serbia, this means that the South Korean consortium cannot become the general contractor or an independent supplier of reactor technology without direct, costly, and geopolitically complex involvement from the US (Westinghouse). In other words, importing the "Barakah" technology (APR-1400) is impossible. This circumstance explains why Belgrade, while aiming to implement the UAE's *institutional model*, has decisively pivoted towards France and EDF regarding the *choice of technology* and technical



expertise.<sup>12</sup>

## Current Status of Serbia's Nuclear Program (2024–2026) and the Role of EDF

Striving to ensure the systemic stability of its energy supply for decades to come and following the Energy Development Strategy to 2040 (with projections to 2050), the Republic of Serbia transitioned from political declarations to forming a tangible architecture for its nuclear project between 2024 and 2026.

The starting point was the signing in July 2024 of a historic Memorandum of Understanding on the development of the peaceful use of atomic energy. The document united the efforts of five key ministries and over 20 scientific institutes, faculties, and energy companies of the country (including the Vinča Institute, SRBATOM, the University of Belgrade, EPS, and EMS).<sup>10</sup> Shortly thereafter, in November 2024, the National Assembly officially repealed the anti-nuclear law of 1989.<sup>9</sup>

In September 2024, following a tender, Serbia's Ministry of Mining and Energy awarded a contract to a consortium of the French state-owned electricity company Électricité de France (EDF) and the engineering group Egis Industries to develop a "Preliminary Technical Study on the Peaceful Use of Nuclear Energy in Serbia."<sup>13</sup> Work on the study was completed in July 2025, and in March 2026, in the presence of a delegation led by EDF Chairman and CEO Bernard Fontana, the document was presented to the public and experts at the Chamber of Commerce in Belgrade.<sup>13</sup>

### Conclusions of the EDF Preliminary Study

The study, based on IAEA methodology, came to an unequivocal conclusion: integrating nuclear energy is a strategically justified and critical step for the stability of Serbia's energy system and its energy sovereignty.<sup>13</sup> Technical and grid modeling demonstrated that:

- The introduction of a single 1,000 MW power unit will reduce the country's dependence on electricity imports by 55%.<sup>7</sup>
- Integrating a 1,200 MW unit will cut imports by 66%.<sup>7</sup>
- Building two 1,200 MW units (totaling 2,400 MW) will completely transform Serbia's status, turning it from a net importer into a regional net exporter of clean electricity by 2045.<sup>7</sup>
- Nuclear generation is slated to replace coal as the baseload. Under a scenario deploying 2,400 MW of nuclear capacity, electricity generation based on lignite (which currently dominates the energy mix) would fall by 66%, and gas-fired generation by 8%.<sup>7</sup>

The study does not impose a specific reactor model on Serbia but presents an objective comparative analysis of technological options available on the market:

- Traditional large-capacity pressurized water reactors (PWR): French EPR1200 (developed by EDF), American AP1000 (Westinghouse), Russian VVER-1200 (Rosatom), and Korean APR1400 (KEPCO/KHNP).<sup>7</sup>
- Small Modular Reactors (SMR): AP300 (USA), BWRX-300 (GE Hitachi), Rolls-Royce SMR (UK), Holtec



SMR, and the French Nuward.<sup>7</sup>

Serbian President Aleksandar Vučić emphasized at the Nuclear Energy Summit in Brussels that Serbia's strategic goal is to achieve at least 1,200 MW of nuclear capacity.<sup>9</sup> Minister of Energy Dubravka Đedović Handanović noted that by 2032 (the expected time for making a technology selection decision), SMR technologies will reach the necessary commercial maturity, making them a fully-fledged alternative to large-capacity reactors.<sup>52</sup> In parallel, to diversify risks, Serbia engaged in dialogue with the state corporation "Rosatom"<sup>52</sup> and discussed the possibility of acquiring a 5-10% stake in the expansion project of the Paks NPP in neighboring Hungary.<sup>13</sup>

## Disputes and Implementation Challenges

The roadmap has also encountered its first domestic political barriers. Independent Serbian experts (e.g., professors from the Universities of Belgrade and Novi Sad) expressed concerns regarding the participation of the French company Egis Industries in the consortium. The criticism is based on allegations of the company's involvement in global corruption scandals, as well as the fact that Egis served as the construction supervisory body for facilities such as the Novi Sad railway station, where incidents were previously recorded.<sup>42</sup> Furthermore, experts criticize the lack of transparency in the process, noting that the full technical study by EDF was presented to a narrow circle of people 8 months after its actual completion in July 2025.<sup>12</sup> This underscores the need to strengthen the "Stakeholder Involvement" component, as required by the IAEA methodology.

