DYNAMICS OF THE RUSSIAN FOREIGN POLICY BETWEEN 2000-2019: NUCLEAR ENERGY AS A FOREIGN POLICY TOOL IN THE CASE OF TURKEY

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ABSTRACT

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This thesis examines the dynamics of Russian foreign policy between 2000-2019 by specifically focusing on the civilian aspect of nuclear energy and how it shapes Russia's relations with Turkey. It aims to clarify the role and the importance of nuclear energy as a foreign policy tool, specifically in the case of Turkey. To this end, Russian nuclear energy policy is scrutinized in detail. This thesis argues that the marketing and trading of nuclear power plants (NPPs) for civilian purposes not only provides surpluses for Russian economy but also increases the influence and power of Russia over those places where nuclear reactors are sold or other nuclear goods and services are supplied. Specifically, it examines the extent of the influence of the exportation of NPPs on the Russian foreign policy dynamics in Turkey. In this context, first a brief historical background information on Russian nuclear power status as well as the utilization of nuclear energy as a foreign policy tool during Putin's presidency is given. This is followed by the Russia's nuclear energy policies towards Turkey and the effects of this policy on the Russian foreign policy dynamics

in Turkey. The study concludes that the Akkuyu NPP project will result in Moscow's domination in the foreign policy dynamics between Turkey and Russia. As a result of such dominance Turkey will become much less sovereign in its foreign policy options and will feel the pressure coming from Moscow about the possible consequences of its actions which will not please Russia. The primary methodological tool of the work was qualitative analysis utilizing primary and secondary sources in Russian, English and Turkish on the topic, including academic books, articles, newspapers, magazines and relevant official websites.

Keywords: Russia, Foreign Policy, Nuclear Energy, Energy Politics, Putin.

ÖZ

RUSYA'NIN 2000-2019 YILLARI ARASINDAKİ DIŞ POLİTİKA DİNAMİKLERİ: NÜKLEER ENERJİNİN TÜRKİYE ÖRNEĞİNDE BİR DIŞ POLİTİKA ARACI OLARAK KULLANILMASI

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Bu tez, özellikle nükleer enerjinin sivil yönüne ve nükleer enerjinin Rusya'nın Türkiye ile ilişkilerini nasıl şekillendirdiğine odaklanarak, 2000-2019 yılları arasındaki Rus dış politikasının dinamiklerini incelemektedir. Bu tezin amacı, nükleer enerjinin bir dış politika aracı olarak rolünü ve önemini Türkiye örneğinden yola çıkarak açıklığa kavuşturmaktır. Bu nedenle, Rusya'nın nükleer enerji politikası ayrıntılı olarak incelenmiştir. Bu tez, nükleer güç santrallerinin (NGS) sivil amaçlarla pazarlanmasının yalnızca Rusya ekonomisine katkı sağlamakla kalmayıp, aynı zamanda Rusya'nın nükleer reaktörlerin satıldığı veya diğer nükleer ürün ve hizmetlerinin tedarik edildiği yerler üzerindeki etkisini ve gücünü de arttırdığını savunuyor. Bu çalışma bilhassa, NGS ihracatının Türkiye'deki Rus dış politika dinamikleri üzerindeki etkisinin boyutunu incelemektedir. Bu bağlamda ilk olarak, Rusya'nın nükleer statüsü hakkında kısa bir tarihsel arka plan bilgisi ve Putin'in başkanlığı sırasında nükleer enerjinin dış politika aracı olarak kullanılması ele alınmaktadır. Daha sonrasında, Rusya'nın Türkiye'ye yönelik nükleer enerji politikaları ve bu politikaların Türkiye'deki Rus dış politika dinamikleri üzerindeki

etkileri açıklanmaktadır. Bu araştırma sonunda Türkiye'nin, Akkuyu NGS projesinin tamamlanması ile beraber, Rusya ile olan dış politika dinamiklerinde Moskova'nın tahakkümü altına gireceği ortaya çıkmıştır. Bu egemenliğin bir sonucu olarak, Türkiye'nin dış politika seçeneklerinde egemenliği azalacak ve ülke Rusya'yı memnun etmeyecek adımlar attığında Moskova'dan gelecek baskıyı üzerinde hissedecektir. Rusça, İngilizce ve Türkçe basılmış olan kitaplar, makaleler ve gazetelerin yanı sıra ilgili resmî internet sitelerinden de yararlanılan bu çalışmada kullanılan temel yöntem nicel analizdir.

