Türkiye's Nuclear Energy Ambition: Its Foreign Policy and the Dynamics of Collaboration with Russia

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Abstract

Türkiye's quest for nuclear energy has emerged as a strategic power pillar of the country's energy security, foreign policy and geopolitical impact. This research aims to delve into Türkiye's nuclear journey, particularly focusing on the Akkuyu Nuclear Power Plant project which was launched in the late 2010s in collaboration with Russia. Located at the crossroads of Europe and Asia, Turkiye holds a strategic position. It analyzes the challenges that deteriorating NATO-Russia relations can pose to Turkiye's nuclear plans and its possible plans to leverage nuclear energy as a diplomatic tool. It also analyzes Russia's nuclear export strategy to key G20 countries, including Turkiye, as part of its broader global energy influence. Furthermore, this research attempts to explore how Türkiye's nuclear policy aligns with the SDGs, which aims at economic development without compromising environmental degradation. Methodologically, the study employs constructivism theory and qualitative methods, including analysis of diplomatic engagements, policy papers, energy reports, official government publications, and agreements. The findings reveal that Türkiye's foreign policy strategy regarding nuclear energy is not only driven by a commitment to meeting domestic energy needs, but Türkiye's foreign policy efforts are calibrated to balance cooperative relations with Russia, while maintaining its accuracy in the nuclear domain. The results of this study underline that Türkiye's energy strategy has more to do with the assertion of its independent identity in a sharply divided Europe than simply achieving energy security in the context of contemporary international relations in the framework of global energy civilization and geopolitical complexity.

Keywords: Turkiye, Russia, Akkuyu Project, NATO, Sustainable Development

1. INTRODUCTION

The introduction and operation of nuclear energy are part of the Turkish government's Strategic Vision 2023 project, with the Erdoğan administration's nuclear plan focusing on three sites: Akkuyu, Sinop, and İğneada. The idea of constructing nuclear power plant in Türkiye can be traced back to the 1950's and has been discussed based on the desire to achieve energy independence which is perceived as a long-term panacea for Türkiye's energy problem, especially the over relying on importation of fossil fuel to

generate electricity. In 1955 as part of the international Atoms for Peace Program, the framework of the activities of the Turkish government tried to establish its own institutions for the production and processing of nuclear energy. Türkiye began its feasibility studies for the construction in 1965 and approved Akkuyu shore of a province of the city of Mersin licensed the construction as the first nuclear plant in Türkiye in 1976. The first unit of which the construction started in 2020 is planned to be commissioned in 2023. Similar to many projects that are potentially detrimental to the local/regional means of living and stability of the ecosystem, nuclear energy in Türkiye was opposed not long after the official announcement that Akkuyu was to be the site for a nuclear power plant (10).

Having paid back its debt to the IMF by 2005, Türkiye enacted new legislation namely Act No. 5710 in 2007 that was more specific to construction, operation and sale of nuclear power plants. This act paved the way for the auction of the Akkuyu Nuclear Power Plant (NPP). The Akkuyu NPP project was started in 1968 and came back into action in the late 2010s when the foundation of the construction was laid after signing a deal with Rosatom because of Türkiye's cooperation with Russia in the field of nuclear energy. The advanced stage of construction of the Akkuyu NPP has driven significant legislative and regulatory activities after the year 2021 to build a strong legal framework for nuclear power in Türkiye. According to the Turkish Nuclear Regulatory Act, a sound regulatory regime was created to apply international nuclear safeguards and to avoid the inappropriate use of nuclear energy. However, the legal framework is still evolving, with ongoing challenges in developing regulatory capacity and aligning with international standards, particularly in areas like environmental protection and radioactive waste management (2).

The event in Chernobyl of the year 1986 encouraged a negative perception of nuclear energy in Türkiye. Before it, there was a more or less indifference towards nuclear power, the tragedy inevitably caused a negative attitude towards nuclear energy in the country. Due to the effects that Chernobyl had worldwide, the IAEA initiated steps to

improve safety measures typical of the nuclear sector. Türkiye realized the importance of higher nuclear safety standards and signed a series of nuclear safety and emergency response after the disaster. Some of the steps taken were part of a common global trend to meet safety standards and re-establish trust in nuclear power. The experience of the Chernobyl disaster remains to shape Türkiye's further nuclear policy and people's attitude. The disaster not only defined the reactions in its aftermath but also gave a long-term cautionary approach toward the use of nuclear energy that prevailed over Türkiye and its goal to develop its nuclear power in the following years (2).

