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POLITICAL AND STRATEGIC FACTORS AND RISKS OF IMPLEMENTING THE NUCLEAR POWER PROGRAM IN POLAND

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The introduction of nuclear power is an ambitious, strategically significant undertaking currently being implemented by Poland as it steadily strengthens its political and economic influence both within the European Union and in the broader context of global international relations. Poland intends to use nuclear power to overcome the limitations of its current energy mix, meet European Union climate policy requirements, and strengthen the competitiveness of its economy. However, the lack of domestic technological capacity necessitates the involvement of a foreign technology provider— not only for the construction of nuclear power plants but also for the development of related infrastructure. The choice of a foreign partner is shaped by the prevailing geopolitical situation and the network of political and economic relationships that arise from this decision. The progress and eventual completion of the nuclear power program will carry significant foreign policy implications for the regional system of international relations. This article, drawing on methods of systematic and institutional analysis, represents the first attempt to examine the political and strategic factors underlying the implementation of Poland's nuclear power program as reflected in strategic planning documents. In the framework of the empirical research, the program is understood as a complex political and strategic project. The study highlights the specificity of the domestic political processes surrounding it and, in its applied dimension, identifies foreign policy implications while assessing the risks associated with the program's implementation.

Keywords:
Polish nuclear power program, strategic planning documents, nuclear power plants (NPPs), political dynamics

Research field. Problem statement. Methods and sources

Amid an escalating global political crisis and the intensification of the Ukrainian conflict, Poland has undertaken active efforts to define its place within the international system—efforts that reflect the political elite's perception of the

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country's role in the conflict, as well as its economic potential, territorial scope, demographic weight, and capacity to influence neighbouring states in Eastern Europe and, more broadly, the Baltic region. Following the return to power of Donald Tusk's government in 2023 and Radosław Sikorski's reappointment as Minister of Foreign Affairs, Poland's foreign policy, anchored in the rapid modernization of its armed forces and the development of a special allied relationship with the United States, has expanded in scope, moving beyond its traditional focus on political and economic development to pursue its declared ambition of becoming a leading force within the European Union and shaping its future trajectory [1].

The willingness of Polish politicians to build a "system of multiple dependencies" on their foreign policy patron is expressed not only in political and symbolic aspects, but also in solid economic projects: multi-billion dollar purchases of American weapons and defense technologies [2], and announced reciprocal investment projects in Poland by US technology giants (Amazon, Microsoft, Google). It is important to understand the rationale behind the creation and implementation of the national nuclear energy programme (hereinafter referred to as the PNEP), which fits into the overall framework of increasing Warsaw's political and economic influence in the system of international relations and consolidating strategic relations with Washington, the key supplier of technological solutions for the country's first nuclear power plant.

For Russia's foreign policy planning and forecasting system, it is crucial to analyze the various dimensions and practical implementation of Poland's nuclear energy programme, given its direct impact on the dynamics of the regional system of international relations, the emergence of new energy alliances and technological partnerships with non-regional actors (the United States, France, and South Korea), and the declining demand for Russian energy resources, which, nevertheless, continue to be used in Poland. Notably, Russia's share of Poland's liquefied natural gas imports amounted to more than 18 % in the first quarter of 2025 and approximately 43 % for the whole of 2024).[1]

Recognising the nuclear energy programme as an ambitious political and strategic project that defines the country's long-term priorities, the author formulated the following objective for this article: to determine how Poland's national nuclear energy programme, developed in cooperation with foreign partners, is reflected in the contours of its domestic and foreign policy. To achieve this goal, the research set out to: analyze strategic planning documents related to national interests to identify the political and strategic factors underlying the development of nuclear energy in Poland and the conditions guiding the selection of a foreign technology partner; define the parameters of the domestic political debate surrounding the nuclear energy programme; and assess the foreign

[1] Import LPG znów rośnie. Rosja znaczącym dostawcą do Polski, 2025, *Money.pl*, URL: https://www.money.pl/gospodarka/import-lpg-znow-rosnie-rosja-znaczacym-dostawca-do-polski-7162180421229248a.html (accessed 20.08.2025).

policy implications of the nuclear energy programme for the regional system of international relations, while identifying the potential risks associated with its implementation.

Drawing on methods of systemic and institutional analysis, the author uses strategic planning documents in the sphere of national interests (foreign policy and socio-economic development), texts of intergovernmental agreements, a collection of election programmes of relevant candidates for the presidency in 2025, official speeches and statements by Poland's political leadership, existing infrastructure development strategies and programmes, as well as legislative acts and other documents related to the preparation and implementation of Poland's nuclear energy programme.

In analyzing the boundaries of the political debate, the author conducts a comparative analysis of the content of existing strategic planning documents and relevant components of the election programmes of registered presidential candidates in 2025. This approach makes it possible to identify the key parameters of the domestic political discourse and to assess potential scenarios for interaction between the government and the president in implementing the national nuclear energy programme. To clarify the domestic political dynamics accompanying the implementation of the Polish Nuclear Energy Programme (PNEP), a historical and political analysis is employed to trace the evolution of approaches to assessing the feasibility and desirability of developing nuclear energy, from the initial attempts to construct nuclear power plants based on Soviet technological models to the programme's current form. To address the applied research task — determining the foreign policy implications and assessing the risks associated with the implementation of Poland's nuclear energy programme — the author employs the scenario-building method in conjunction with expert evaluation techniques.

Approaches to the analysis of Poland's nuclear energy programme

When analyzing existing research approaches to the Polish Nuclear Energy Programme, it should be noted that the relevant information environment — including expert resources devoted to the global development of nuclear energy — contains a substantial amount of unsystematic and fragmentary data on various aspects of the implementation of Poland's nuclear energy programme. In most cases, these materials consist of translations of press releases and statements issued by Polish government agencies, the project's technological partners, and communications disseminated through the International Atomic Energy Agency (IAEA). There are few political and strategic studies of the factors involved in the implementation of the programme; they are only beginning to appear in both Russian and foreign research circles.