Anahtar Kelimeler: Rusya, Dış Politika, Nükleer Enerji, Enerji Politikaları, Putin.

To My Family

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LIST OF ABBREVIATIONS

AKKUYU JSC	Akkuyu Nuclear Joint Stock Company
BOO	Build-Own-Operate
BOT	Build-Operate-Transfer
BWR	Boiling Water Reactor
EIA	Energy Information Administration
ESA	Electric Purchasing Agreement
EU	European Union
IAEA	International Atomic Energy Agency
IEA	International Energy Agency
INF	The Intermediate-Range Nuclear Forces
IPPNW	International Physicians for the Prevention of Nuclear War
NATO	North Atlantic Treaty Organization
NEA	Nuclear Energy Agency
NEI	Nuclear Energy Institute
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
OECD	Organization for Economic Co-operation and Development
ROSATOM	The State Atomic Energy Corporation
PWR	Pressurized Water Reactor
RBMK	Light Water Graphite Reactor
TAEK	Turkish Atomic Energy Agency
TEK	Turkish Electrical Authority
TETAŞ	Turkish Electricity Trade and Contracting Corporation
SEU	Slightly Enriched Uranium
START	Strategic Arms Reduction Treaty
UN	United Nations
US	United States

USSR	Union of Soviet Socialist Republics
WNA	World Nuclear Association

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CHAPTER 1

INTRODUCTION

1.1. Scope of the Thesis & Argument

This thesis analyzes the dynamics of Russian foreign policy between 2000-2019 by specifically focusing on the civilian aspect of nuclear energy and how it shapes Russia's relations with Turkey. It aims to clarify the role and the importance of nuclear energy as a foreign policy tool in the exportation of nuclear power plants (NPPs). As such, the thesis has the following main research question: To what extent does the exportation of NPPs influence Russian foreign policy dynamics in Turkey? The marketing and trading of NPPs for civilian purposes not only provides surpluses for Russian economy but also increases the influence and power of Russia over those places where nuclear reactors are sold or other nuclear goods and services are supplied. Taking this argument into account, this thesis aims to clarify the role and the importance of nuclear energy as a foreign policy tool, specifically in the case of Turkey.

There are several reasons that make this topic significant to study: First and foremost, energy has been regarded as an essential input for countries (just like water) without which development, industrialization, urbanization, production, agriculture, many services, and even the daily life would come to a standstill. Besides, energy is a prerequisite for sustainable development without which it would

not be possible to ensure improvement and advancement.[1] In short, energy is among one of the factors that the continuation of the states' existence depends on, not to mention their economic development. Today, the global demand for energy is supplied from fossil fuels.[2] However, the lifespan of fossil fuels are indeed limited.[3] As such, the total resources of natural gas and oil are reported to be exhausting in four decades.[4] Even coal, relatively the more outlasting fossil fuel, will be used up within a century.[5] Therefore, the importance of nuclear energy has been rising and this energy has been seen as an important alternative source. Nuclear energy has the advantage of being a carbon-free resource[6] with abundant quantity.[7] Thus, it has been

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[1] Ibrahim Dincer and Marc Rosen, *Exergy: Energy, environment and sustainable development*, Oxford: Elsevier, 2013, p. 59. See also: Ljiljana Stošić Mihajlović and Svetlana Trajković, "The importance of energy for the economy, sustainable development and environmental protection: An economic aspect", *Journal of Process Management*, New Technologies Vol. 6, No. 1, 2018, p. 21.

[2] Roughly 80% of the world total demand, retrieved from: Organization for Economic Cooperation and Development, *World energy outlook,* Paris: International Energy Agency, 2008, pp. 38-39.

[3] Dincer and Rosen, *Exergy: Energy, environment and sustainable development,* 2013, p. 59.

[4] Shahriar Shafiee, and Erkan Topal, "When will fossil fuel reserves be diminished?", *Energy Policy,* Vol. 37, No. 1, 2009, p. 181-189.

[5] Ibid.

[6] Nicholas Apergis, et al., "On the causal dynamics between emissions, nuclear energy, renewable energy, and economic growth", *Ecological Economics*, Vol. 69, No. 11, 2010, p. 2255.