## Adapted Roadmap for the Republic of Serbia: Integrating the 19 Infrastructure Steps

The roadmap proposed by EDF and based on IAEA standards structures the development of the Serbian nuclear program into three phases, covering 19 infrastructure areas. Below is a detailed adaptation of this model for Serbia, synthesizing the experience of the Barakah NPP and the recommendations of the French engineers.<sup>13</sup>

### Phase 1: Justification, Institutionalization, and Decision Readiness (2024–2027)

The goal of this phase is to achieve Milestone 1 (Ready to make a knowledgeable commitment to a nuclear power program). It is expected that the Serbian government will make its final sovereign decision by mid-2027.<sup>13</sup> During this period, no vendor is selected, but the institutional foundation is laid.



IAEA Infrastructure Issue	Status and Necessary Actions by the Republic of Serbia (Phase 1)	"Barakah" Model Experience (UAE) to Adopt
<b>1. National Position</b>	Formation of a Nuclear Energy Program Implementing Organization (NEPIO). Serbia announced its creation (government approval expected by late March 2026) based on relevant ministries and the academic community. <sup>52</sup>	The UAE created NEPIO based on the Executive Affairs Authority of Abu Dhabi (ENEC), subordinating it to the country's highest leadership to avoid interagency conflicts.
<b>2. Nuclear Safety</b>	Adoption of the basic principles prioritizing safety over commercial interests. Serbian institutes need to update their knowledge base, which lags by 35 years.	Integration of international experts. Establishing an International Advisory Board on safety from day one of the project.
<b>3. Management</b>	Establishing a clear hierarchy and decision-making processes within the future NPP operator and the regulatory body. <sup>13</sup>	In the UAE, ENEC acted as the owner, and the subsequently created Nawah acted as the operator, clearly dividing responsibilities.
<b>4. Funding &amp; Financing</b>	Sourcing grants for pre-project studies. Serbia has already requested funds from the French Development Agency (AFD) to cover Phase 1. <sup>54</sup> Modeling of "Owner's Costs" begins. <sup>42</sup>	The UAE financed Phase 1 from the state budget (\$100 million startup capital for ENEC).
<b>5. Legal Framework</b>	The moratorium has been repealed. <sup>8</sup> Development of a new comprehensive Nuclear Law regulating liability for nuclear damage, export controls, and licensing is required.	Adoption of a transparent Federal Nuclear Law (2009), laying the foundation for trust from the IAEA and the US (123 Agreement).
<b>6. Safeguards</b>	Updating commitments to the IAEA, ratification of the	The UAE implemented the "Gold Standard," voluntarily



<b>IAEA Infrastructure Issue</b>	<b>Status and Necessary Actions by the Republic of Serbia (Phase 1)</b>	<b>"Barakah" Model Experience (UAE) to Adopt</b>
	Additional Protocol (if necessary).	renouncing enrichment and reprocessing technologies on its territory.
<b>7. Regulatory Framework</b>	Transforming the existing SRBATOM directorate into a strong, independent Federal Supervisory Authority with a sufficient budget and veto power over any activities. <sup>13</sup>	Creation of FANR (Federal Authority for Nuclear Regulation), which proved its independence by delaying the launch of Unit 1 for additional checks.
<b>8. Radiation Protection</b>	Audit and modernization of ambient radiation monitoring systems in the country, establishing dose limits for future workers.	Strict implementation of IAEA standards regarding radiation protection of the public and the environment.
<b>9. Electrical Grid</b>	The EDF study indicates the need to modernize the 400 kV EMS grids (Elektromreža Srbije) to accommodate 1,200 MW of power. Investments to reconstruct 13,000 km of transmission lines are estimated at €2.4 billion. <sup>55</sup>	The UAE modernized Abu Dhabi's transmission capacities (Abu Dhabi Transmission & Despatch Company) well in advance to accept 5.6 GW.
<b>10. Human Resources</b>	A critical issue for Serbia. A concept for multi-level nuclear engineering training is being developed at the University of Belgrade. <sup>42</sup> EDF is being engaged to identify and train engineering personnel. <sup>13</sup>	The UAE launched the "Energy Pioneers" program, conducting mass training of UAE citizens in South Korea on simulators before construction even began.
<b>11. Stakeholder Involvement</b>	Overcoming post-Chernobyl syndrome and distrust. Criticism over the lack of transparency regarding the EDF report necessitates launching open public debates to form a social consensus. <sup>8</sup>	ENEC conducted large-scale surveys: 92% of the population recognized the Barakah NPP as vital for the country's future. Transparency as a strategy.