The Russian intent in energy projects specifically with reference to Türkiye, is grounded strongly and principally on energy needs and security, power politics and global sustainable development goals. With ongoing changes in global energy consumption, Russia's abundant energy supply endowments make the country strategically significant in supporting energy markets instability especially for energy deficient countries such as Türkiye. Besides improving Türkiye's energy security, this relationship defines its foreign policy and geopolitical position. Türkiye is one of the biggest consumers and beneficiaries of Russian energy sources since it has a continuously rising demand for energy in its economy (8). The current energy challenge in Europe has further encouraged Türkiye to diversify energy supply routes, and thus contributes more to its strategic role. In that respect, Russia can exercise control over Türkiye and thus over much of the European energy markets as well (3).

In the article entitled "Nuclear Power Program in Türkiye as a Nuclear Newcorner Country" by Pekar, Ç. (7), the research problem highlights Türkiye's interest in pursuing a nuclear power program to meet electricity consumption, economic development and the dependence on imports to meet its energy needs. Energy policies that place an increase in electricity generation in the 2014-2019 range. The strategy emphasizes energy supply and human resources. The nuclear program aims to increase Türkiye's independence and profile image. The government has gradually strengthened regulations for the nuclear sector with the establishment of the Nuclear Regulatory Authority. In this literature there

is a research gap, namely not explaining how Türkiye balances energy independence and its dependence on Russia as the main partner of its Nuclear Project.

The article "The Energy Context of Turkish-Russian Relations: Is it Cooperation or Competition?" by O. Uksal and E.H. Mikail. (6) explores the energy relationship between Türkiye and Russia, focusing on whether it is characterized more by cooperation or competition. The study examines how both countries balance their cooperation, particularly regarding Türkiye's energy needs, with their national and international interests, and the geopolitical and economic consequences of this dynamic. Key findings reveal that energy cooperation began in the 1960s, particularly with thermal and hydroelectric power plants. The fall of the Soviet Union introduced competition, such as Türkiye's Baku-Tbilisi Cehyan Project, while Russia maintained influence with its Blue Stream pipeline. Cooperation strengthened with the Akkuyu Project in 2010, making Türkiye increasingly dependent on Russia for its nuclear energy needs and vulnerable to political pressure. The article identifies a research gap in the analysis of geopolitical risks, political vulnerability to Russia, sustainable energy dependence, and the role of other international actors like the US, NATO, and the EU in shaping Türkiye-Russia energy dynamics.

2. METHOD

In this study, the authors employ a qualitative method to obtain their results, which are descriptive in nature. The research explains the mapping of Türkiye's Nuclear Ambition, Geopolitical Implications, Diplomacy and Economic Dimension, Sustainability, and Policy Implication, in this research, the data collected through Literature study or what can be called a secondary data source is a data collection technique by conducting a review study of books, literature, notes and reports that are related to the problem being solved. This technique is used to obtain written basics and opinions which is done by studying various literature to serve as references and benchmarks related to the problem being studied. This is also done to obtain secondary data that is used for the reality obtained with theory.

To support the analytical framework in the research on Turkey's Nuclear Energy Development: Geopolitical Implications of the Partnership with Russia, the relevant theory employed is Constructivism. The development of constructivist theory in international relations is closely linked to the work of U.S IR scholar Alexander Wendt (9). He describes the transition from a Hobbesian system, which emphasizes conflict and warfare, to a Lockean system, focused on rivalry, and the to a Kantian system of cooperation. This transition introduces three main variables:

a. interdependence, which binds countries together in mutual cooperation,

b. a sense of shared responsibility, forming a kind of solidarity at the regional and global levels, and,

c. shared identity, which encourages nations to understand and accept differences. These three variables illustrate whether a state becomes a friend or rival to others, leading to joint action or cooperation.

Constructivism places great emphasis on the mutability of interests and identities, which, when scaled down to the domestic level, provides a composite view to question the rationale for anarchy that forces its constituent states or their authorities to struggle. This logic can provide an answer to why Türkiye needs to cooperate with Russia in the development of peaceful nuclear energy in the Akkuyu Project, while geopolitical dynamics can be seen that Türkiye is part of NATO and has good relations with the EU, amidst the less pleasant western perspective on Russia while Türkiye also positions itself between the two. This theory presents an opportunity for reflection to provide an explanation of why Türkiye wants to develop nuclear energy development by collaborating with Russia and the regional and international dynamics that occur, a chessboard that slices in dynamic intensity into the problems raised. Constructivism will look at the historical traces, neo-Ottoman identity of Türkiye, intentions/intendences, and interests.