[7] Organization for Economic Cooperation and Development, *World energy outlook,* Paris: International Energy Agency, 2008, p. 86. See also: Steve Fetter, "How long will the world's uranium supplies last", Scientific American, 26 Jan 2009, faculty.publicpolicy.umd.edu/sites/default/files/fetter/files/2009-sciam-uranium.pdf [accessed October 30, 2018]. And see: Robert Price and Jean René Blaise, "Nuclear fuel resources: Enough to last?", NEA News, Organization for Economic Cooperation and Development, Nuclear Energy Agency, Vol. 20, No. 2, 2002, p. 13. www.oecd-nea.org/nea-news/2002/20-2-Nuclear_fuel_resources.pdf [accessed October 30, 2018].

regarded as a way to decrease the effects of global warming and as a solution to achieve energy supply security.[8]

Secondly, nuclear energy as being a source of not only economic but also political power possesses critical importance for those countries which use it. Its diplomatic and political influence has been realized by several countries including the Russian Federation. As such, Russia attributes greater importance to the exportation of nuclear goods and services to meet its economic objectives.[9] Furthermore, Kremlin has been utilizing nuclear energy as a foreign policy tool in fulfilling its geopolitical and diplomatic ambitions in various regions ranging from Europe to Asia.[10]

Thirdly, specifically in the period after Putin's election as the president, more comprehensive nuclear policies have been pursued. At the outset it was Putin who established the ROSATOM (The State Atomic Energy Corporation, *Gosudarstvennaya korporatsiya po atomonoi energii*) by the abolishing Federal Agency for Nuclear Power.[11] It was also one of Putin's objectives to become the

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[8] Apergis, "On the causal dynamics between emissions, nuclear energy, renewable energy, and economic growth.", 2010, p. 2255.

[9] IAEA, "Country nuclear power profiles: Russian Federation", International Atomic Energy Agency, updated in 2018, cnpp.iaea.org/countryprofiles/Russia/Russia.htm [accessed October 30, 2018].

[10] Rauf Mammadov and Theodore Karasik, "Rosatom as a tactic in Russia's foreign policy." *International Policy Digest*, 19 Jul 2018, intpolicydigest.org/2018/07/19/rosatom-as-a-tactic-in-russia-s-foreign-policy/ [accessed October 25, 2018].

[11] President of Russia, "Vladimir Putin signed a decree outlining the steps by which ROSATOM, a public atomic energy corporation, will be created", Official Internet Resources of the President of Russia, Presidential Executive Office, 20 Mar 2008, [accessed October 25, 2018].

global nuclear power by exporting nuclear technology.[12] He clearly stated that the conservasion of the leading position in nuclear power industry is among the priorities of the Russian Federation.[13]

Lastly, the Russian Federation through ROSATOM, has become increasingly more influential overseas with its 36 Nuclear Reactor Construction Projects in 12 different foreign countries.[14] The country has reserved a huge budget for these projects,[15] an amount much higher than any other Western country.[16] To put it differently, ROSATOM has become the monopoly with its export range and capacity in the nuclear power plant sector.[17] Besides, it has been carrying out different types of

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[12] Leon Aron, "The Putin doctrine: Russia's quest to rebuild the Soviet state", Foreign Affairs, 2013, www.foreignaffairs.com/articles/russian-federation/2013-03-08/putin-doctrine [accessed October 25, 2018].

[13] President of Russia, "President of the Russia, Vladimir Putin's speech in Russian Energy Week Forum", Official Internet Resources of the President of Russia, Presidential Executive Office, 3 Oct 2018, en.kremlin.ru/events/president/transcripts/58701 [accessed October 25, 2018].

[14] The State Atomic Energy Corporation (ROSATOM), "Projects", www.rosatom.ru/en/investors/projects [accessed September 9, 2018].

[15] The State Atomic Energy Corporation (ROSATOM), "Interview on strategic management", ar2016.rosatom.ru/?/en/41-interview-on-strategic-management [accessed September 10, 2018]

[16] Geert De Clercq, Svetlana Burmistrova and Jack Stubbs, "Rosatom's global nuclear ambition cramped by Kremlin politics", *Reuters,* 26 Jun 2016, www.reuters.com/article/us-russia-nuclear-rosatom/rosatoms-global-nuclear-ambition-cramped-by-kremlin-politics-idUSKCN0ZC0QZ [accessed October 25, 2018].