As a starting point, it should be noted that political pressure from the European Union to accelerate the energy transition in coal-dependent Poland has been intensifying. This pressure stems from the need to comply with the requirements

of the climate agenda and, in the domestic political arena, from the imperative to ensure energy security and maintain conditions for economic competitiveness. In 2024, there was a record decline in the share of coal in the country's energy balance, with its contribution falling to 56.2 %, which indicates a gradual but steady shift away from the traditionally dominant energy source, with a parallel increase in renewable energy sources (RES), whose share in total production reached 29.4 % [27]. According to industry forecasts, electricity consumption in Poland is expected to rise sharply, with an estimated increase of 40—60 % by 2050 (depending on the economic scenario), with 70—80 % of energy production coming from RES.[1]

Given Poland's obligations to the EU to phase out coal-fired power generation, the Polish government believes that nuclear energy is the only reliable source of compensation: strategic planning documents (including the 2010 Energy Policy of Poland until 2030[2] and the 2014 Polish Nuclear Energy Programme[3]) provided for the inclusion of nuclear power generation as a key element of the decarbonization of the energy sector. According to the approved scenarios reflected in these documents, the first power unit should start operating by 2036, and by 2043, the total installed capacity of nuclear power plants in the country should reach 6—9 GW, which will cover the missing 20—30 % of the projected domestic demand for electricity and ensure stability during the transition from coal-fired generation.

The nuclear energy programme and, more broadly, the issues of Poland's energy transition and energy security are being studied through the lens of several methodological approaches, among which geopolitical and economic analysis are most commonly represented. Within the framework of the geopolitical strategy, the development of nuclear energy in Poland is viewed as an "analysis of intentions," that is, the possibility of making political decisions in the field of energy security and implementing them, which is common to the countries of Central Europe and some of the Baltic region. In this regard, it is necessary to note the research of Kuvaldin, which reveals the specifics of nuclear energy in Central and Eastern European countries through the prism of EU energy policy [3; 4]. A distinctive feature of Russian academic discourse on this issue is the tendency of researchers to conduct comparative analyses of regional energy policy without in-depth study of the political and economic factors underlying the implementation of the Polish programme (see, for example, [5; 6]). To understand

[1] Czy stać nas na elektrownie jądrowe?, 2025, *Energetyka24.com*, URL: https://energetyka24.com/atom/wiadomosci/czy-stac-nas-na-elektrownie-jadrowe-kilka-slow-o-ekonomii-atomu (accessed 19.08.2025).

[2] Polityka energetyczna Polski do 2030 r. Obwieszczenie Ministra Gospodarki z dnia 21 grudnia 2009 r. w sprawie polityki energetycznej państwa do 2030 r., 2010, *Monitor Polski*, № 2, poz. 11.

[3] Uchwała № 15/2014 Rady Ministrów z dnia 28 stycznia 2014 r. w sprawie programu wieloletniego pod nazwą „Program polskiej energetyki jądrowej", 2014, *Monitor Polski*, poz. 502.

Poland's emerging role in the Baltic Sea region and to predict the dynamics of the regional system of international relations, taking into account the emerging "system of multiple ties" with the US, implemented by the Polish government in the context of a cross-party consensus on the country's foreign policy, a number of studies on pan-regional (Baltic) issues are important [7—12].

The long-term effects of the national nuclear energy programme on the country's energy security in the context of EU energy policy are being intensively studied by Polish experts, with a focus on the possible consequences for international energy cooperation and the consolidation of the transatlantic partnership, both in terms of bilateral cooperation with the US and NATO [13—15; 28]. There is no serious expert or political debate in Poland about alternatives to the nuclear energy programme. The overwhelming majority of publications, both from a geopolitical and economic perspective, agree on the desirability and inevitability — in the logic of the country's long-term development — of transitioning to nuclear power generation. An analytical report on alternatives for the development of Poland's energy system in the context of the EU climate and economic requirements by the Institute of Energy at the Faculty of Management of the University of Warsaw is a perfect example of promoting the logic of "nuclear energy as the only option" [28, p. 10].

The economic approach to the issue under consideration relates to "potential analytics" based on the logic of Poland's overall economic development, within which the feasibility of the PNEP is assessed, long-term economic trends and the impact on the country's energy balance, as well as the possible impact of EU climate policy and emerging commitments to transition to a low-carbon economy on economic development [16—21; 29]. The economic approach is also associated with attempts to evaluate the potential application of technological solutions in the form of small modular reactors (hereinafter referred to as SMRs) to address industry-specific challenges and compensate for the capacity shortfall resulting from the decommissioning of coal-fired power plants in large industrial regions of Poland [22]. In this context, it is important to review existing SMR projects worldwide and assess their export potential, as done by Dyakov [23]. From this analysis, it can be reasonably inferred that, should Polish private corporations decide to implement SMRs in the projects under discussion, the only likely technological partner would be the United States, which employs export contracts in the nuclear energy sector as a geopolitical instrument.

A notable example of a high-quality economic analysis is the analytical report prepared by the Polish research centre Energy Market and authored by Kwidziński and Dusilo. Drawing on extensive and up-to-date data on Poland's energy balance, the report provides a detailed examination of the economic foundations of national energy policy. It outlines the main directions of the ongoing energy transition and convincingly demonstrates that, under current conditions, nuclear energy remains the only viable long-term option for the country [27]. It should also be emphasized that research on nuclear energy —

both by Russian and foreign scholars — is complicated by the institutional instability of Poland's system of public administration. This instability has manifested itself in the repeated transfer of competences between ministries and departments and the creation of new state agencies responsible for socio-economic planning and the development of energy programmes, including those in the nuclear sector. In this study, the author refers to state institutions and actors in Poland's energy policy according to their official names and functions as they existed at the time of the events discussed in the historical and political context of the article.