IAEA Infrastructure Issue	Status and Necessary Actions by the Republic of Serbia (Phase 1)	"Barakah" Model Experience (UAE) to Adopt
<b>12. Site &amp; Supporting Facilities</b>	A process is underway to identify multiple potential sites to choose the optimal one. <sup>13</sup> Logistical challenges of delivering heavy equipment (reactor vessel) via the Danube, as well as transforming coal basins (Kostolac), are being analyzed. <sup>42</sup>	The UAE investigated 10 potential sites before selecting the Persian Gulf coast (far from seismic zones and megacities).
<b>13. Environmental Protection</b>	Developing terms of reference for an Environmental Impact Assessment (EIA), considering water intake from rivers for cooling (Danube, Sava).	Preparation of the EIA (2010), assessing the impact of warm water discharge on the marine ecosystem and building artificial reefs.
<b>14. Emergency Planning</b>	Integrating nuclear risks into Serbia's civil protection system, determining evacuation zones around potential sites.	Developing national response plans in accordance with post-Fukushima IAEA protocols.
<b>15. Nuclear Security</b>	Developing a strategy to protect nuclear facilities from terrorist threats (including cyberattacks and commercial airliner crashes), analyzing the Design Basis Threat (DBT).	Integrating cybersecurity and physical protection at the design stage (prior to pouring the first concrete).
<b>16. Nuclear Fuel Cycle</b>	Defining a strategy: purchasing fresh fuel from the reactor vendor or creating a diversified pool of suppliers.	Concluding long-term fuel supply contracts with international consortiums to preclude political blackmail.
<b>17. Radioactive Waste Management</b>	Formulating a strategy for disposing of low- and intermediate-level waste within Serbia, and a policy regarding spent nuclear fuel (SNF). <sup>12</sup>	Establishing a special fund into which a portion of the revenue from each kWh sold is transferred for future decommissioning and RAW storage.

IAEA Infrastructure Issue	Status and Necessary Actions by the Republic of Serbia (Phase 1)	"Barakah" Model Experience (UAE) to Adopt
18. Industrial Involvement	Auditing the Serbian construction, metallurgical, and machine-building industries. The goal is to maximize the localization of the non-nuclear island's construction.	The participation of over 2,000 Emirati companies in the Barakah project. Elevating the standards of local business to "nuclear-grade".
19. Procurement	Developing transparent anti-corruption tender procedures, establishing the architecture for future contracts (EPC, BOO, PPA).	Separating procurement: specialized nuclear equipment—from the vendor; construction materials and non-critical components—via open bidding.

## Phase 2: Technology Selection, Structuring, and Contracting (2028–2032)

It is expected that by 2032, Serbia will be fully prepared institutionally and regulatorily to conclude contracts, and SMR technology will have reached sufficient referential maturity on global markets.<sup>13</sup> This phase is aimed at achieving Milestone 2 (Ready to invite bids/negotiate a contract for the first nuclear power plant).

### Key Processes of Phase 2:

1. **Final Selection of Technology and Vendor.** Relying on the EDF study, the Serbian government will have to choose between building a single large unit (e.g., EPR1200) or a cascade of Small Modular Reactors (SMRs). The vendor choice will be dictated not only by technical parameters but also by the readiness to provide financing. Given the close ties with France and the KEPCO-Westinghouse dispute, EDF stands a high chance of becoming the general contractor, offering European localization and strategic autonomy.
2. **Structuring the Financial Model.** If Serbia chooses the UAE route (an EPC contract with joint management), it will have to attract massive debt instruments. The Mankala model or a joint venture where Serbia invests capital alongside the exporting country's Export Credit Agency (ECA) (e.g., Bpifrance) appears optimal. The discussed option of Serbia joining the Emirati ENEC's global investment program could provide a necessary influx of capital from the Gulf States, diversifying Belgrade's debt burden.<sup>12</sup>
3. **Site Licensing.** Serbia's independent regulator (fully operational by this time) must issue a site license for the NPP based on detailed geological, hydrological, and seismic surveys, along with an approved Environmental Impact Assessment (EIA).
4. **Signing the EPC Contract.** The execution of a highly complex legal document for Engineering, Procurement, and Construction. Experiences in the UAE and the USA show that fixed-price



contracts are preferable for the client; however, vendors (in light of Westinghouse's losses) increasingly insist on open-book contracts or a hybrid distribution of cost overrun risks.