[17] "Russia unrivaled in nuclear power plant exports", *The Japan Times*, 27 Jul 2017, www.japantimes.co.jp/opinion/2017/07/27/commentary/world-commentary/russia-unrivaled-nuclear-power-plant-exports/#.W94JxnozZ-U [accessed October 25, 2018].

projects in more than 40 countries[18] which enables it to be more globally active and visible. Moreover, ROSATOM controls a major share of the nuclear fuel market along with the high quantity of uranium reserves.[19] As a result of this growing capacity and dominance over the civilian nuclear sector, Russian influence as a global nuclear power has been expanding day by day.[20] By analyzing the policy implementations of ROSATOM, one obviously can see that these policies have been adopted to gain political and economic influence in a variety of strategic regions.[21]

In this thesis, Turkey has been selected as an example for the places where Russia has sold nuclear reactors and possesses the rights to operate those reactors. There are some reasons why Turkey, and not the other twelve countries where Russia has been conducting nuclear power plant projects, is selected. First of all, Turkey is a developing country which has limited amounts of energy resources.[22] That makes it dependent on other countries in terms of energy. Having an industrial sector that continues to grow, an agricultural sector that needs energy, and a population that is becoming increasingly urbanized, Turkey has to find alternative energy sources. The

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[18] The State Atomic Energy Corporation (ROSATOM), "Performance of State Atomic Energy Corporation in 2016" Public Annual Report, Moscow 2016, https://www.rosatom.ru/upload/iblock/467/46723195e1f932824a69f8af914fec1b.pdf [accessed October 25, 2018].

[19] The State Atomic Energy Corporation (ROSATOM), "About us" https://rosatom.ru/en/about-us/ [accessed September 10, 2018].

[20] Rauf Mammadov and Theodore Karasik, "Rosatom as a tactic in Russia's foreign policy" *International Policy Digest*, 19 Jul 2018, intpolicydigest.org/2018/07/19/rosatom-as-a-tactic-in-russia-s-foreign-policy/ [accessed October 25, 2018].

[21] Ibid.

[22] Naci Bayraç, "Küresel enerji politikaları ve Türkiye: Petrol ve doğalgaz kaynakları açısından bir karşılaştırma (Global energy policies and Turkey: A comparison regarding oil and natural gas resources)", *Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi* (Social Sciences Journal of Eskişehir Osmangazi University), Vol. 10, No. 1, Eskişehir 2009, p. 134. (in Turkish).

country has been utilizing fossil fuels to meet its increasing demand.[23] Taking into account the fact that the country's natural energy resources are not sufficient,[24] Turkey has been importing fossil fuels from other countries to secure its energy supply.[25] This policy however, has resulted in a chronic current account deficit due to high costs of imported energy.[26] In order to decrease the dependence on other countries, the official energy strategy of the country is to increase the share of renewable energy resources and to add nuclear energy to the equation.[27] It is estimated that with this policy of having nuclear power, roughly $3.6 billion will be saved on a yearly basis.[28]

Secondly, Turkey has always shown her eagerness to become a Western country through her domestic and foreign policies, first and foremost the European Union

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[23] Ibid., p. 137.

[24] Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Nükleer santraller ve ülkemizde kurulacak nükleer santrale ilişkin bilgiler* (Nuclear power plants and the information regarding to the nuclear power plant which will be constructed in our country), Nükleer Enerji Proje Uygulama Dairesi Başkanlığı, Vol. 1, Ankara, p. 13. (in Turkish).

[25] Bayraç, "Küresel enerji politikaları ve Türkiye: Petrol ve doğalgaz kaynakları açısından bir karşılaştırma (Global energy policies and Turkey: A comparison regarding oil and natural gas resources)", 2009, pp. 134-135.

[26] Ibid.

[27] Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler* (Nuclear Power Plants and the information regarding to the Nuclear Power Plant which will be constructed in our country), pp. 27-29.

[28] Ibid., p. 44.

(EU) integration policies which have been going on for years.[29] Turkey has been pursuing close economic and diplomatic relations with her Western allies.[30] Yet, despite the volume of the bilateral trade between Turkey and her Western allies, the economic and diplomatic ties have been getting looser.[31] The EU integration policies have increasingly been neglected over the course of recent years.[32] On the other side, Moscow attributes great importance to her relations with Ankara. The main motive behind Russia's policy towards Turkey is to counterbalance the Western influence. Furthermore Russia also aims to increase its economic and political interests in an indirect way over those regions where Turkey plays a significant geopolitical role, such as the Middle East, Central Asia and South Caucasus.[33] Moscow has been maintaining a high level diplomatic and economic dialogue with Ankara, and to this end, NPP project is of pivotal importance.