Political and strategic factors in strategic planning documents

The Decision of the Council of Ministers of January 13, 2009, was the document that formed the legal framework for the Polish Nuclear Energy Programme,[1] which established the need to prepare and implement the PNEP, which was presented as one of the key strategic results of the first term of Donald Tusk's government. To coordinate actions between ministries, local governments, and businesses, the position of government commissioner for nuclear energy (having the status of Deputy Minister of Economy[2]) was established to coordinate actions between ministries, local governments, and businesses. Until 2014, this position was held by Hanna Trojanowska,[3] who, before her appointment, had served as director of the nuclear energy department of Polska Grupa Energetyczna (PGE Group). The Commissioner was tasked with preparing and submitting for approval by the Government a draft Polish Nuclear Energy Programme, which should include technical requirements for technology suppliers, economic justification, and possible locations for nuclear power plants.

The government decided that the key industrial partner for developing the PNEP would be the Polish Energy Group, which has added a section to its public communications about reducing dependence on coal-fired power generation and the need to transition to a new generation of energy, including solutions for building nuclear power plants. Three groups of arguments are used in the public justification of the need to build nuclear power plants in Poland: the country's energy security, climate policy and the environment, economic development, and the investment attractiveness of the national economy. It should be noted that the structure of the argumentation has not changed to date; it has been retained in the current version of the Polish Nuclear Energy Programme. The need to build a nuclear power plant in Poland was included in 2010 in the government's

[1] Uchwała № 4/2009 Rady Ministrów z 13 stycznia 2009 r. w sprawie działań podejmowanych w zakresie rozwoju energetyki jądrowej.

[2] Rozporządzenie Rady Ministrów z dnia 12 maja 2009 r. w sprawie ustanowienia Pełnomocnika Rządu do spraw Polskiej Energetyki Jądrowej (Dz.U. 2009 № 72 poz. 622).

[3] A graduate of the Czech Technical University in Prague with a degree in nuclear energy, she is recognized nationally and internationally as a leading expert in the design and management of energy infrastructure facilities.

Energy Policy Strategy until 2030 (which is classified in nature and only partially published)[1] in the context of the need to diversify energy sources for the national economy and reduce dependence on external energy suppliers.

Reducing energy dependence on Russian energy supplies has been one of the most important arguments promoted by President Lech Kaczyński's administration in its domestic political agenda since 2008, based on the inevitable clash of interests between Poland and Russia in the region, including the scenario of some form of aggression against his country.[2] The pursuit of energy independence (understood, in essence, as the development of domestic energy generation and the establishment of a system of international energy supplies from allied countries to replace Russian ones) came to be perceived in Polish political discourse as its ideological legacy and became key to the right-wing conservative Law and Justice party.

At the same time, construction began on large industrial parks intended for foreign investors, which later became sites for EU-oriented enterprises in sectors such as mechanical engineering, industrial chemistry, and electronics manufacturing — all characterised by high electricity consumption (notably in Poznań, Wrocław, and Łódź). Many of the associated investment contracts included commitments to maintain fixed industrial electricity prices for the duration of the projects, as well as public obligations to increase the share of clean energy in supply chains in line with the so-called pro-environmental policies of manufacturing companies. These factors created additional pressure on the Polish electricity market, which continued to rely predominantly on coal-fired generation.

Simultaneously, expert work was initiated to update national legislation in order to enable the development and implementation of nuclear energy projects (for more details, see [24]). The body of new legislation, prepared with the participation of Hanna Trojanowska, included the updating and systematization of existing regulatory documents (the so-called Atomic Law[3]) and the new Law on the Preparation and Implementation of Investments in Nuclear Energy Facilities and Related Investments.[4] The legislation stipulated that the fundamental decision on behalf of the state to commence an investment project would be taken by the Minister of Economy (ensuring compliance with the country's political and economic interests) subject to a positive opinion from Euratom (in accordance

[1] Polityka energetyczna Polski do 2030 r. Obwieszczenie Ministra Gospodarki z dnia 21 grudnia 2009 r. w sprawie polityki energetycznej państwa do 2030 r., 2010, *Monitor Polski*, № 2, poz. 11.

[2] *Oficjalna strona Prezydenta Rzeczypospolitej Polskiej*, 12.08.2008, URL: https://www.prezydent.pl/kancelaria/archiwum/archiwum-lecha-kaczynskiego/aktualnosci/rok-2008/wizyta-prezydenta-rp-w-gruzji,26753,archive (accessed 12.07.2025).

[3] Ustawa z dnia 13 maja 2011 r. O zmianie ustawy — Prawo atomowe oraz niektórych innych ustaw, 2011, *Dziennik Ustaw*, № 132, poz. 766.

[4] Ustawa z dnia 29 czerwca 2011, 2011, *Dziennik Ustaw,* № 135, poz. 789.

with Articles 41-43 of the Treaty establishing the European Atomic Energy Community[1]) and the head of the Polish Internal Security Agency (who assesses the project in terms of its long-term effects on national security).

The Polish Nuclear Energy Programme is a strategic government document adopted by the Council of Ministers on January 28, 2014,[2] during the term of Donald Tusk's liberal government. It is a roadmap for the construction of a nuclear power plant in Poland and the creation of related infrastructure. This document defines the tasks to be implemented at the government level, at the investor level, by supervisory authorities, and by other entities involved in the implementation of the programme.

The implementation of the programme to replace coal-fired power units that have reached the end of their operational life constitutes one of the key instruments for adapting Poland's energy system to the requirements of the European Union's climate and energy policy, which Poland is obliged to follow. The transition to zero- or low-CO_2-emission energy sources, while maintaining an uninterrupted electricity supply, can realistically be achieved only through the development of nuclear energy within the country.[3]

After Poland ratified the Paris Climate Agreement, Beata Szydło's right-wing conservative government was forced to maneuver between political pressure from the European Union and its commitments to reduce CO_2 emissions, and the need to maintain political support among voters and ensure job preservation in the coal industry, to find a compromise with influential trade union leaders and management of coal mining and power generation companies on the national energy development programme. The attempt to balance the political interests of right-wing conservatives, climate commitments to the European Commission, and lobbyists for large energy-intensive projects was reflected in the National Climate and Energy Plan 2021—2030, adopted in 2019.[4] It explicitly referred to the use of nuclear energy solutions to ensure the country's energy security.

