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A strategy for restoring U.S. global leadership in nuclear energy under federal law

Introduction

According to Joseph Nye, global leadership means the ability of a state to shape international rules, preferences and directions of action of other actors by effectively combining hard power resources, soft power attractiveness and institutional position in the international system¹. There is no doubt that in the past there was justification for giving the United States the status of global leader in nuclear energy². This happened because the United States was a pioneer in converting military nuclear technology to civilian use in nuclear energy³, developed and commercialized reactors that were the standard worldwide⁴, had an almost complete monopoly on the supply of enriched uranium to allied and allied countries⁵, and finally, for many decades they set standards for safety and control⁶. In the opinion of the author of this publication, four stages of the United States' global leadership in nuclear energy can be distinguished.

¹ J.S. Nye, *Soft power: the means to success in world politics*, „Public Affairs” 2004, pp. 12–13.

² R.G. Hewlett, F. Duncan, *Atomic shield, 1947–1952*, Berkeley 1990, pp. 3–12, 189–214; J. Krige, *Atoms for peace, scientific internationalism, and scientific intelligence*, Cambridge (MA) 2006, pp. 1–9, 57–85, 139–162.

³ R.G. Hewlett, J.M. Holl, *Atoms for peace and war, 1953–1961: Eisenhower and the Atomic Energy Commission*, Berkeley 1989, pp. 209–211, 234.

⁴ R. Cowan, *Nuclear power costing revisited*, „Oxford Review of Economic Policy” 1990, pp. 54–56.

⁵ J. Krige, *Sharing knowledge, shaping Europe: US technological collaboration and nonproliferation*, Cambridge (MA) 2014, pp. 115–117.

⁶ J.S. Walker, *Three mile island: a nuclear crisis in historical perspective*, Berkeley 2004, pp. 10–12.

The first stage took place between 1946 and 1980⁷, in which a state monopoly was established in military terms, and the commercialization and dynamic development of nuclear energy in the world took place⁸. At this stage, American global leadership in nuclear energy was almost absolute⁹. Between 1980 and 2020, the construction of new nuclear reactors in the United States slowed down, especially following the establishment of the Nuclear Regulatory Commission (NRC), and this trend was triggered by the first-ever accident at the Three Mile Island nuclear power plant in 1979¹⁰. The period from 1980 to 2020 saw a period of stagnation in the construction of new nuclear reactors, with an unsuccessful attempt to reverse the downward trend¹¹, and subsequently even the closure of the reactor fleet, especially after the Fukushima nuclear power plant accident¹². The third stage dates back to 2020–2024, when the leadership crisis and the awareness of the threat from Russia and the People’s Republic of China became evident¹³. Finally, in 2025, the current phase began: an aggressive attempt to restore American global leadership in nuclear energy.

In 2025, ten Executive Orders (EOs) of the President of the United States relating to energy were adopted¹⁴, especially nuclear, which together

⁷ The Atomic Energy Act of 1946, Public Law 79–585, ch. 724, 60 Stat. 755, the 79th United States Congress, August 1, 1946.

⁸ The Price-Anderson Nuclear Industries Indemnity Act, Public Law 85-256, Stat. 71 Stat. 576, the 85th United States Congress, September 2, 1957; The Energy Reorganization Act of 1974, Public Law 93–438, 88 Stat. 1233, the 93rd United States Congress, October 11, 1974; D.D. Eisenhower, *Address Before the General Assembly of the United Nations on Peaceful Uses of Atomic Energy*, New York City, 34th President of the United States: 1953–1961, December 8, 1953, <https://www.presidency.ucsb.edu/documents/address-before-the-general-assembly-the-united-nations-peaceful-uses-of-atomic-energy-new> (accessed: 9.02.2026).

⁹ R.G. Hewlett, J.M. Holl, *Atoms for peace and war...*, pp. 3–30, 45–70, 200–260.

¹⁰ A nuclear incident occurred on March 28, 1979, at the second reactor of the Three Mile Island nuclear power plant in Pennsylvania, USA. The incident led to a lasting culture of regulatory caution, a significant extension of licensing procedures, and an increase in capital costs, which effectively hampered the development of new nuclear projects. M. Rogovin, G.T. Frampton, *Three mile island. Vol. 1. A report to the commissioners and to the public*, <https://www.osti.gov/servlets/purl/5395798> (accessed: 9.02.2026).

¹¹ The Energy Policy Act of 2005, Public Law 109–58, 119 Stat. 594, the 109th United States Congress, August 8, 2005.

¹² *The Fukushima Daiichi accident, report by the Director General*, International Atomic Energy Agency, Vienna International Centre 2015, <https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1710-ReportByTheDG-Web.pdf> (accessed: 9.02.2026).

¹³ In 2024, legislation was passed requiring the NRC to accelerate licensing of new reactors. The Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024, Public Law 118–67, the 118th United States Congress, July 9, 2024.