### Phase 3: Construction, Commissioning, and Integration (2033–2040)

The final phase, aimed at achieving Milestone 3 (Ready to commission and operate the first nuclear power plant), is the most capital-intensive. The physical construction of the plant, according to the most optimistic forecasts (taking China and the UAE as benchmarks), will take between 6 and 9 years.<sup>25</sup> Serbia's goal is to connect the power unit to the grid and enter commercial operation in 2040.<sup>13</sup>

#### Key Processes of Phase 3:

1. **Construction Oversight and Quality Control.** Having independent engineering oversight is critical. As the Vogtle project demonstrated, poor-quality design documentation in the early stages leads to rework and billions in losses. Disputes over the competencies of the consulting firm Egis in Serbia underscore the importance of engaging international organizations (possibly structures under the auspices of the IAEA or independent engineering groups from third countries) to audit the construction's progress.<sup>42</sup>
2. **Anticipatory Operator Training.** The NPP operator in Serbia (the national energy company EPS or a new JV) must commission a Full-Scope Simulator at least 3-4 years prior to the completion of the reactor's physical construction, following the UAE's example (where simulators began operating in 2014-2015, long before the launch of Unit 1).<sup>31</sup> This will allow the national regulator to certify local reactor engineers before the initial loading of nuclear fuel.
3. **Localization of Supply Chains.** Serbian industry must be integrated into the construction processes of the "non-nuclear island" facilities (turbine hall, cooling towers, administrative buildings). This will create thousands of jobs and ensure political support for the project domestically.
4. **Commissioning (Cold/Hot Functional Testing).** Physical startup, fuel loading, and power startup require months of testing. The Serbian regulator must demonstrate the same uncompromising independence as the Emirati FANR, refusing to succumb to political pressure to accelerate timelines at the expense of safety.

## Integration of National Expert Potential: The Role of the Nuclear Serbia Platform, NUCON, and CONSILIO

The successful execution of the IAEA's 19 infrastructure steps and the adaptation of complex foreign models (such as the Emirati "Barakah") are impossible without consolidating national expertise and professional project management at the local level. In this context, a critically important institutional and consulting role in the Republic of Serbia is meant to be played by specialized structures: the engineering company NUCON, the consulting bureau CONSILIO, and the digital information platform they created, Nuclear Serbia.

It should be noted that this strategic analysis, along with previously prepared specialized materials (more than 80), is published on the Nuclear Serbia portal specifically on behalf of NUCON and CONSILIO. This de



facto positions them as key thought leaders in shaping a well-founded architecture for the nuclear renaissance in Serbia. Their involvement in implementing the roadmap spans three core vectors:

### **1. Engineering Expertise and Technical Oversight (NUCON)**

Relying on a wealth of 50 years of experience participating in actual nuclear construction projects worldwide, NUCON can assume the vital functions of technical audit and "Owner's Engineer" during Phases 2 and 3 of the IAEA program. Given the lack of local experience, NUCON is capable of ensuring the development of strict criteria for EPC contracts, quality control during the physical construction phase, the adaptation of international nuclear standards to the Serbian context, and the management of Owner's Costs.

### **2. Strategic Management, Localization, and GR (CONSILIO)**

The consulting bureau CONSILIO, which specializes in supporting high-tech megaprojects, is capable of functioning as an independent Project Management Office (PMO). Given the complex geopolitical and investment environment, CONSILIO's tasks include navigating interactions between Serbian government bodies (including NEPIO and SRBATOM) and international vendors. Of particular importance is the development of localization strategies (Industrial Involvement — the IAEA's 18th step), which will allow Serbian companies to enter the supply chains of the "non-nuclear island," as well as the financial structuring of the project to attract investment.