The development of the PNEP proceeded in a less public manner, continuing through negotiations with potential suppliers of technological solutions and the planning of infrastructure projects related to the construction of nuclear power plants. Between 2016 and 2017, intensive talks were renewed at both expert and political levels with relevant government agencies in the United States, France, and Japan regarding possible technological options for the construction of nuclear power plants and the timeframe for their implementation. In early 2020, similar

[1] Traktat ustanawiający Europejską Wspólnotę Energii Atomowej, 2025, *EUR-Lex*, URL: https://eur-lex.europa.eu/legal-content/PL/TXT/?uri=CELEX:12012A/TXT (accessed 12.07.2025).

[2] Uchwała № 15/2014 Rady Ministrów z dnia 28 stycznia 2014 r. w sprawie programu wieloletniego pod nazwą „Program polskiej energetyki jądrowej", 2014, *Monitor Polski*, poz. 502.

[3] Uchwała № 15/2014 Rady Ministrów z dnia 28 stycznia 2014 r. w sprawie programu wieloletniego pod nazwą „Program polskiej energetyki jądrowej", 2014, *Monitir Polski*, poz. 502. S. 3.

[4] Krajowy Plan na rzecz Energii i Klimatu na lata 2021—2030, Warszawa, 2019.

expert consultations were launched with the South Korean company Korea Hydro & Nuclear Power (KHNP), which in 2022 officially submitted a proposal to construct six units equipped with APR-1400 reactors, with a total capacity of 8.4 GW, backed by political and financial support from the South Korean government. (It should be noted parenthetically that these reactors have been the subject of a licensing dispute with Westinghouse, which does not recognize the APR-1400 as eligible for export use.)

The South Korean proposal represented a logical continuation of the large-scale military-technical cooperation that had developed between the two countries, under which Poland not only purchased advanced military equipment but also gained access to modern technological solutions from manufacturers of contracted aircraft, tanks, and missile systems. This cooperation enabled the adaptation of Polish defence industry enterprises to the maintenance and, in some cases, the partial production of equipment or its components within the country [2]. However, on 20 August 2025, it was announced that KHNP had withdrawn from the project in Poland, a decision that effectively deprived the Polish government of its bargaining position with its American technological partner regarding the possibility of pursuing an alternative solution for the construction of a nuclear power plant.[1]

After the political decision to choose the US as a technology supplier (see below), it became necessary to adjust the content of the Polish Nuclear Power Programme, the current version of which calls for the commissioning of nuclear power plants with a total installed capacity of 6 to 9 GW based on technologies using Generation III/III+ reactors. The version of the document that was current at the time of the study was adopted by Mateusz Morawiecki's right-wing conservative government on October 2, 2020.[2]

The PNEP identified 27 potential sites for nuclear power plants, including three priority locations on the Baltic Sea coast with the possibility of unlimited use of seawater in the technological cycle. The implementation schedule provided for the commissioning of two nuclear power plants with three reactors each: construction of the first reactor is planned to begin in 2026, with its actual launch into commercial operation scheduled for 2036, and the programme is to be completed with the commissioning of the last reactor at the second nuclear power plant in 2043. It should be noted that the document stipulates the purchase of nuclear fuel on a competitive basis — with at least two potential suppliers — following the completion of the initial ten-year fuel contract with Westinghouse. However, the range of possible suppliers is politically restricted to NATO member states or other politically stable countries with market economies that maintain favourable relations with Poland. This condition significantly narrows the pool

[1] KHNP confirms business closure in Poland amid controversy over Westinghouse deal, 2025, *Yonhap News Agency*, URL: https://en.yna.co.kr/view/AEN20250819010300320 (accessed 20.08.2025).

[2] Uchwała № 141 Rady Ministrów z dnia 2 października 2020 r. w sprawie aktualizacji programu wieloletniego pod nazwą „Program polskiej energetyki jądrowej", 2020, *Monitor Polski*, z dnia 16 października 2020 r., poz. 946.

of potential fuel suppliers to only a few states.[1] Fuel supply contracts will have to be concluded in accordance with the requirements of the European Union (EURATOM) and the guidelines of the Euratom Supply Agency (ESA). The issue of the location of the spent nuclear fuel storage facility remains unresolved, but the new version of the PNEP should provide an answer to this question.

Technical, economic, and safety decisions regarding nuclear power plants must be formally approved by the European Commission under the so-called notification procedure within the framework of the current agreement with Euratom. This is a mandatory requirement for nuclear energy projects in European Union member states, allowing the European Commission to form an opinion on the compliance of the programme being implemented with Euratom's objectives, accepted safety standards, and the technical and economic aspects of the project.

The financial model of the Polish Nuclear Energy Programme provides for the selection of a single technology for all nuclear power plants and contracting with an investor associated with the technology supplier. At the same time, it was assumed that the Ministry of State Property would retain a minimum 51 % stake in Polskie Elektrownie Jądrowe[2] at a minimum of 51 %. The company is the operator of PAE and, on the Polish side, is the responsible executor of the 2019 Agreement between the Government of Poland and the Government of the United States on Cooperation in the Development of a Civil Nuclear Energy Programme in Poland.[3]

In light of the intensifying domestic political struggle ahead of the parliamentary elections in the fall of 2023, Mateusz Morawiecki's government began to "promote successes" in all priority areas of the political and economic agenda, including PAE. This resulted in the signing of several strategic documents with American partners, which formally announced the choice of a technology partner (Westinghouse)[4] and defined the parameters of cooperation with Bechtel, the contractor for construction work, and on May 25, 2023, a formal agreement was signed in Warsaw between the Westinghouse and Bechtel consortium and Polskie Elektrownie Jądrowe (Polish Nuclear Power Plants) on the principles of

[1] Uchwała № 141 Rady Ministrów z dnia 2 października 2020 r. w sprawie aktualizacji programu wieloletniego pod nazwą "Program polskiej energetyki jądrowej", 2020, *Monitor Polski*, z dnia 16 października 2020 r., poz. 946. p. 8.