¹⁴ Executive Order 14154, Unleashing American Energy (20 January 2025); Executive Order 14156, Declaring a National Energy Emergency (20 January 2025); Executive Order 14213, Establishing the National Energy Dominance Council (14 February 2025); Executive Order 14260, Protecting American Energy From State Overreach (8 April 2025); Executive Order 14270, Zero-Based Regulatory Budgeting to Unleash American Energy (9 April 2025); Executive Order

form the basis of the strategy to restore global leadership in nuclear energy¹⁵. While the coherence of these acts is not surprising, their multifaceted and systemic nature is noteworthy. Based on these acts and a number of government documents and literature, an attempt was made to verify the hypothesis that their implementation could facilitate the restoration of US global leadership in nuclear energy, provided that challenges and problems – both historical and structural – are overcome, an appropriate regulatory intervention model is adopted, and factors shaping the United States' strategic capability to restore global leadership in nuclear energy are created.

The article is structured in a sequence from diagnosis, through instrumentation, to potential outcomes. The first step establishes the historical and structural challenges and problems facing US nuclear power, which facilitates the identification of the current state and justification for regulatory intervention. It also addresses the question of whether the United States needs a coherent, long-term strategy to restore global leadership in nuclear energy¹⁶. The second stage identified a sequential model of the US President's regulatory intervention in 2025, enabling the identification of a favorable scenario for overcoming challenges and resolving issues. Finally, the third stage presented potential factors enabling the United States to achieve energy dominance.

This article conducts a qualitative, interdisciplinary analysis, drawing on the achievements of legal sciences, with integrated elements of security and management sciences. The analysis also includes reference to key federal laws governing the nuclear sector, in particular: the Atomic Energy Act of 1954, the Energy Reorganization Act of 1974, the Nuclear Waste Policy Act of 1982, the National Environmental Policy Act (NEPA), and the Energy Policy Act of 2005, to the extent that the Executive Orders of 2025 modify the manner in which they are applied by administrative bodies. Due to the specific nature of the problem and the need for a thorough understanding of the normative and strategic context, purposive sampling was employed, with a limited sample size consisting of ten executive orders of the President of the United States adopted in 2025. From a methodological perspective, the

14299, Deploying Advanced Nuclear Reactor Technologies for National Security (23 May 2025); Executive Order 14300, Ordering the Reform of the Nuclear Regulatory Commission (23 May 2025); Executive Order 14301, Reforming Nuclear Reactor Testing at the Department of Energy (23 May 2025); Executive Order 14302, Reinvigorating the Nuclear Industrial Base (23 May 2025); Executive Order 14315, Ending Market Distorting Subsidies for Unreliable, Foreign-Controlled Energy Sources (7 July 2025).

¹⁵ Executive Orders issued by the President of the United States are issued to direct the enforcement of laws passed by Congress or the management of executive branch resources and personnel. Executive Orders have the force of law and are binding on federal agencies.

¹⁶ *National security strategy of the United States of America*, The White House, Washington, November 2025, p. 14.

article relies on a monographic approach, which involves a comprehensive review of the research sample. This is supplemented by the study of strategic and official documents, as well as highly credible scientific and expert studies.

Historical and structural challenges and problems of American nuclear energy from a systemic perspective

The introduction posits that the United States has historically achieved global leadership in nuclear energy, and therefore, it is appropriate to address the question of why it has lost or weakened this leadership. The answers are provided in operationalized categories of challenges and problems, particularly those of a systemic nature. Following a review of the primary research sample, the following categories of challenges and problems facing the US nuclear energy sector were identified: persistent regulatory and investment delays, fragmentation and erosion of the nuclear cycle, dispersion of competences and regulatory accumulation, loss of technological and design advantages, weakening export and regulatory capabilities, and the lack of a coherent and long-term strategic priority for nuclear energy. The selection of categories was based on a multi-level analysis of the nuclear energy sector, encompassing the strategic, institutional, investment, industrial, technological, and geopolitical levels. The categories were chosen to illustrate the historical process of the overall erosion of US nuclear capabilities, from strategic decisions to long-term structural consequences.

The first category of challenges and problems is the persistent regulatory and investment delays. This issue should be considered in the context of the licensing framework provided for in the Atomic Energy Act of 1954 and as reformed by the Nuclear Energy Innovation and Modernization Act (NEIMA), which establishes timelines for the NRC to review applications. Executive Order 14300 directly interferes with the way these powers are exercised, obliging the NRC to adhere to statutory deadlines and limiting its ability to reassess risks already identified by the DoE or DoD. In § 1 of EO 14300 acknowledges that, over time, the United States has stopped systematically issuing licenses for the construction of civilian nuclear reactors, and the licensing process has become lengthy and costly¹⁷, and the NRC, responsible for issuing licenses, began to act in an overly protective manner towards

¹⁷ Interestingly, until 2025, the NRC charged applicants hourly fees to process license applications, and the extended turnaround time maximizes fees while limiting nuclear power development. See: § 1 EO 14300.

low-probability risks¹⁸. It added that these factors contributed to the NRC's structural inefficiency. It is worth emphasizing that the operation of the nuclear sector in the US also remains dependent on the civil liability regime established in the Price–Anderson Act (42 U.S.C. § 2210), which limits the investment risk of operators but at the same time constitutes an element influencing the international competitiveness of US nuclear technologies. In § 1 of EO 14154 acknowledges that the inflation of federal law limits the potential of the American energy sector, particularly through overly complex and extensive federal regulations that contribute to the increase in energy generation costs and limit innovation in nuclear energy.