Thirdly, among the other countries where the Russian Federation has been pursuing nuclear power plant projects, Turkey, along with Hungary, is a member country to North Atlantic Treaty Organization (NATO). Considering the decades-long tensions

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[29] Atilla Eralp, "Turkey and the European Community: forging new identities along old lines", *International Journal of Sociology,* Vol. 24, No. 2/3, Taylor & Francis 1994, pp. 131-147. See also: Ali Aybey, "Turkey and the European Union relations: a historical assessment", *Ankara Avrupa Çalışmaları Dergisi,* Vol. 4, No. 1, Ankara 2004, pp. 19-38.

[30] T.C Dışişleri Bakanlığı (Republic of Turkey Ministry of Foreign Affairs), "Avrupa ülkeleri ile ilişkiler (Relations with European countries)", available at: www.mfa.gov.tr/avrupa-ulkeleri-ile-iliskiler.tr.mfa (in Turkish) [accessed on November 30, 2018].

[31] T.C Dışişleri Bakanlığı (Republic of Turkey Ministry of Foreign Affairs), *AB ve üyelik sürecimiz: temel bilgiler kitabı* (EU and our accession process: basic informations book), AB Nezdinde Türkiye Daimi Temsilciliği, July 2018, pp. 52-53. (in Turkish).

[32] Ibid.

[33] Ziya Öniş and Şuhnaz Yılmaz, "Turkey and Russia in a shifting global order: cooperation, conflict and asymmetric interdependence in a turbulent region", *Third World Quarterly,* Vol 37. 1, 2016, pp. 71-95.

between NATO and Russia, having an ally that is not only a neighbor and a pro-Western country but also a NATO member would provide an opportunity for more influence and balance for Russian foreign policy in Turkey and even beyond. As mentioned above, Turkey, unlike Hungary, would increase the influence of the Russian Federation in the Middle East, Central Asia and South Caucasus. After the completion of the Akkuyu project,[34] the Russian Federation will be operating an NPP in the soil of a country which is both a U.S ally and a NATO member.

Last but not least, according to the bilateral agreement signed between Ankara and Moscow on the Akkuyu project,[35] unlike the other countries, Russia would be the in charge of all of the stages of the NPP project at the Akkuyu site.[36] So far, Turkey has been the only country with whom Russia signed a Build-Own-Operate (BOO) type of agreement according to which Kremlin is given full authority and high level autonomy to operate an NPP in the territory of another country.[37] In addition, Russia will be responsible for the enrichment, supply and the disposal of the nuclear fuel.[38]

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[34] Akkuyu Nükleer A.Ş. (Akkuyu Nuclear Joint Stock Company), "About the project/Project History", www.akkunpp.com/project-history-2 [accessed 25 September, 2018].

[35] Cooperation Agreement signed on May 12, 2010, retrieved from: Akkuyu Nükleer A.Ş. (Akkuyu Nuclear Joint Stock Company), "About the project/Akkuyu Nuclear JSC", www.akkunpp.com/akkuyu-nuclear-jsc [accessed September 25, 2018].

[36] Akkuyu Nükleer A.Ş. (Akkuyu Nuclear Joint Stock Company), "About the project/ Akkuyu Nuclear JSC", www.akkunpp.com/akkuyu-nuclear-jsc [accessed 25 September, 2018].

[37] Ibid. See also: The State Atomic Energy Corporation (ROSATOM), "JSC Akkuyu Nuclear designated strategic investor in Turkey", 2 Apr 2018, www.rosatom.ru/en/press-centre/news/jsc-akkuyu-nuclear-designated-strategic-investor-in-turkey/ [accessed September 25, 2018].

[38] WNA, "Nuclear power in Turkey", World Nuclear Association, updated on June 2018, www.world-nuclear.org/information-library/country-profiles/countries-t-z/turkey.aspx [accessed 25 September, 2018]. See also: The State Atomic Energy Corporation (ROSATOM), "JSC Akkuyu Nuclear designated strategic investor in Turkey", 2 Apr 2018, www.rosatom.ru/en/press-centre/news/jsc-akkuyu-nuclear-designated-strategic-investor-in-turkey/ [accessed September 25, 2018].