### **3. Digital Advocacy and Building Public Consensus (Nuclear Serbia Platform)**

Implementing the 11th step of the IAEA's infrastructure methodology ("Stakeholder Involvement") is one of the most challenging aspects in a country with a long history of a nuclear moratorium. The Nuclear Serbia platform serves as a central aggregator of expert opinions and objective industry analytics. By publishing materials in multiple languages, the platform performs a crucial educational function, helping to overcome radiophobia, restore trust in the peaceful atom, and ensure the transparency of decisions made for civil society and investors.

The comprehensive interaction of these three institutions provides the Government of Serbia with the necessary combination of rigorous engineering control and intellectual "soft power," guaranteeing that the development of the national nuclear program will be based on the highest standards of professionalism and international practice.

## **Conclusion**

The Republic of Serbia's decision to repeal the anti-nuclear moratorium and integrate nuclear energy into its national energy mix by 2040 represents a strategic imperative dictated by the logic of the global energy transition and the need to ensure economic sovereignty. The stated goal—launching at least 1,200 MW of baseload nuclear generation to replace aging coal capacities—is ambitious but achievable with strict adherence to international methodology.

The deconstruction of global experience shows that the technological perfection of the reactor is secondary to the institutional and financial efficiency of the program. The catastrophic cost overruns at



the Vogtle NPP in the USA contrast with the benchmark implementation of the Barakah project in the UAE and the assembly-line production of Hualong One reactors in China.

Serbia's intention to implement the "Barakah" model is the most sound managerial decision. However, this adoption will be limited to adopting the institutional algorithm: integrating all 19 of the IAEA's infrastructure issues, strictly separating the functions of the owner, operator, and independent regulator, making anticipatory investments in human capital, and creating international joint ventures to distribute macroeconomic risks. Given the global licensing settlement between Westinghouse and South Korea's KEPCO, which blocks the direct export of APR-1400 reactors to Europe without US participation, Serbia will require a different technological vendor.

The strategic partnership with France's EDF and the development of the preliminary technical study have already laid the foundation for Phase 1. The upcoming 10–15 years will demand unprecedented managerial discipline from the Serbian government. The quality of the drafting of national nuclear legislation, the provision of complete political independence for the supervisory body (SRBATOM/the new regulator), and a transparent selection system for EPC contractors will be the decisive factors determining whether the Serbian nuclear program becomes a catalyst for regional economic growth or a burden on future generations. The effective implementation of the presented roadmap will allow Serbia to join the elite club of states possessing environmentally clean, independent, and stable nuclear generation by 2040.



## Sources

1. Nuclear energy in an era of total uncertainty: The global market crisis and Serbia's strategy, дата последњег обраћања: априла 17, 2026, <https://nuclearserbia.rs/opinions/nuclear-energy-in-an-era-of-total-uncertainty-the-global-market-crisis-and-serbias-strategy>
2. Serbia requests funding for first phase of nuclear program - eKapija, дата последњег обраћања: априла 17, 2026, <https://185.29.102.41/en/news/5449177/serbia-requests-funding-for-first-phase-of-nuclear-program>
3. Executive Summary – The Path to a New Era for Nuclear Energy – Analysis - IEA, дата последњег обраћања: априла 17, 2026, <https://www.iea.org/reports/the-path-to-a-new-era-for-nuclear-energy/executive-summary>
4. Serbia and the UAE on cooperation: is the "Baraka model" good for Serbia? - NuclearSerbia, дата последњег обраћања: априла 17, 2026, <https://nuclearserbia.rs/news/serbia-and-the-uae-on-cooperation-is-the-baraka-model-good-for-serbia>
5. World Nuclear Outlook Report, дата последњег обраћања: априла 17, 2026, [https://world-nuclear.org/images/articles/World-Nuclear-Outlook-Report\\_dfed5656.pdf](https://world-nuclear.org/images/articles/World-Nuclear-Outlook-Report_dfed5656.pdf)
6. Civil nuclear: roadmap to 2050 (accessible webpage) - GOV.UK, дата последњег обраћања: априла 17, 2026, <https://www.gov.uk/government/publications/civil-nuclear-roadmap-to-2050/civil-nuclear-roadmap-to-2050-accessible-webpage>
7. Serbia Study Lays Out Roadmap To First Nuclear Plant By 2040 - NucNet, дата последњег обраћања: априла 17, 2026, <https://www.nucnet.org/news/serbia-study-lays-out-roadmap-to-first-nuclear-plant-by-2040-3-5-2026>
8. The Debate on a Nuclear Energy Roadmap Continues in Serbia, дата последњег обраћања: априла 17, 2026, <https://www.euronuclear.org/news/the-debate-on-a-nuclear-energy-roadmap-continues-in-serbia/>
9. Serbia - World Nuclear Outlook Report, дата последњег обраћања: априла 17, 2026, <https://world-nuclear.org/our-association/publications/world-nuclear-outlook-report/serbia---world-nuclear-outlook-report>
10. Preliminary Technical Study on the Application of Nuclear Energy in Serbia presented, дата последњег обраћања: априла 17, 2026, <https://www.ekapija.com/en/news/5480835/preliminary-technical-study-on-the-application-of-nuclear-energy-in-serbia-presented>
11. Barakah / How UAE Nuclear Project Has Set Standard For Newcomer Countries - NucNet, дата последњег обраћања: априла 17, 2026, <https://www.nucnet.org/news/how-uae-nuclear-project-has-set-standard-for-newcomer-countries-9-2-2021>
12. Serbia and UAE Nuclear Cooperation: Is the “Barakah Model” a Good Fit for Serbia?, дата последњег обраћања: априла 17, 2026, <https://nuklearnaperspektiva.com/index.php/2026/02/05/serbia-and-uae-nuclear-cooperation-is-the-barakah-model-a-good-fit-for-serbia/>
13. Serbia and EDF discuss roadmap to nuclear energy - World Nuclear ..., дата последњег обраћања: априла 17, 2026, <https://www.world-nuclear-news.org/articles/serbia-and-edf-discuss-roadmap-to-nuclear-energy>
14. ROADMAPS TO NEW NUCLEAR 2025, дата последњег обраћања: априла 17, 2026,