In the next category, nuclear cycle fragmentation and erosion, § 1 of EO 14302 noted that the fuel cycle infrastructure in the United States had significantly deteriorated, resulting in a heavy reliance on foreign uranium sources and on uranium enrichment and conversion services. In § 3(b)–(c) of EO 14302 called for the development of a plan to expand domestic uranium conversion and enrichment capacity sufficient to meet the projected demand for low-enriched uranium (LEU), high-enriched uranium (HEU), and high-grade low-enriched uranium (HALEU) in civilian and defense reactors, and mandated the cessation of the dilution and disposal program for surplus plutonium. In § 3(h) of EO 14302 calls for the implementation, in cooperation with domestic companies, of methods to enhance spent fuel management capabilities, including recycling and reprocessing of spent fuel, to ensure the continued reliable operation of the nation's nuclear reactors. In § 5(a)–(b) of EO 14299 indicate the need to establish nuclear fuel banks, including for each private sector project. Finally, § 3 of EO 14301 recognizes that, with a few rare and debatable exceptions, no advanced reactors have yet been deployed in the United States to generate commercial electricity¹⁹.

Another category of challenges and problems is the fragmentation of authority and regulatory accumulation. EO 14300 calls for reforming the NRC, including its structure, personnel, regulations, and operations, because of a fundamental error in its operation: instead of effectively promoting safe and widespread nuclear energy, the NRC has attempted to protect Americans from the most distant threats, failing to consider the serious domestic and geopolitical costs resulting from such risk aversion. In § 5(a)–(d) of EO 14300 establish that the NRC should not enforce deadlines for license reviews and approvals, license amendments, license renewals, certificates of compliance, capacity increases, license transfers, and any other actions required by

¹⁸ Between 1954 and 1978, the United States approved the construction of 133 completed civilian nuclear reactors at 81 power plants. Since 1978, the NRC has approved only a fraction of that number, and of these, only two reactors have entered commercial operation. See: § 1 EO 14300.

¹⁹ The term „advanced reactor” is defined in 42 United States Code § 16271(b)(1).

a licensee or prospective licensee, solely in accordance with nonbinding guidelines regarding “general milestone schedules”²⁰, but in accordance with the Nuclear Energy Innovation and Modernization Act²¹.

Furthermore, the NRC should not re-examine risks that have already been addressed in Department of Energy (DoE) or Department of Defense (DoD) processes. In § 3 and 4 of EO 14270 note the multiplicity of agencies with jurisdiction over energy, including nuclear energy (DoE, NRC, Environmental Protection Agency, Federal Energy Regulatory Commission, etc.). In § 5(b) of EO 14300 notes that the NRC should adopt radiation limits based on scientific research, not guidelines developed by officials. Furthermore, the threat to American energy dominance from state and local governments, as identified in § 1 of EO 14260, cannot be ignored. This threat involves state governments enacting burdensome and ideologically motivated “climate change” or energy policies that threaten American energy dominance and our economic and national security²². From the perspective of international cooperation, the potential conflict between federal law and state regulations concerning emissions, climate, and tort liability is of particular importance. Executive Order 14260 mandates the identification and elimination of state regulations that may conflict with federal law. However, these conflicts may impact investment predictability for foreign partners and the U.S.’s ability to enter into and enforce agreements under Section 123 Agreements (Agreements under the Atomic Energy Act).

For the category of loss of technological and design advantage, reference should be made to § 1 of EO 14302, which cites the data that it took the United States almost 40 years to add the same amount of nuclear capacity that another developed country added in 10 years. Furthermore, with the decline in advanced reactor designs in America, 87% of nuclear reactors installed worldwide since 2017 are based on designs from two countries. For the category of weakened export and legal capabilities, reference should be made to EO 14299, which cites insufficient diplomatic and negotiating activity on peaceful nuclear cooperation agreements²³, low intensity of contract renegotiation

²⁰ *NEIMA milestone schedules of requested activities of the Commission*, August 28, 2025, <https://www.nrc.gov/about-nrc/generic-schedules> (accessed: 9.02.2026).

²¹ The Nuclear Energy Innovation Capabilities Act of 2017, Public Law 115–248, 132 Stat. 3154, 115th Congress, September 28, 2018.

²² For example, New York State passed a law retroactively imposing billions of dollars in fines known as „compensation payments” on traditional energy producers for their alleged past contributions to greenhouse gas emissions not only in New York but elsewhere in the United States and the world. See: § 1 EO 14260; Governor Kathy Hochul Signs Climate Change Superfund Act (S.2129-B/A.3351-B), 26 December 2024, New York State; New York Climate Change Superfund Act establishes a Climate Change Adaptation Cost Recovery Program requiring large fossil fuel companies to pay approximately \$75 billion over 25 years into a state climate adaptation fund (nysenate.gov; governor.ny.gov).

²³ See: § 123 Atomic Energy Act of 1954.

with short expiry periods, as well as an insufficient number of signed contracts, which limits access to markets.