In brief, BOO model puts Moscow in an advantageous position vis-a-vis Ankara. Turkey will only be a host country for NPP, although it will have some economic gains and energy-supply returns. If it was a Build-Operate-Transfer (BOT) model,[39] then the Turkish side would have given less concessions to the Russian side. One of the most important disadvantages of the BOO model for Turkey is that the country will never be the real owner of the NPP which is located in her territory. Hence, it raises significant security concerns.[40] Furthermore, apart from the period in which some guarantees of purchase and price fixation are provided, Moscow will be responsible from the energy trade and price adjustments until the end of the expiration date of the NPP.[41] In other words, Moscow will be in control of the nuclear energy market in Turkey.[42] In short, the more authority Moscow has, the more influential it will be. This BOO model NPP construction project in Turkey is one of a kind that could affect the future projects and might be regarded as a

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[39] Rifat Akbiyikli and David Eaton, "A comparison of PFI, BOT, BOO and BOOT procurement routes for infrastructure construction projects", In, Fifth International Postgraduate Research Conference, School of Construction & Property Management, The University of Salford 2005, pp. 505-524.

[40] Izak Atiyas, "The "Build Own Operate Model" in nuclear energy: an analysis with emphasis on Turkey's Akkuyu project", *in:* Sinan Ülgen, ed., *Managing the risks of nuclear energy: the Turkish case*, Istanbul: Centre for Economics and Foreign Policy Studies (EDAM), 2016, pp. 43- 48. See also: Gila Benmayor, "Trust and security problematic at Akkuyu nuclear plant", Hurriyet Daily News, 16 Aug 2016, available at: www.hurriyetdailynews.com/opinion/gila-benmayor/trust-and-security-problematic-at-akkuyu-nuclear-plant-102877 [accessed November 30, 2018].

[41] 60 years, retrieved from: Akkuyu Nükleer A.Ş., "About the project/NPP", Akkuyu Nuclear Joint Stock Company, www.akkunpp.com/npp-2 [accessed November 30, 2018].

[42] Atiyas, *The "Build Own Operate Model" in nuclear energy: an analysis with emphasis on Turkey's Akkuyu project,* 2016, pp. 43- 48.

paradigm-shifter development.[43] In this context, BOO model agreement attributes a unique feature to the Turkish case. In short, Turkey sets a different example while explaining the nuclear energy's role as a tool in Russian foreign policy.

1.2. Literature Review & Theoretical Framework

There is a vast body of literature that analyzes Russian foreign policy from a variety of different perspectives such as the impact of internal factors[44] and the impact of external factors.[45] In addition, different schools of thought also analyze Russian

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[43] Cambridge Dictionary defines the term paradigm-shift as follows: A situation in which the usual and accepted way of doing or thinking about something changes completely. Retrieved from: dictionary.cambridge.org/tr/s%C3%B6zl%C3%BCk/ingilizce/paradigm-shift [accessed November 30, 2018]. As is suggested in a report: "The Akkuyu Nuclear Power Plant is the world's first nuclear power plant project implemented on this co-investment model". Retrieved from: R The State Atomic Energy Corporation (ROSATOM), "JSC Akkuyu Nuclear designated strategic investor in Turkey", 2 Apr 2018, www.rosatom.ru/en/press-centre/news/jsc-akkuyu-nuclear-designated-strategic-investor-in-turkey/ [accessed November 30, 2018]. Therefore it has the potential to be regarded as a paradigm-shifter development which may cause alterations in the future projects structures.

[44] Neil Malcolm and Alex Pravda, "Introduction", in: N. Malcolm, A. Pravda, R. Allison and M. Light, *Internal factors in Russian foreign policy*, Oxford: Oxford University Press, 1996, p. 1. For further information, see also: Lena Jonson, *Vladimir Putin and Central Asia: the shaping of Russian foreign policy*, *IB Tauris*, Vol. 1., London 2004, p. 13.

[45] Paul Kubicek, "Russian foreign policy and the West", *Political Science Quarterly,* Vol. 114, No. 4, 1999-2000, pp. 547-568. For further information, see also: Bobo Lo, *Russian foreign policy in the post-Soviet era: reality, illusion and mythmaking*, New York: Springer, 2002, p. 6 and Jeffrey Mankoff, *Russian foreign policy: the return of great power politics*, Lanham: Rowman & Littlefield, 2009, p. 12.

foreign policy from their own perspectives.[46] However, for the purposes of this thesis, the literature that focuses on the great power status of Russia as the most significant and determinative factor in terms of this country's formulation and implementation of its foreign policy will be used as the main theoretical framework. Within this general framework, the literature that analyzes Russia as a nuclear power with a specific emphasis on the civilian aspect of nuclear energy is the most relevant one.