[2] The operator "Polskie Elektrownie Jądrowe" was established by the Polish Energy Group in a consortium with several Polish energy companies in 2009 under the name "PGE EJ". In 2021, it was bought out by the State and renamed.

[3] Porozumienie o współpracy między Rządem Stanów Zjednoczonych Ameryki a Rządem Rzeczypospolitej Polskiej dotyczące strategicznej współpracy w zakresie energii jądrowej wykorzystywanej do celów cywilnych, Waszyngton, 2019, *Instytut Europy Środkowej*, 12.06.2019, URL: https://www.premier.gov.pl/files/files/porozumienie-tlumaczenierobocze.pdf (accessed 12.07.2025).

[4] Uchwała № 215/2022 Rady Ministrów z dnia 2 listopada 2022 r. w sprawie budowy wielkoskalowych elektrowni jądrowych w Rzeczypospolitej Polskiej, 2025, *Gov.pl*, URL: https://www.gov.pl/web/polski-atom/uchwala-rzadu-o-wyborze-usa-do-pierwszej-polskiej-elektrowni-jadrowej (accessed 12.07.2025).

project implementation at the design and construction stage.[1] On September 27, 2023 — a few weeks before the parliamentary elections — a contract was signed for the provision of engineering services for the site of Lubiatowo-Kopalino[2], which was used at a decisive stage of the election campaign as one of the most important achievements of the Law and Justice government, having long-term political and economic significance.

After Donald Tusk returned to the post of Prime Minister at the end of 2023, heading a liberal-centrist coalition government, work began on updating the Polish Nuclear Energy Programme (PNEP). This process was driven not only by the need to establish concrete mechanisms for financing the programme but also by the political objective of diminishing the legacy of the right-wing conservative government led by the Law and Justice (PiS) party. According to current projections, the updated version of the PNEP — which will retain fundamental continuity with previous iterations in terms of goals, objectives, rationale for construction, and technological as well as infrastructural solutions — is expected to enter into force in the second half of 2025 (public consultations began at the end of June). An important component of the revised PNEP will be the justification of the technology chosen for the construction of the country's second nuclear power plant. Until mid-August 2025, the South Korean alternative to the Westinghouse project was regarded as a realistic option, with the proposed site located in the Central Industrial Region. Meanwhile, consultations continue with representatives of the Japanese and French nuclear energy sectors — a development that should be interpreted as part of Poland's broader strategy to strengthen its negotiating position regarding the financing terms of the second nuclear facility. This document will primarily serve the political purpose of establishing the leading role of the of the Civic Platform in creating a new economic sector in the country, which has the potential to be used in the domestic political struggle with opponents, which in recent years has taken on an almost existential character, often overcoming the boundaries of political competition established by national legislation.

On the domestic political debate

In this part of the article, the author's research objective was to define the boundaries of the political debate on the implementation of the national nuclear energy programme using illustrative examples that demonstrate the limits of

[1] Pierwsza elektrownia jądrowa w Polsce powstanie w ramach konsorcjum spółek Westinghouse i Bechtel, 2025, *Gov.pl*, URL: https://www.gov.pl/web/klimat/pierwsza-elektrownia-jadrowa-w-polsce-powstanie-w-ramach-konsorcjum-spolek-westinghouse-i-bechtel (accessed 12.07.2025).

[2] Historyczna umowa umożliwia rozpoczęcie prac dla wskazanej lokalizacji pierwszej w Polsce elektrowni jądrowej, 2025, *Westinghouse Nuclear*, URL: https://info.westinghousenuclear.com/poland/news-and-insights/historyczna-umowa-umozliwia-rozpoczecie-prac-dla-wskazanej-lokalizacji-pierwszej-w-polsce-elektrowni-jadrowej (accessed 12.07.2025).

what is possible and acceptable in the domestic political agenda: the political conditioning of the decision to choose a foreign supplier of technology and the programmatic statements on nuclear energy of relevant candidates[1] for the Polish presidency in the 2025 elections.

The topic of nuclear energy itself has been present in Polish expert and socio-political discourse for a long time, since the establishment of the Institute for Nuclear Research (Polish: Instytut Badań Jądrowych)[2] near Warsaw in 1955, where the country's only nuclear reactor, "Maria" (with a capacity of 30 MW, originally designed to use highly enriched uranium, but converted to low-enriched fuel by 2012). From 1958 to 1995, the same centre operated the EVA reactor, built using Soviet technology, which, after modernization in the mid-1960s, had a capacity of up to 10 MW. The expertise gained in the construction, operation, and modernization of nuclear reactors and the creation of technological solutions in the field of control system safety subsequently enabled the Institute and the enterprises created on its basis to join the production chains in the construction of nuclear power plants and the study of their characteristics both in Poland itself and in other countries (Bulgaria, Hungary, USSR / Russia, Czechoslovakia / Czech Republic). The Institute of Nuclear Research was the main scientific organization[3] for the project to build the Żarnowiec nuclear power plant near Gdańsk using Soviet technology based on VVER-440 reactors, which was the only option available to Poland at that time.

The project began in 1982. The construction schedule for the nuclear power plant was postponed several times due to the socio-political and economic crisis in the country, and after the Chernobyl disaster, negative sentiment towards the project intensified sharply, reinforced by the general anti-Soviet trend in society. The Chernobyl accident seriously compromised the very idea of nuclear energy and Soviet technology in general in Polish society [15, p. 20]. As a result of mass protests by environmental activists and the blocking of transport routes to the construction site by proactive residents of the region, it was decided to hold a local referendum in the Gdańsk Province, following which the project, which was at an advanced stage of infrastructure readiness, was halted by a decision of the Polish government.