The final category of challenges and problems is the lack of a coherent and long-term strategic priority for nuclear energy. In § 1 of EO 14299 recognizes that advanced nuclear reactors, such as Generation III+ reactors, small modular reactors, microreactors, and stationary and mobile reactors, have not yet been deployed in the United States at the scale or pace necessary to meet pressing national security needs, while adversaries are rapidly exporting and deploying this technology worldwide²⁴. In § 2 of EO 14156 it was noted that nuclear energy was not systematically treated as an element of national security, and therefore no permits were issued in emergency situations.

At the end of this section, it is impossible not to address the contribution of establishing a strategy for restoring the United States' global leadership in nuclear energy from the perspective of American national security. First, the United States is competing with China and Russia to build new nuclear power plants worldwide, creating geopolitical dependencies lasting up to 100 years. Second, the security of the nuclear fuel supply chain, including ensuring full fuel sovereignty, is crucial. Third, the dynamic development of artificial intelligence (AI) and data centers requires adequate and stable electricity sources, the lack of which could lead to the loss of leadership in AI²⁵. Fourthly, the development of nuclear energy is inextricably linked to the global shaping of legal standards, including in the area of non-proliferation²⁶. Fifthly, the issue at hand determines the military strength of states (powering military bases, nuclear propulsion for ships and space propulsion), the potential for technological innovation (dual-use), and economic development (the value of the market for new reactors, jobs). These factors may determine that nuclear energy is returning to the core of the United States' national interests.

An analysis of the 2025 Executive Orders indicates that their goal is not only to change the direction of energy policy but also to modify the application of key federal laws regulating the nuclear sector. This intervention specifically addresses: 1) the timing and structure of licensing proceedings before the Nuclear Regulatory Commission under the Atomic Energy Act and the NEIMA reform provisions; 2) the scope of environmental analyses conducted

²⁴ Nuclear Energy Institute (NEI), *Russia and China are dominating nuclear energy exports. Can the U.S. catch up?*, Nuclear Energy Institute, 2021.

²⁵ R. Lizak, *Prawne aspekty neuronowego modelu zarządzania danymi w administracji federalnej Stanów Zjednoczonych z wykorzystaniem AI*, Warsaw 2024, p. 135; International Energy Agency, *Electricity 2024: analysis and forecast to 2026*, Paris, p. 31.

²⁶ Treaty on the Non-Proliferation of Nuclear Weapons, opened for signature 1 July 1968, 5 March 1970, Art. IV.

under NEPA; 3) the coordination of responsibilities between federal agencies, and 4) the relationship between federal and state law. Thus, the analyzed Executive Orders not only impact the political level but also interfere with the application of sectoral law.

A sequential model of the president's regulatory intervention in the nuclear energy sector

Following the identification of challenges and problems facing the US nuclear energy sector, an attempt was made to identify legal solutions adopted through implementing regulations that address these identified challenges and problems, while taking a holistic approach to illustrate the model of state intervention. To this end, categories were identified, the selection of which is based on a sequential model of regulatory intervention, in which the state increases the intensity and scope of its intervention in the nuclear energy sector. These categories include: securitization of nuclear energy, integration of nuclear energy with resource policy and national security, deregulation and zero-based regulation, and shortening and centralizing procedures.

The securitization of nuclear energy should be understood as the process of giving this issue priority within the framework of national security²⁷. In § 1 of EO 14156 recognizes that energy security is becoming an increasingly important area of global competition, and that affordable and reliable domestic energy supplies are fundamental to national security. It adds that, as a consequence, a state of emergency is necessary to ensure a stable and sufficient energy supply and reduce the unreliability of the energy grid. Under § 2(a) of EO 14156, the heads of executive departments and federal agencies may define and exercise all available emergency powers to facilitate the identification, leasing, location, production, transportation, refining, and fabrication of domestic energy resources, including uranium, including, but not limited to, those on federal lands. Another example of nuclear energy securitization is the enabling – under § 5(a)(i) of EO 14156 – of the emergency consultation provisions under the Endangered Species Act²⁸, and identifying planned or potential actions aimed at facilitating the country's energy supply. This means

²⁷ The National Security Act of 1947 (NSA of 1947) does not define the term „national security”, but these matters may include: 1) threats to the United States, its citizens, property, or interests; 2) the development, spread, or use of weapons of mass destruction; and 3) any other matter relating to the national security or homeland security of the United States. See: The National Security Act of 1947 (1947). The 80th United States congress, public law 80-253, 61 Stat. 495; § 101(b) of the Supreme Administrative Court of 1947.

²⁸ The Endangered Species Act of 1973, Public Law 93–205, 87 Stat. 884, the 93rd Congress, 1st Session, December 28, 1973.

drastically accelerating energy projects by bypassing standard and lengthy procedures for protecting endangered species. Recognizing the current situation as an „emergency” allows for a shift from traditional procedures to legal procedures reserved for natural disasters or war.