- [https://www.oecd-nea.org/upload/docs/application/pdf/2025-11/roadmaps\\_to\\_new\\_nuclear\\_-\\_brief\\_for\\_ministers\\_and\\_ceos.pdf](https://www.oecd-nea.org/upload/docs/application/pdf/2025-11/roadmaps_to_new_nuclear_-_brief_for_ministers_and_ceos.pdf)
15. Plans For New Reactors Worldwide - World Nuclear Association, дата последнего обращения: апреля 17, 2026, <https://world-nuclear.org/information-library/current-and-future-generation/plans-for-new-reactors-worldwide>
  16. Vogtle Units 3 and 4 - Bechtel, дата последнего обращения: апреля 17, 2026, <https://www.bechtel.com/projects/vogtle-units-3-and-4/>
  17. Vogtle Electric Generating Plant - Wikipedia, дата последнего обращения: апреля 17, 2026, [https://en.wikipedia.org/wiki/Vogtle\\_Electric\\_Generating\\_Plant](https://en.wikipedia.org/wiki/Vogtle_Electric_Generating_Plant)
  18. Plant Vogtle Unit 4 begins commercial operation - U.S. Energy Information Administration (EIA), дата последнего обращения: апреля 17, 2026, <https://www.eia.gov/todayinenergy/detail.php?id=61963>
  19. Status Report 2020, дата последнего обращения: апреля 17, 2026, [https://www.worldnuclearreport.org/IMG/pdf/wnisr2020-v2\\_hr.pdf](https://www.worldnuclearreport.org/IMG/pdf/wnisr2020-v2_hr.pdf)
  20. About the project | AKKUYU NÜKLEER A.Ş., дата последнего обращения: апреля 17, 2026, <https://akkuyu.com/en/about/info>
  21. Turkey nuclear power plant: Remarkable 2025 Launch Looms - PVKnowhow, дата последнего обращения: апреля 17, 2026, <https://www.pvknowhow.com/news/turkey-nuclear-power-plant-remarkable-2025-launch-looms/>
  22. Nuclear Power in Turkey, дата последнего обращения: апреля 17, 2026, <https://world-nuclear.org/information-library/country-profiles/countries-t-z/turkey>
  23. Key Highlights from the Turkish Nuclear Market in 2025, дата последнего обращения: апреля 17, 2026, <https://www.nuclearbusiness-platform.com/media/insights/key-highlights-from-the-turkish-nuclear-market-in-2025>
  24. AKKUYU NPP, дата последнего обращения: апреля 17, 2026, <https://rosatom-energy.ru/en/sustainability/aes-akkuyu/>
  25. Chinese reactor construction charts (January 2026 update) : r/nuclear - Reddit, дата последнего обращения: апреля 17, 2026, [https://www.reddit.com/r/nuclear/comments/1q2yaut/chinese\\_reactor\\_construction\\_charts\\_january\\_2026/](https://www.reddit.com/r/nuclear/comments/1q2yaut/chinese_reactor_construction_charts_january_2026/)
  26. Nuclear Infrastructure Development for Nuclear Power: IAEA Milestone Approach and IAEA Support, дата последнего обращения: апреля 17, 2026, [https://gnsn.iaea.org/main/tsof/Activity%20Documents%20%20Public/Training%20Programme%20-%20Interregional%20Training%20Course%20on%20external%20support%20and%20TSOs%20for%20a%20new%20nuclear%20power%20programme/04.11.2024/03%20IAEA%20Milestone%20Approach%20and%20IAEA%20Support\\_Moscow\\_November\\_2024.pdf](https://gnsn.iaea.org/main/tsof/Activity%20Documents%20%20Public/Training%20Programme%20-%20Interregional%20Training%20Course%20on%20external%20support%20and%20TSOs%20for%20a%20new%20nuclear%20power%20programme/04.11.2024/03%20IAEA%20Milestone%20Approach%20and%20IAEA%20Support_Moscow_November_2024.pdf)
  27. UAE First "Newcomer" In 27 Years To Start Nuclear Power Plant Construction, дата последнего обращения: апреля 17, 2026, <https://www.iaea.org/newscenter/news/uae-first-newcomer-27-years-start-nuclear-power-plant-construction>
  28. ENEC shares its roadmap for establishing nuclear program with Serbia - eKapija, дата последнего обращения: апреля 17, 2026, <https://www.ekapija.com/en/news/5437639/enec-shares-its-roadmap-for-establishing-nuclear-program-with-serbia>