3. RESULT AND DISCUSSION

3.1. Türkiye's Nuclear Ambitions

Although Türkiye has been interested in nuclear technology for its civilian usages, its International Atomic Energy Agency (IAEA) memberships, dependence on NATO security, and lack of nuclear weapons intentions in the contemporary world politics indicate that Türkiye is not likely to develop Nuclear Weapons Program in the contemporary world politics. It still looks at energy and economic requirements with its past emphasis on non-proliferation policy. Türkiye has participated in discussions of nuclear power since the 1980s which in turn has contributed to the concern of nuclear proliferation. Still, these discussions center more in domestic political effects and for that reason than in serious desire to acquire nuclear weapons. Since 1979 being a member of the North Atlantic Treaty Organization (NATO) and a signatory to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT, in force from 1980), Türkiye has been actively engaged in international non-proliferation processes. It has entered into a number of agreements such as safeguards agreement with the IAEA and additional protocol implying its adherence to non-proliferation regime (1).

Security policy of Türkiye depends to a large extent on NATO's nuclear power that helps to deter possible nuclear threats. Using nuclear threats means that Türkiye depends more on NATO's nuclear umbrella than having their nuclear weapons programme. Interest of Türkiye in particular nuclear technology can be attributed mainly to the security of energy supply and economic development. The country aims at harnessing nuclear energy to solve the escalating electricity needs in the country as well as to reduce dependency on other countries' energy instead of achieving nuclear weapons (1).

Türkiye's nuclear plans are proliferation resistant due to its compliance with the non-proliferation regime and the lack of nuclear capable delivery vehicles. On the one hand, the country has no material capability or desire to start developing nuclear weapons since doing so will result in isolation internationally. Ever since Iran began developing a nuclear programme, there have been increased debates over Türkiye's nuclear intentions. Nevertheless, Türkiye has kept escalating its support for non-proliferation instead of expanding its nuclear programme (1).

3.2. Geopolitical Implications

The Akkuyu Nuclear Power Plant as the first facility that was built according to the build-own-operate (BOO) model has major geopolitical consequences for Türkiye and the southern region. The construction and operation of Akkuyu Power Plant by the Russian state atomic energy corporation shows the development of economic and strategic relationship between Türkiye and Russia. The new cooperation may redress the power relations in the region as Türkiye greatly depends on Russian technology and investment in the energy sector. The shift to tap nuclear energy is imperative for the growth and sustenance of the Türkiye's economy and independence in the foreign policy (1).

This new power plant Akkuyu could pose a shift in the electricity supply in the Eastern Mediterranean region. While Türkiye aims at transforming it into an energy hub in the region, the plant can alter supply corridors and cooperation with some of the neighbors who can also become its rivals in the energy sector. To some extent, Türkiye's construction of the Akkuyu Power Plant is considered proliferating nuclear weaponry in the MENA (Middle East and North Africa) region. Although Türkiye has joined the non-proliferation regime, possession of a nuclear installation could provoke regional and international actors' attention and regional conflicts (1).

Türkiye ambitions to develop nuclear capacity alongside Russia may create strains in the relations with NATO partners. While Türkiye relies on NATO for security assurances, its growing ties with Russia could create friction within the alliance, especially if perceived as a shift away from Western alignment. The Akkuyu project will be instrumental in creating jobs in the nation and reducing energy costs as well. However, these have to be balanced by the political risk of a strengthened Türkiye's energy potentialities and relations and their impact upon the region's stability (1). The Akkuyu Nuclear Power Plant project is an important step in the energy structure of Türkiye that has potentially far-reaching geopolitical consequences that may alter regional balance of power, affect the relations between the countries and even the place of Türkiye in the world.

3.3. Diplomatic and Economic Dimensions

The Akkuyu Nuclear Power Plant (NPP) is one of the major areas where Türkiye's and Russia's diplomacy meets their economies. Currently, the Akkuyu NPP is one of the most important and visible milestones of the development of Türkiye – Russia relations concerning energy cooperation. This new construction phase has its beginning in the symbolic ceremony with both the Turkish President Erdoğan and Russian President Putin and the necessity of nuclear energy for Türkiye's future power supply. There is also significant capital investment within the framework of the project, it forecasts the expenses of up to $20 billion for constructing four atomic reactors that can produce 4.8 KW of energy. This investment is important to Türkiye which has been looking for ways to change its mix to fresh sources of energy other than natural gas (6). The politicization of relations in the provision of energy supplies has implications in the global economy resulting in high prices and inflation (5). Russia's energy exports to Türkiye not only stabilizes its market but also diversifies, and is an important factor in Türkiye's economic growth. (8).