The socio-political transformation processes in Poland at the turn of the century and the implementation of extraordinary domestic and foreign policy tasks related to accession to Euro-Atlantic structures formed a clear orientation towards overcoming the historically established experience of cooperation between

[1] In the following understanding: both candidates who made it to the second round of voting and the candidate who took third place.

[2] Instytut Badań Jądrowych, 2025, *Portal nuclear.pl*, URL: https://nuclear.pl/polska,ibj,instytut-badan-jadrowych,0,0.html (accessed 12.07.2025)

[3] A similar role was envisaged for the Institute in the planned construction of the second Warta nuclear power plant in Poland, and in the solutions being developed for "classified topics" regarding the use of nuclear reactors for civil and military shipbuilding at Polish shipyards.

Poland and Russia in the field of nuclear energy. In other words, in Poland's case, joining NATO and the EU predetermined the fundamental impossibility of using a Russian technological partner in the implementation of the Polish Nuclear Energy Programme, when, at the very beginning of the 20th century, the idea of having its own nuclear power plants reappeared.

In the early stages of expert discussions on the concept of constructing a nuclear power plant (2006—2009), the capabilities of potential technology suppliers from five countries — the United States, Japan, France, Russia, and China — were assessed. The Russian and Chinese options, however, were examined primarily for contextual completeness, amid a clear understanding of the political impossibility of selecting either as a technology partner. After being designated as the responsible project executor, the Polish Energy Group (PGE) signed framework cooperation agreements in 2010 with the French corporation Areva Group, the American company Westinghouse, and the Japanese-American consortium GE Hitachi (GE Hitachi Nuclear Energy).

In 2009—2010, Rosatom, in coordination with the management of Polskie Sieci Energetyczne, explored the possibility of supplying electricity to the Polish market from the Baltic Nuclear Power Plant in the Kaliningrad region, whose active construction phase began in February 2010. Between 2011 and 2013, a large-scale information campaign was launched in the Polish media, promoting the idea of accessing affordable and clean electricity from Russia. This initiative coincided with the 'reset' in Russian—Polish relations advanced by Donald Tusk's government at the time. It was assumed that up to 8 % of the country's annual demand could be supplied at a fixed price via a cross-border line from the Kaliningrad region of Russia,[1] with Rosatom discussing the possibility of foreign investors (including Polish ones) participating in the Baltic NPP project with a share of up to 49 %.[2]

Of course, in parallel with expert discussions on technical solutions for transmitting energy from the Kaliningrad region, the Polish media began actively discussing the political expediency of purchasing Russian electricity, which would further increase the share of Russian energy resources in Poland's overall energy balance (in addition to gas, oil, and coal). This was obviously considered in terms of energy and, more broadly, national security. Moreover, hypothetical access to the market for inexpensive electricity called into question the economic feasibility of building Poland's own nuclear power plants, which was also seen as an attempt by Russia to influence the government's strategy for ensuring Poland's energy security. Experts from the government's Centre for Eastern

[1] It was assumed that the said cross-border line would be built in the area of the Russian—Polish border crossing "Mamonovo 2 — Grzechotki".

[2] Investors in the Baltic NPP will be able to enter into long-term contracts for the supply of electricity with Rosatom, 2010, Forbes.ru, February 25, 2010, URL: https://www.forbes.ru/news/44959-investory-baltiiskoi-aes-smogut-zaklyuchat-s-rosatomom-dolgosrochnye-kontrakty-na-postavk (accessed 19.08.2025).

Studies directly pointed to the need to abandon purchases of Russian electricity and recommended developing Poland's own nuclear programme in the interests of national security.[1]

In 2013, Warsaw and Vilnius officially announced their refusal to purchase electricity from the Kaliningrad region (including through energy exchanges in third countries), as well as refusing to provide their energy networks for the transmission of electricity to other potential consumers without explanation, which clearly classifies the decision as purely political.[2] The basis for this decision appears to be a firm commitment to implement its own nuclear energy programme, based on technological support from the United States, which already had a version of Westinghouse's then-newest AP1000 reactor approved for export by national regulators used in the Sanmen and Haiyang nuclear power plants under construction in China since 2008. This decision aligns with Poland's concept of a 'system of many ties' in its relations with the United States, aimed at securing a long-term partnership with Washington in the field of sensitive technologies. This approach was formally codified in the 2018 Memorandum of Understanding on the Polish—American Strategic Dialogue in the Field of Energy.[3] The decision to choose the US as a technology partner was perceived as a mutual demonstration of the strategic nature of bilateral relations and did not meet with any serious resistance in the country's socio-political space and expert community: Poland's upcoming technological and political integration into the US security standards system, access to US technologies and financial instruments, and direct political support for the project at the international level effectively dispelled any doubts.

The second observation, which is essential for achieving the objectives of this article, concerns the analysis of the discourse on the Polish Nuclear Energy Programme (PNEP) in the election programmes of key candidates in the 2025 presidential election. Within the institutional design of Poland's political system, the president functions as a 'strategic mediator', serving as an arbiter among political forces and ensuring the continuity and forward planning of national security policy [25]. This role is defined in Article 126 of the Constitution of the Republic of Poland.[4] The president acts as the guarantor of the continuity

[1] OSW: elektrownia jądrowa w Kaliningradzie zagrożeniem m.in. dla Polski, 2012, *Centrum informacji o rynku energii*, URL: https://www.cire.pl/artykuly/atom/73260-osw-elektrownia-jadrowa-w-kaliningradzie-zagrozeniem-min-dla-polski (accessed 12.07.2025).

[2] Polski rząd nie zgodził się na import energii z obwodu kaliningradzkiego?, 2013, *Energetyka24*, URL: https://energetyka24.com/polski-rzad-nie-zgodzil-sie-na-import-energii-z-obwodu-kaliningradzkiego (accessed 12.07.2025).