In the case of integrating nuclear energy with raw materials policy and national security, the wording of EO 14154 is particularly noteworthy, including § 2(b) establishing a common policy framework for energy (uranium) and raw materials, with national security and their supply chains recognized as a primary objective. Next, § 9(c) of the aforementioned regulation potentially classifies uranium as a critical raw material and links it to the National Defense Stockpile regime²⁹. In turn, § 1 of EO 14260 acknowledges the synergies between nuclear energy, critical raw materials, and national security, even linking energy policy with raw materials policy. It is also appropriate to refer to § 3(a) of EO 14315, which discontinues tax breaks for clean electricity production for wind and solar facilities. While the provision does not directly address nuclear energy, in the context of raw materials policy (dependence on strategic raw materials such as uranium) and national security (energy independence and reducing threats from foreign supply chains), the EO supports the integration of nuclear energy by leveling the playing field and reducing dependence on imported renewable energy technologies (solar panels and wind turbines).

The next category includes deregulation and zero-based regulation, the normative foundations of which emerge in EO 14270, particularly in its wording:

- § 1, which establishes an automatic sunset mechanism, according to which repealing outdated regulations that hinder progress can stimulate innovation;
- § 4(a)–(b), which reverses the burden of proof in favor of maintaining the regulations, meaning that the justification should not address the question of why they should be repealed, but why they should be maintained;
- § 4(c), which implies that in any new regulation, the relevant agency should include a conditional sunset date of no later than 5 years, meaning that the rule has become a permanent systemic rule and there are no open-ended provisions. Also found in this category is the language of § 3(a) of EO 14154, which requires federal agencies to identify their activities that impose an unreasonable burden on nuclear energy resources.

²⁹ Defense Logistics Agency, The Nation’s Logistics Combat Support Agency, *DLA strategic materials*, <https://www.dla.mil/Strategic-Materials/> (accessed: 9.02.2026); *2026 Critical minerals ministerial*, U.S. Department of State, February 4, 2026, <https://www.state.gov/releases/office-of-the-spokesperson/2026/02/2026-critical-minerals-ministerial> (accessed: 9.02.2026).

In the category of shortening and centralization of procedures, it is worth mentioning § 5(a) of EO 14154, which repealed the historic EO 11991 of May 24, 1977³⁰, which is the foundation of a deep administrative reform in the United States aimed at radically accelerating infrastructure investments³¹. The repeal of EO 11991 represents a fundamental change in the way the National Environmental Policy Act (NEPA) is applied³², including accelerating the preparation of Environmental Impact Statements (EIS) and limiting the scope of environmental analyses, which directly affects the length of licensing procedures in the nuclear sector. Furthermore, § 5(c) of EO 14154 stipulates that all agencies must prioritize efficiency and certainty above all other goals, meaning that priority is given to efficient implementation while maintaining minimum substantive, not procedural, standards. Interestingly, in § 5(e)(ii) of EO 14154 calls for greater certainty in the federal permitting process, including, among other things, improving judicial review of NEPA application – that is, adopting specific legislative proposals that will reduce “decision paralysis” resulting not so much from the issuance of decisions but from lengthy legal disputes. This is ultimately intended to reduce procedural risk and shorten the *ex ante* and *ex post* investment process cycle.

In the context of shortening and centralizing procedures, it is also worth recalling the provisions of § 2(a)–(c) of EO 14260, whose practical significance is revolutionary for the relations between the federal government and individual states, as the doctrine of preemption was used³³, according to this provision, federal law preempts state law in areas of national significance (energy security). For example, § 2(a) of EO 14260 requires the Attorney General to identify all state and local laws burdening the identification, development, location, production, or use of domestic energy resources, including uranium, that are or may be unconstitutional, exempted by federal law, or otherwise unenforceable, and, finally, within 60 days of the date of issuance

³⁰ Executive Order 11991, Relating to Protection and Enhancement of Environmental Quality (May 24, 1977).

³¹ EO 11991, issued in 1977, authorized the Council on Environmental Quality (CEQ) to issue binding regulations governing how federal agencies would implement the National Environmental Policy Act (NEPA). Over the decades, EO 11991 spawned a massive bureaucratic structure, hundreds of guidelines, and case law that caused environmental assessments to take an average of four to seven years.

³² The National Environmental Policy Act of 1969 (NEPA), Public Law 91–190, 83 Stat. 852, the 91st United States Congress, January 1, 1970.

³³ According to Article VI, Section 2 of the U.S. Constitution, known as the Supremacy Clause, „This Constitution, and the laws of the United States made in pursuance thereof (...) shall be the supreme law of the land; and the judges of each State shall be bound therein, notwithstanding any provision of the constitution or laws of the State to the contrary”. This clause establishes the principle that when federal and state law conflict, federal law preempts and overrules the state law. Cf. *McCulloch v. Maryland*, 17 U.S. (4 Wheat.) 316 (U.S. Supreme Court 1819); *Gibbons v. Ogden*, 22 U.S. (9 Wheat.) 1 (U.S. Supreme Court 1824).

of this regulation, recommend any additional presidential or legislative action necessary to suspend enforcement of these state laws. In § 2, in conjunction with § 3 of EO 14213, establishes the National Energy Dominance Council (the Council)³⁴, its primary mission is to advise the President on how to produce more energy and ensure the United States' dominant position in the energy market, particularly by streamlining the permitting, production, generation, distribution, regulation, transportation, and export processes for all forms of American energy, including critical minerals. In practice, the Council's role is to coordinate decision-making processes from dispersed sectoral agencies to a level directly subordinate to the President, thereby shortening the decision-making process and reducing the risk of interfering with federal agencies³⁵.