The Akkuyu NPP in Türkiye is planned to provide 10% of the country's total energy supply, and begin partially replacing natural gas energy by 2023. This measure is a part of a larger effort regarding energy issues in the country and diversification in attempts to make Türkiye less reliant on imports. The Akkuyu project also has geopolitical implications as it places Türkiye in the middle of discussions of the East-West energy corridor. The collaboration with Russia is considered as appropriate affiliations especially in terms of geographical location and energy requirement. Although the project is one of the largest achievements for Türkiye's energy sector, it raises questions about operational control. The plant will be run by Russian companies but the long-term purchase in dollars could result in higher costs for Türkiye (6). The energy relations between Türkiye and Russia can be dated back to the period of the 1960s and therefore, the Akkuyu NPP is the recent addition to this kind of relationship. The historical relations exist today although there are certain competitive relations in the sphere of energy today. The completion of the Akkuyu NPP is believed to be a great boost to the energy sector of Türkiye. However, slow progress and consequent financial issues provoke questions about possible timeframes of the whole project and its impact on Türkiye's energy agenda (6).

3.4. Sustainability and SDGs Alignment

The Akkuyu Nuclear Power Plant (NPP) is promoting itself as the means to achieving the energy objectives of Türkiye by improving energy independence through the utilization of nuclear energy. Since Türkiye's ambition is to get rid of the power plant fuel import dependence and shift towards the sustainable energy system, the need in nuclear energy integration corresponds with one of the Sustainable Development Goals – SDG 7 which aims to provide access to affordable, reliable, sustainable, and modern energy for all. The construction of Akkuyu NPP is also expected to improve the supply of electricity in Türkiye to meet this objective. In its operation, nuclear power is well known for low emission of greenhouse gasses. It is expected that, once launched, the Akkuyu NPP will become an important component in fulfilling SDG 13 to combat climate change and its effect. The transition from coal and natural gas to nuclear energy may allow Türkiye to stay within its climate targets and decrease emissions. A number of economic impacts are anticipated in relation to the construction and operation of Akkuyu NPP: employment, development of regional economy and others. This is in line with the 8th Sustainable Development Goal which focuses on decent work and economic growth. The project has already generated employment opportunities several times over its construction phase as observed (2).

The Akkuyu project highlights the international relationship especially with Rosatom, which relates to the 17th sustainable development goal that is taking measures to implement and revive the global partnership for sustainable development. It not only contributes to the transfer of technology and technology but also strengthens Türkiye's ability to develop nuclear energy with international standards. However, public concerns by the population with regard to safety of nuclear energy and its impacts on the environment. These concerns need to be addressed in order to contribute to compliance with SDG 16, which assumes peaceful and inclusive societies for sustainable development goals. By implementing adequate regulation as well as guaranteeing transparency in the relationship between the Akkuyu NPP and the population, it can achieve the safe and efficient functioning of the facility (2). In conclusion, the Akkuyu Nuclear Power Plant may be capable of meeting the various goals of the sustainable development policy by improving energy security, decreasing

emissions, boosting economy and friendly international relations. However, addressing public concerns and ensuring a strong regulatory framework will be critical for its successful integration into Türkiye's energy landscape.

3.5. Policy Implications

Türkiye positions its overall energy policy focusing on ensuring energy supply both in terms of technical and time. This energy production will be channeled as electricity supply with clean, economical concentration, and directing development, growth, and progress that is directed to its domestic needs. Prepared by the Ministry of Energy and Natural Resources (MENR), Türkiye realizes its national energy and mining policy by focusing on three considerations: domestic production, security or protection of supply, and systematically targeted market potential projections.

In line with the policy report published by the IAEA (4), it explains the Energy Policy Review in Türkiye, including:

1. The main objectives of supply security are to achieve diversification of energy resources and markets, sustainability and reliability of resource transfers, and reduction of costs of imported energy products.
2. Local energy production using natural resources is essential in achieving energy independence.
3. Türkiye intends to improve its electricity market and build a viable natural gas market, restructure institutions in the energy sector, and rehabilitate the energy supply infrastructure.