29. Nuclear Power in the United Arab Emirates, дата последнего обращения: апреля 17, 2026, <https://world-nuclear.org/information-library/country-profiles/countries-t-z/united-arab-emirates>
30. UAE's Nuclear Power Journey Has Lessons for Newcomers as IAEA Restarts In-Person Reviews, дата последнего обращения: апреля 17, 2026, <https://www.iaea.org/newscenter/news/uaes-nuclear-power-journey-has-lessons-for-newcomers-as-iaea-restarts-in-person-reviews>
31. Timeline - Emirates Nuclear Energy Company, дата последнего обращения: апреля 17, 2026, <https://www.enec.ae/barakah-plant/timeline/>
32. KEPCO and ENEC enhance cooperation in nuclear energy - World ..., дата последнего обращения: апреля 17, 2026, <https://www.world-nuclear-news.org/articles/kepcos-and-enec-enhance-cooperation-in-nuclear-energy>
33. Barakah nuclear power plant - Wikipedia, дата последнего обращения: апреля 17, 2026, [https://en.wikipedia.org/wiki/Barakah\\_nuclear\\_power\\_plant](https://en.wikipedia.org/wiki/Barakah_nuclear_power_plant)
34. The World Nuclear Industry Status Report 2020 (HTML), дата последнего обращения: апреля 17, 2026, <https://www.worldnuclearreport.org/The-World-Nuclear-Industry-Status-Report-2020-HTML>
35. Preliminary Study on Financing Strategies for Small Modular Reactors: Insights from the Barakah Nuclear Power Plant Example, дата последнего обращения: апреля 17, 2026, [https://www.kns.org/files/pre\\_paper/51/24S-631-%EC%A1%B0%EC%97%B0%EC%A3%BC.pdf](https://www.kns.org/files/pre_paper/51/24S-631-%EC%A1%B0%EC%97%B0%EC%A3%BC.pdf)
36. From Consideration to Construction: The United Arab Emirates' Journey to Nuclear Power, дата последнего обращения: апреля 17, 2026, <https://www.iaea.org/newscenter/news/consideration-construction-united-arab-emirates-journey-nuclear-power>
37. Milestones Approach | IAEA, дата последнего обращения: апреля 17, 2026, <https://www.iaea.org/topics/infrastructure-development/milestones-approach>
38. IAEA Reviews UAE's Nuclear Power Infrastructure Development, дата последнего обращения: апреля 17, 2026, <https://www.iaea.org/newscenter/pressreleases/iaea-reviews-uaes-nuclear-power-infrastructure-development>
39. E-learning for Nuclear Newcomers | IAEA, дата последнего обращения: апреля 17, 2026, <https://www.iaea.org/topics/infrastructure-development/e-learning-for-nuclear-newcomers>
40. Nuclear Infrastructure Bibliography | IAEA, дата последнего обращения: апреля 17, 2026, <https://www.iaea.org/topics/infrastructure-development/bibliography>
41. Developing a Roadmap for New Nuclear Power Programmes - International Atomic Energy Agency, дата последнего обращения: апреля 17, 2026, <https://www.iaea.org/sites/default/files/23/06/presentations-240523.pdf>
42. Nuclear program in Serbia - NuclearSerbia, дата последнего обращения: апреля 17, 2026, <https://nuclearserbia.rs/news/nuclear-program-in-serbia>
43. Westinghouse reaches agreement on IP with Korean companies - World Nuclear News, дата последнего обращения: апреля 17, 2026, <https://www.world-nuclear-news.org/articles/westinghouse-reaches-agreement-on-ip-with-korean-companies>
44. When Export Controls Meet IP: Lessons from Westinghouse v. KEPCO | Articles - Finnegan,