[3] Memorandum of Understanding between the Republic of Poland and the United States of America on a Poland — U. S. Strategic Dialogue on Energy, Warsaw, 09.11.2018, *Sejm*, URL: https://www.premier.gov.pl/files/files/memorandum_of_understanding_en.pdf (accessed 12.07.2025).

[4] Konstytucja Rzeczypospolitej Polskiej z dnia 2 kwietnia 1997 r., *Dziennik Ustaw*, № 78, poz. 483, sprostowanie Dziennik Ustaw z 2001 r. № 28, poz. 319, zmiana: Dziennik Ustaw z 2006 r. № 200, poz. 1471 Dziennik Ustaw z 2009 r. № 114, poz. 946).

of state power, ensures compliance with the Constitution, and supports the sovereignty and security of the state, as well as the inviolability and territorial integrity of the country. As mentioned above, the PNEP is considered in strategic planning documents, including in terms of national security, which is understood as the overall importance of the nuclear programme for the competitiveness of the national economy, the definition of long-term foreign policy priorities, and the reduction of dependence on external energy suppliers. In this regard, the president's attitudes and priorities in security policy planning appear to be one of the key domestic political factors in the implementation of Poland's Nuclear Energy programme.

In the 2025 presidential campaign, thirteen candidates presented their election programmes — sets of conceptual positions on key issues of domestic (primarily) and foreign policy (for more details, see [26]). As no candidate secured the required 51 % of votes in the first round, a second round was held between the two leading contenders: Rafał Trzaskowski (Vice-Chairman of the liberal Civic Platform party) and Karol Nawrocki (backed by the right-wing conservative Law and Justice party). Sławomir Mentzen, the Eurosceptic candidate nominated by the Confederation of Freedom and Independence — an alliance of conservative and nationalist parties and associations — finished in third place. Consequently, the programmes of these three candidates are examined here to delineate the boundaries of the political debate surrounding the national nuclear energy programme.

Karol Nawrocki's (the winner of the presidential election in the second round of voting) election programme[1] presents a comprehensive concept for the formation of a geopolitical space of stability based on several strategic priorities: the military power of the state as the foundation of national security, adherence to a socially oriented state model, and energy autonomy ensured by the diversification of energy sources. The programme pays particular attention to the development of nuclear energy as a key element of an infrastructure project aimed at ensuring the economic well-being of citizens and creating favourable conditions for entrepreneurial activity, within the framework of increasing the country's strategic autonomy. However, the document does not provide details on specific mechanisms for implementing the PNEP, nor does it indicate a desirable foreign supplier of technological solutions.

The conceptual programme "Strong, Rich Poland"[2] presented by Sławomir Mentzen places considerable emphasis on the priority of national sovereignty, which is expressed in the prevalence of Polish legislation and national interests over the integration policies of the European Union. The programme is particularly critical of the European Union's climate policy, which, according to its author, poses significant risks to the industrial potential of both the European Union

[1] Nawrocki, K., Polska sferą normalności! 2025, *Karol Nawrocki 2025*, URL: https://karolnawrocki2025.pl/program (accessed 12.05.2025).

[2] Mentzen, S. 2025, Silna bogata Polska, *Mentzen2025*, URL: https://mentzen2025.pl/silna-bogata-polska (accessed 12.05.2025).

as a whole and Poland in particular. This policy is viewed as a potential threat to the economic sovereignty of the state and to its competitiveness within the framework of European integration.

Rejecting climate policy as an argument for the development of nuclear power generation, Sławomir Mentzen emphasizes the strategic need to diversify the country's energy balance. As stated in the programme, particular attention should be paid to the development of nuclear energy, in particular, the use of small modular reactors. The politician believes that these decisions contribute to the formation of energy autonomy and the provision of a sustainable energy supply in the context of potential crises. In this case, the programme lacks specifics regarding international cooperation in the energy sector, including references to potential foreign partners for the implementation of the outlined strategic initiatives. Thus, the programme is characterised by a strong emphasis on protecting national interests and by a critical stance towards certain aspects of EU policy, while simultaneously advocating the development of nuclear energy in cooperation with unspecified foreign partners.

In the section "Economic Patriotism" of the programme document "My Plan for Poland"[1] Rafał Trzaskowski (who was defeated in the second round of the election) approaches the issue of the state's energy autonomy through the lens of stimulating investment processes in the development and deployment of modern technological solutions. It is noteworthy that the programme's conceptual framework makes no explicit reference to nuclear energy as an instrument for achieving energy independence. Instead, the author emphasizes the development of renewable energy sources as the principal means of addressing energy challenges. It can thus be inferred that the proposed concept of energy independence is grounded in the paradigm of environmentally sustainable development, centred on renewables and excluding nuclear power from the range of technological solutions under consideration. Nevertheless, given Rafał Trzaskowski's position as a protégé and close ally of Donald Tusk and his liberal Civic Platform party, it is evident that, in the event of a hypothetical electoral victory, Trzaskowski would likely continue the implementation of the Polish Nuclear Energy Programme (PNEP) as part of a coordinated political strategy — both by supporting the project's foreign technology partner and by maintaining the policy of 'multiple ties' with the United States.

Conclusions. Scenarios and risks of the programme implementation

The country's energy sector is undergoing a phase of active transformation, marked by significant shifts in the structure of electricity generation: over the last three years, the energy balance has seen a gradual decline in dependence on coal, both in generation and in overall fuel consumption: with the increase in the share of renewable energy sources — wind, solar, and bioenergy [27] — Poland is showing the first significant signs of decarbonization of its economy.

[1] Trzaskowski, R. 2025, Mój plan na Polskę. *Rafał Trzaskowski 2025*, URL: https://trzaskowski.pl/moj-plan-na-polske (accessed 12.05.2025).

Wind and solar power generation are expanding, and investment activity in green technologies is increasing. The inherent instability of renewable energy generation and the absence of highly efficient technologies for storing surplus energy for use during periods of shortage make the choice between nuclear power and traditional coal or gas generation relatively straightforward when it comes to ensuring a stable energy supply independent of weather conditions. For Poland, the adoption of nuclear energy has become inevitable, given its commitments to the European Commission regarding the energy transition and the necessity of replacing ageing coal-fired generation capacity.