Potential factors shaping the United States' strategic capability to restore global nuclear energy leadership

While the road to overcoming the challenges and resolving the problems in US nuclear energy remains long, it is worthwhile to identify potential factors shaping the United States' strategic ability to restore global leadership in nuclear energy. From the primary research sample, potential factors were identified that could be created if the regulatory intervention model works as intended. These factors include rebuilding the credibility of the investment process in an "on-time, on-budget" formula, reintegrating the full nuclear cycle, increasing geopolitical and resource resilience, improving the US export position, and regaining narrative and normative leadership. The chronology of factors is based on the assumption that strategic leadership capacity in nuclear energy is generated sequentially, starting from rebuilding systemic credibility, through ensuring industrial sovereignty, to strategic stability and strengthening influence projection, leading to hegemonic capacity.

In the case of rebuilding the credibility of the investment process in an "on-time, on-budget" formula, § 5(a) of EO 14300 is noteworthy. It establishes fixed and maximum deadlines for decisions on the construction and operation of a new reactor (up to 18 months) and decisions on the continued operation of an existing reactor (up to 12 months), while prohibiting their suspension (except through the applicant's fault) and linking the deadlines

³⁴ Executive Order 14213, Establishing the National Energy Dominance Council (February 14, 2025).

³⁵ *National energy dominance month, 2025*, Proclamations by the President of the United States of America, October 17, 2025, <https://www.whitehouse.gov/presidential-actions/2025/10/national-energy-dominance-month-2025/> (accessed: 9.02.2026).

to limits on the reimbursement of hourly fees charged by the NRC. This impacts the rebuilding of capacity “on-time” and restores predictability to investment schedules. § 5(f) of EO 14154 introduces strict thresholds beyond which the NRC cannot request changes to the reactor design after construction has begun. This provision facilitates the rebuilding of capacity “on-budget”, as in the past, regulatory changes during the investment process generated the largest cost overruns and delays in nuclear projects³⁶.

In the case of § 5(e) of EO 14154, it is impossible not to get the impression that this provision addresses both conditions simultaneously, i.e., “on time, on budget”. This is because it establishes procedures for standard license applications, as well as general licenses for large numbers of microreactors and modular reactors, facilitating scalability and repeatability, rather than individual, one-time licensing processes. Finally, § 4(a)–(b) of EO 14300 establishes the basis for a reorganization of the NRC structure, reducing positions outside of key licensing functions, and limiting the role of the Advisory Committee on Reactor Safeguards (ACRS) to the minimum necessary to fulfill its statutory obligations.

Another factor involves the reintegration of the full nuclear cycle, addressed in § 3(b)–(c) of EO 14302. Its wording mandates the expansion of domestic uranium conversion capabilities and the reconstruction of enrichment capacity for civilian and defense reactors (LEU, HEU, HALEU). This provision is crucial because it enables a transition from a dependent position in the nuclear cycle to a systemically autonomous position, a transition that is impossible without nuclear fuel and its enrichment. On a similar note, § 3(h) of EO 14302 was adopted, calling for the implementation of methods for recycling and reprocessing spent nuclear fuel in cooperation with national entities. Finally, § 1 and § 4 of EO 14301 established a legal basis for the reform of nuclear reactor testing by the DoE, enabling the testing of advanced designs and shortening the transition from the research to commercial phase. In the case of the factor of increasing geopolitical and raw material resilience, reference should be made to the wording of § 1 and § 2(c) of EO 14315, which indicates that reliance on subsidized energy sources based on supply chains controlled by “foreign adversaries” threatens national security, therefore support for such sources and supply chains was terminated³⁷. In response, it is possible that nuclear power, based on domestic or allied uranium and nuclear technology, will be structurally strengthened as an instrument of energy sovereignty, reducing US vulnerability to geopolitical

³⁶ P.L. Joskow, *The future of nuclear power in the United States: economic and regulatory challenges*, „MIT Economics” 2006, December 27, pp. 3–6.

³⁷ Cf. R. Lizak, S. Skuza, *The Inflation Reduction Act as an element of shaping the US grand strategy and the UN strategy of global goals*, „Białostockie Studia Prawnicze” 2024, Vol. 29, No. 1, pp. 11–26.

pressure. Under § 1 and 2(a) of EO 14156, nuclear power is recognized as a critical infrastructure element of the United States, with particular emphasis on its role in providing electricity to the economy and defense. Finally, in this category, it is worth mentioning § 1 of EO 14299, according to which nuclear power will enable the provision of resilient, secure, and reliable energy supplies for critical defense facilities and facilitate the deployment of advanced computing infrastructure for AI and other mission-capable resources at military and national security facilities and national laboratories that require reliable, high-density power sources that cannot be disrupted by external threats or grid failures.