In the context of Türkiye's energy policy described in the IAEA report (4), we can analyze it through the lens of constructivism theory. This theory emphasizes the importance of ideas, identities, and norms in shaping international policies and interactions. In this context, Türkiye's energy policy reflects a country's attempt to build an identity as a key player in the global energy market, as well as to achieve energy independence. Points such as the operation of energy resources are efforts from Türkiye's policy goals as a supplier country. In the constructivism framework, it shows that Türkiye has optimism to build a stronger and more independent identity

in the context of energy. By reducing dependence on other countries, Türkiye not only increases its energy security supply but also positions its image of excellence in the international arena. The use of national energy resources is a step towards achieving energy independence. There is a developing normative framework to prioritize domestic resources, this situation creates a stronger national identity as part of its policy priorities in the general landscape. The determination to develop nuclear energy is a progressive effort to commit to investing in better technology to reduce emissions.

Direct negotiations with the Russian Federation to build a nuclear power plant at the Akkuyu site in Türkiye began in February 2010 and concluded with an intergovernmental agreement (IGA) based on a build-own-operate (BOO) model (4). The fundamental aspects of the IGA for building and operating a nuclear power plant at the Akkuyu site in Türkiye, some of them include the following:

- The Russian side establishes a joint-stock project company in Türkiye that will initially own 100% of the shares.
- The Turkish side allocates the Akkuyu site to the project company free of charge until the plant's shutdown. Additional land will also be allocated free of charge if needed.
- The Russian side's share will never fall below 51% (and the Government of the Russian Federation will be the guarantor of the project).
- APC will be the owner of the NPP.
- The general contractor will be JSC Atomstroyexport (ASE).
- The Russian side will provide financing to ASE for the construction of the NPP
- In case of production less than the volume stipulated in the PPA, APC will fulfill its obligations by providing the missing volume of electricity.
- Nuclear fuel will be sourced from suppliers based on long-term agreements concluded between APC and suppliers.
- Subject to separate agreements that may be agreed by the parties, spent nuclear fuel of Russian origin may be reprocessed in the Russian Federation.

- APC is responsible for the decommissioning and waste management of the NPP. Within this framework, APC will make the necessary payments to the relevant institutions.
- Turkish companies and citizens will be included in the project to the extent possible.
- The project will be subject to all applicable laws, regulations and codes in Türkiye. All necessary licenses, permits and approvals from relevant government organizations must be obtained by APC (Akkuyu Project Company).

In the context of the above policy, Akkuyu is not only considered as an energy project but also a mutualism project between the two countries. There is a construction of mutually dependent identities and aligned interests. From Türkiye's side, this project provides an opportunity to strengthen national energy security. This is Türkiye's way of constructing itself as an independent player. The Russian side in guaranteeing that ownership will not decrease by 51% acts as a guarantor of the project. As the owner of this project, the company has full authority over regulation, licensing, and management. This obligation reflects Türkiye's commitment to maintaining its sovereignty. Despite the financial guarantee from Russia, constructivism sees this as not a threat but rather a means to build as it is considered a friend. Türkiye emphasizes the participation of companies and citizens to show its determination to build the competence of domestic workers. This shows the synergy of local involvement in Türkiye as an active, sovereign and equal country. Legal compliance is a reflection of the constructive role of the norm which is the regulation of respect between Türkiye and Russia.

4. CONCLUSION

The selection of Russia as a partner in the Akkuyu project as part of a long relationship with Russia, despite having different views on several global issues, Turkiye provides a flexible style in reflecting its identity to meet its modernization. Türkiye considers Russia as a strategic partner, while Russia is an opportunity to show its influence in the Middle East. From this constructivist perspective, the Akkuyu project is a symbol of the transformation of Türkiye's identity and policy in the energy sector. This project is not just a physical development, but reflects the determination to adapt to global dynamics for environmental concerns in providing

for its needs. Türkiye also shows the world, even though it is part of NATO, close to the EU, it will not stop partnering with Russia in achieving its goals. The role of the actors in realizing it shows how Erdogan and his staff encourage Türkiye to continue to transform. This phenomenon confirms that history is formed by a process of mutual reinforcement between agents and structures as emphasized by the founders of constructivism. In addition, this condition is not determined by economic or military power but rather by cultural elements that are formed through interactions between subjects, as stated by Wendt in the rubric "ideas all the way down" the existence of ideas, norms, and values that are believed to distribute their interactions to continue to renew their interests.

5. CONFLICT OF INTEREST

The authors affirm that there is no conflict of interest related to the writing or publication of this article.

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