A comprehensive analysis of various aspects and dynamics of the implementation of the Polish Nuclear Energy Programme is important for the foreign policy forecasting and planning system of the Russian Federation. The need to study Poland's energy transition and its domestic political conditions is due to the fact that the PNEP has a significant impact on the transformation of the system of international relations in the region, including changes in the balance of power and the formation of geopolitical configurations involving non-regional players, such as the the United States, are already technological partners of the PNEP and continue to pursue a policy of implementing a 'system of many ties' with Poland, or, like France and South Korea (until August 20 of this year), are lobbying to participate in the Polish Nuclear Energy Programme.

The implementation of the PNEP is taking place amid a bipartisan consensus on the need to develop the nuclear industry in response to challenges in the areas of national security, energy policy, climate agenda requirements, and the expectations of economic policymakers. An analysis of strategic planning documents has shown that, despite changes in the country's political leadership, Poland's nuclear energy programme is being consistently implemented with the support of the US as a technological, financial, and political partner. An examination of the boundaries of the domestic political debate — using illustrative examples such as the election programmes of key candidates in the 2025 presidential race — together with an analysis of the political factors underlying the choice of the United States as Poland's technological partner, reveals the virtual absence of genuine alternatives both to the nuclear energy project itself and to the United States as its principal partner. Moreover, the PNEP is being implemented amid high public support for the project: according to representative polls conducted on behalf of the Ministry of Industry in November 2024, more than 92.5 % of respondents expressed support for the construction of a nuclear power plant.[1] It can be argued that Polish public opinion is highly responsive to economic arguments in favour of nuclear power, supports the establishment of conditions conducive to achieving energy

[1] 92,5 proc. Polaków za budową elektrowni jądrowych w Polsce, 2024, *Gov.pl*, URL: https://www.gov.pl/web/polski-atom/925-proc-polakow-za-budowa-elektrowni-jadrowych-w-polsce (accessed 21.07.2025).

independence, and embraces the sense of technological and political prestige associated with the successful implementation of a nuclear industry based on American technology.

The choice of an American partner for the construction of the first nuclear power plant in Poland is a comprehensive foreign policy move aimed at strengthening the country's energy security and symbolically confirming the bilateral strategic partnership. This choice did not cause significant opposition in the socio-political sphere and expert community of the Republic of Poland, as the comprehensive nature of the advantages associated with choosing an American technology partner (Poland's forthcoming technological and political integration into the American safety standards system, access to American technologies and financial instruments, and direct political support for the project at the international level) effectively neutralized any potential doubts.

When assessing the scenarios for the implementation of the Polish Nuclear Energy Programme, it is necessary to highlight the geopolitical, organizational, financial, institutional, and technological risks that may affect the timing and format of the PNEP's implementation. Geopolitical risks include a possible escalation in the Baltic Sea region associated with the deterioration of relations between NATO and Russia and/or between Poland and Russia. A conflict of any intensity would slow down the construction of the nuclear power plant and call into question the advisability of locating a high-risk facility near the Russian border, within the direct reach of the Baltic Fleet's operational assets. Increased dependence of Poland on the US due to the use of American technologies is a conscious choice by Warsaw as part of its "multiple ties" strategy, which allows Washington to use the construction of the nuclear power plant as a decisive argument in other bilateral and international issues that may not necessarily be resolved in accordance with Warsaw's expectations and desires.

Organizational and financial risks stem from the very nature of the formation of a multilateral consortium for the design and construction of a nuclear power plant and the associated financing model. The entire project is estimated to cost approximately PLN 190 billion (around EUR 43 billion at the August 2025 exchange). The project's cost structure is characterized by a high proportion of capital expenditures (CAPEX), accounting for roughly 90 % of the total estimate. These include expenses for design, construction and installation, equipment supply, licensing, and site preparation. Financing is organized through a hybrid model, combining state participation with debt financing. According to the approved plan, 30 % of the total cost — approximately PLN 60 billion — will be covered by state funds in the form of direct government support, a decision formally endorsed by the Polish authorities. On 25 March 2025, the President of Poland signed a law on the recapitalisation of Polish nuclear power plants, pending approval by the European Commission under EU state aid regulations and competition rules within the internal market. The remaining 70 % (around PLN 133 billion) is expected to be secured through debt financing, the final terms

of which will determine the overall financial burden of the project on Polish taxpayers[1]. The stability of the Polish budget system amid rapidly growing military spending may call into question the implementation of the project's financial schedule. Multilateral consortia, by their very nature (apart from the leaders of the Westinghouse and Bechtel, about a hundred companies of various forms of ownership from more than a dozen countries are expected to participate in the design and supply of equipment for the NPP) reduce the quality of project management, jeopardize equipment delivery times, and increase foreign policy risks associated with export controls on sensitive technologies.

The specific nature of the organizational and management formula for implementing the NPP construction project gives rise to institutional and technological risks in the implementation of the project: delays are possible at any stage of design, construction, and equipment delivery due to bilateral quality control of technological solutions from different manufacturers and their integration, the need to introduce American standards and practices of technological control and safety into the Polish institutional and legal environment, build a local production base, and resolve the issue of training qualified personnel for the construction and operation of nuclear power plants in the local and foreign education systems.

Achieving these goals requires the Polish government to respond to a number of institutional, financial, and regulatory challenges, including attracting significant external investment (including EU structural funds), developing the industry's human resources, and ensuring public confidence in nuclear energy. If successfully implemented, the Polish Nuclear Energy Programme has the potential to become a catalyst for the country's technological and economic development, strengthen Poland's energy independence, and at the same time deepen its 'system of multiple ties' with the US, which together will increase Poland's political, technological, economic, and financial dependence on the US, while at the same time increasing Poland's political and economic role in the Baltic region and, more broadly, within the European Union.

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