Another factor supporting the strengthening of strategic capabilities for globally restoring leadership in nuclear technology is the improvement of the United States' export position. In § 8(b) of EO 14299 requires relevant federal agencies to simplify and shorten the process of adjudicating export authorization applications, which cannot exceed 30 days from receipt of a complete application and completion of the required accompanying analysis by the Department of Energy. Furthermore, § 8(c)(i)–(iii) of EO 14299 indicate that export policy has been changed from passive to active, with funded support for foreign expansion, including by:

- optimizing the value of the U.S. International Development Finance Corporation to provide equity and other financing for U.S. nuclear energy technology;
- increasing the efficiency of the U.S. Trade and Development Agency, as permitted by law, by expanding grant funding for U.S. nuclear technology pilot projects;
- utilizing the Export-Import Bank of the United States and other relevant agencies to increase financing for projects utilizing the export of nuclear technology for U.S. civilian purposes throughout the project lifecycle.

The final factor is the recovery of narrative and normative leadership, as outlined in § 1 in conjunction with § 4(b)(iii) of EO 14213, under which the National Energy Dominance Strategy was established, the goals of which are to reduce bureaucracy, promote innovation, and eliminate “long-standing but unnecessary regulation”. This is significant because energy dominance has been institutionalized as an official state narrative, in which nuclear energy has become a component of development and innovation policy and long-term normative influence. Furthermore, § 1 in conjunction with § 4(b)(iii) of EO 14213 provides: § 2(b) EO 14154 links the development of nuclear energy with the global challenges of the future, technological competition, economic growth and state resilience. Moreover, nuclear power has become a *sine qua non* for the development of AI, digital security, and modern industry. It's impossible not to get the impression that, in the context of

narrative and normative leadership, the discourse on nuclear power has shifted from a focus on risk and environmental issues to one of security and stability.

Conclusions

An analysis of the historical and structural challenges and problems facing US nuclear energy revealed that the challenges and problems facing US nuclear energy are not incidental or technological in nature, but rather systemic and are the result of a long-term and cumulative erosion of the nuclear energy sector, encompassing the strategic, institutional, regulatory, and industrial levels. This occurred, among other reasons, because the US economic and legal ecosystem in nuclear energy has become incompatible with the requirements of building complex infrastructure facilities with long life cycles. This erosion of compatibility stems from multiple factors, including the rigidity and rigidity of the NRC, which constitutes a barrier to innovation; a lack of orders; supplier failure and staff departures; then high costs and long deadlines; and, ultimately, the lack of a national strategy. Furthermore, the dispersion of responsibilities and regulatory accumulation have contributed to the country's structural inability to implement nuclear projects within a predictable timeframe and budget, which in turn has fueled fuel cycle fragmentation and a loss of design advantage. Next, the loss or weakening of leadership in nuclear energy threatens fuel sovereignty, technology exports, non-proliferation standards, technological competition, and the maintenance of military and digital superiority.

This article identifies a sequential model of regulatory intervention, which suggests that the primary objective of the strategy to restore the United States' global leadership in nuclear energy is to shift nuclear energy from the domain of sectoral policy to the domain of national security, providing the basis for the lawful implementation of executive branch instruments in the extraordinary mode as tools of management in the ordinary mode. This suggests that the strategy to restore global leadership is based on a change in the legal regime, not just the process of managing market regulators (NRCs) or the pace of the investment process. An analysis of the set of implementing regulations reveals that their provisions do not constitute a basis for incremental reform, but rather a coherent, structured process in which deregulation, centralization of procedures, and state preemption become tools for the securitization of nuclear energy, prioritizing this issue within the framework of national security. Applying the preemption doctrine to nuclear energy entails a redefinition of the legal and administrative system. Energy security, as part of national security, becomes a category superior to

state regulatory autonomy, civil rights, environmental protection, and standard legal procedures.

Following an analysis of the potential factors shaping the United States' strategic ability to restore global leadership in nuclear energy, it was determined that this strategic capability does not depend solely on technological innovation, as this alone is insufficient, but is the result of sequentially built executive credibility, industrial sovereignty, and geopolitical resilience. This conclusion, in turn, determines the thesis that in this specific situation, a justified need for long-term state intervention arose. Furthermore, it was determined that reintegrating the full nuclear cycle and rebuilding "on time, on budget" capabilities are necessary conditions for regaining the United States' export competitiveness and the ability to offer comprehensive nuclear packages. Regaining leadership in nuclear technology exports should not be identified solely with the prestige of a global leader, but rather with the national security, geopolitical influence, and internal economic stability of the United States. This is because rebuilding capabilities at the national level allows for regaining "on time, on budget" credibility and achieving tangible economic benefits and economies of scale globally. Without developing such capabilities, American nuclear energy will remain a theoretical project and will be unable to compete in terms of price, efficiency, and the certainty of nuclear project implementation with those offered by China and Russia. Finally, it is reasonable to conclude that regaining narrative and normative leadership in nuclear energy is only possible if it is firmly embedded in the discourse of national security, technological development, and systemic stability, rather than treated as a sector of regulatory risk. In other words, nuclear energy is destined to become a tool of geopolitical competition, not simply a costly and risky construction investment.