- дата последнего обращения: апреля 17, 2026,  
<https://www.finnegan.com/en/insights/articles/when-export-controls-meet-ip-lessons-from-westinghouse-v-kepco.html>
45. KHNP withdraws from Polish nuclear project, дата последнего обращения: апреля 17, 2026,  
<https://www.neimagazine.com/news/khnp-withdraws-from-polish-nuclear-project/>
46. KHNP and KEPCO barred from nuclear power markets in North America, EU, and UK, дата последнего обращения: апреля 17, 2026,  
[https://www.reddit.com/r/nuclear/comments/1muyce0/khnp\\_and\\_kepco\\_barred\\_from\\_nuclear\\_power\\_markets/](https://www.reddit.com/r/nuclear/comments/1muyce0/khnp_and_kepco_barred_from_nuclear_power_markets/)
47. Trump admin courts Westinghouse rivals amid slow talks on new nuclear - Canary Media, дата последнего обращения: апреля 17, 2026,  
<https://www.canarymedia.com/articles/nuclear/trump-admin-courts-westinghouse-rivals>
48. Steptoe Clients KEPCO and KHNP Settle Dispute with Westinghouse Electric, дата последнего обращения: апреля 17, 2026,  
<https://www.steptoec.com/en/news-publications/steptoe-clients-kepco-and-khnp-settle-dispute-with-westinghouse-electric.html>
49. Nuclear Power in South Korea, дата последнего обращения: апреля 17, 2026,  
<https://world-nuclear.org/information-library/country-profiles/countries-o-s/south-korea>
50. Comprehensive Analysis: Serbia's Nuclear Energy MoU and National Scientific-Technical Capacity Building - NuclearSerbia, дата последнего обращения: апреля 17, 2026,  
<https://www.nuclearserbia.rs/opinions/comprehensive-analysis-serbias-nuclear-energy-mou-and-national-scientific-technical-capacity-building>
51. Serbia to finalize all studies needed for nuclear program decision by mid-2027, дата последнего обращения: апреля 17, 2026,  
<https://balkangreenenergynews.com/serbia-to-finalize-all-studies-needed-for-nuclear-program-decision-by-mid-2027/>
52. Serbia and Russia discuss nuclear energy cooperation, дата последнего обращения: апреля 17, 2026,  
<https://www.world-nuclear-news.org/articles/serbia-russia-discuss-nuclear-energy-cooperation>
53. Serbia and EDF Continue Cooperation on the Development of a Peaceful Nuclear Program, дата последнего обращения: апреля 17, 2026,  
<https://nip.rs/en/news/4980-serbia-and-edf-continue-cooperation-on-the-development-of-a-peaceful-nuclear-program>
54. Serbia requests funding for first phase of nuclear program - eKapija, дата последнего обращения: апреля 17, 2026,  
<https://www.ekapija.com/en/news/5449177/serbia-requests-funding-for-first-phase-of-nuclear-program>
55. Serbia plans for new nuclear power plant by 2035 (1.6 GW) - Enerdata, дата последнего обращения: апреля 17, 2026,  
<https://www.enerdata.net/publications/daily-energy-news/serbia-plans-new-nuclear-power-plant-2035-16-gw.html>