While this work is partially forward-looking, aiming to predict the future, as it is currently impossible to answer the question of whether implementing the strategy in question will restore the United States' global leadership, it is possible to identify preliminary risks that have already emerged during the analysis for this article. This issue is particularly serious because the instruments intended to streamline the implementation of the strategy to restore global leadership in nuclear energy may simultaneously reduce the effectiveness of the implementation process. First, deregulation, zero-based regulation, and centralization of the decision-making process generate regulatory risk, which increases costs and unpredictability. Second, shortening procedures, weaker local participation, and environmental assessments may increase the propensity for lawsuits, meaning that accelerating the formal process may actually prolong the implementation of a nuclear project. Third, preemption may unblock nuclear projects in some states, but it may also generate political and legal costs. An increase in strategic capabilities

can only occur if the secondary costs of the instruments do not outweigh the benefits of accelerating decision-making processes. The significance of the ten regulations of 2025, therefore, lies not in their deregulatory ambitions, but in the risk that their internal contradictions will transform the acceleration instruments into a source of delays and systemic risk if the institutional costs exceed the procedural benefits.

Finally, the change in the United States' nuclear energy strategy, which involves a shift from a regulatory prudence model to a model of strong securitization of nuclear energy and centralization of decisions, justifies the question of the relationship of this change to the principle of reasonable and legitimate investor expectations. As Michał Krzykowski, Michał Mariański, and Jakub Zięty point out, an investor in the energy sector can reasonably expect a stable and predictable legal environment³⁸. This protection is based on the principle of reasonable and legitimate expectations derived from the standard of fair and equitable treatment³⁹. While the state has the right to modify public policy, these changes should not lead to unjustified undermining of the economic basis of investment or to a sudden reversal of previous regulatory guarantees. In this context, the new US strategic approach, although justified by national security, should also be assessed through the prism of proportionality and predictability of interference with existing investment models. The principle of reasonable and legitimate expectations does not preclude reforms, but requires that their implementation respect the balance between the public interest and investor protection, which – as the aforementioned authors emphasize – is a key element of energy sector stability.

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³⁹ See: *Biwater Gauff Ltd. v. Tanzania* (24 July 2008), Arb/05/22 ICSID, point 602; see also: *National Grid P.L.C. v. Argentina* (3 November 2008), UNCITRAL, point 168.

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Summary

A strategy for restoring U.S. global leadership in nuclear energy under federal law

Keywords: national security law, energy dominance, nuclear power, nuclear renaissance, strategic management.

This article presents a strategy for restoring the United States' global leadership in nuclear energy. This strategy is based on ten Executive Orders issued by the President of the United States in 2025. The article aims to understand the causes of the United States' loss of position as a global leader in nuclear energy, and to explain the rationale behind the intensive attempt to reverse this trend. To this end, the article tested the hypothesis that implementing these orders could facilitate the renewal of U.S. global leadership in nuclear energy, provided that: 1) historical and structural barriers are identified and overcome; 2) a sequential regulatory intervention model is applied; and 3) strategic capacity is developed. It was determined that the weakening of the U.S. position is not the result of a single factor, but rather overlapping systemic barriers. The 2025 package of regulations enables the implementation of a sequential model of state intervention, ranging from deregulation and procedural acceleration to centralised coordination, strengthening state instruments and the inclusion of nuclear energy in the national security regime. It was therefore assumed that the effective implementation of this model could create the strategic capabilities necessary for the United States to return to competing for global leadership in nuclear technology.

Streszczenie

Strategia przywrócenia globalnego przywództwa Stanów Zjednoczonych w energetyce jądrowej w świetle prawa federalnego

Słowa kluczowe: prawo bezpieczeństwa narodowego, dominacja energetyczna, energetyka jądrowa, renesans energetyki jądrowej, zarządzanie strategiczne.

W artykule przedstawiono strategię przywrócenia globalnego przywództwa Stanów Zjednoczonych w energetyce jądrowej, której kierunki i założenia wyekstrahowano z dziesięciu rozporządzeń wykonawczych Prezydenta Stanów Zjednoczonych z 2025 r. Celem artykułu jest zrozumienie przyczyn utraty lub osłabienia pozycji Stanów Zjednoczonych jako globalnego przywódcy w energetyce jądrowej, a także wyjaśnienie przesłanek intensywnej próby odwrócenia tego trendu. Zweryfikowano hipotezę, że wdrożenie dziesięciu rozporządzeń wykonawczych z 2025 r. może ułatwić odnowienie globalnego przywództwa USA w energetyce jądrowej, pod warunkiem: 1) zdiagnozowania i przewyciężenia historycznych oraz strukturalnych barier; 2) zastosowania sekwencyjnego modelu interwencji regulacyjnej oraz 3) wytworzenia zdolności strategicznych (*capacity*). Ustalono, że osłabienie pozycji USA nie wynika z pojedynczego czynnika, lecz z nakładających się barier o charakterze systemowym. Pakiet rozporządzeń z 2025 r. umożliwi wdrożenie sekwencyjnego modelu interwencji państwa – od deregulacji i proceduralnego przyspieszenia, przez centralizację koordynacji i wzmacnianie instrumentów państwowych, aż po włączenie energetyki jądrowej do reżimu bezpieczeństwa narodowego. W konsekwencji przyjęto, że efektywne wdrożenie tego modelu może wykreować zdolności strategiczne umożliwiające Stanom Zjednoczonym powrót do globalnej rywalizacji o przywództwo w technologii jądrowej.