There are several scholars who define great power status mostly from a military point of view. For Alan J. P. Taylor, the "basic test" for great powers is "their ability to wage war"[47]. Likewise, Kenneth N. Waltz considers military strength as one of the main criteria to be considered as a great power.[48] Thirdly, Max Weber attaches great

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[46] Among these schools of thoughts there are pragmatic nationalistic, liberal Westernizer and fundamentalist nationalist versions. For these schools of thoughts see: Margot Light, "Foreign policy thinking", in: N. Malcolm, A. Pravda, R. Allison and M. Light, *Internal factors in Russian foreign policy*, Oxford: Oxford University Press, 1996, pp. 33-101. See also: Nicole J. Jackson, *Russian foreign policy and the CIS*, London: Routledge, 2003, p. 6. Furthermore, there are Westernizers, statists and civilizationalists versions. For these schools of thoughts see: Andrei P. Tsygankov, *Russia's foreign policy: change and continuity in national identity*, Lanham: Rowman & Littlefield, 2016, p. 4. Besides, there are Westernism, Eurasianism and pragmatism versions. For these schools of thoughts see: Peter JS Duncan, "Westernism, Eurasianism and Pragmatism: The Foreign Policies of the Post-Soviet States, 1991–2001", in: Wendy, Slater and Andrew Wilson, eds., *The Legacy of the Soviet Union,* London: Palgrave Macmillan, 2004, pp. 228-253. Notwithstanding, there are some versions which have combined different schools of thoughts together and divided the presidency terms of Putin and Medvedev into two parts while describing their eras. For these versions see: Pacer, *Russian foreign policy under Dmitry Medvedev*, 2015, p. 6.

[47] Alan J. P. Taylor, *The struggle for mastery in Europe: 1848-1918,* London: Oxford University Press, 1954, p. xxiv (introduction).

[48] Waltz's criteria to be regarded as great power: "military strength, political stability, economic capability, size of the territory and the population, resource endowment" See: Kenneth N. Waltz, *Theory of international politics*, Reading, Mass: Addison-Wesley, 1979, pp. 130-131.

importance to militaristic capacities in order to acquire the statue of greatness.[49] Some of the more recent scholars such as Jack Levy, also suggest that the status of greatness, mostly derives from military capacity.[50]

Since the imperial period, Russia has always been prioritizing its great power status. As Iver B. Neumann has suggested, since Peter Alexeyevich (reign period 1721-1725), the country had been in search of being recognized as a great power and this search had always dominated its foreign policy process.[51] Jack S. Levy also designated Russia, after the year of 1721, as a great power and claimed that her status still persists today.[52] While explaining the global competition to acquire the great power status, William C. Wohlforth refers to former Soviet Union as a country of this status.[53] According to Jeffrey Mankoff, in the post-Soviet era, especially in the Putin era, Russian foreign policy has been basically concentrated on one major purpose: making the Russian Federation a great power in the world.[54] Andrei P. Tsygankov has also underlined the cruciality of being a great power in the Russian foreign policy decisions by quoting Putin's speech in which the president emphasized the 'sine qua

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[49] He considers economic capabilities as same significant as the militaristic capabilities. Quoted from Iver B. Neumann, "Russia as a great power, 1815–2007", *Journal of International Relations and Development*, Vol. 11, No. 2, Springer 2008, p. 130.

[50] *War in the modern great power system: 1495–1975*, Lexington: University Press of Kentucky, 2015, p. 11. For further reading in this topic: David Singer and Thomas Cusack, "Periodicity, inexorability, and steersmanship in international war"; Ranke, *Great Powers;* George Modelski, *Principles of world politics.*

[51] Neumann, "Russia as a great power, 1815–2007", 2008, pp. 128-151.

[52] Jack S. Levy, *War in the modern great power system: 1495–1975*, Lexington: University Press of Kentucky, 2015, pp. 39-40.

[53] William C. Wohlforth, "Unipolarity, status competition, and great power war", *World Politics*, Vol. 61, No. 1, 2009, p. 28-57.

[54] Mankoff, *Russian foreign policy: the return of great power politics*, 2009, p. 13.

non' nature of being a great power.[55] As Ingmar Oldberg suggests, during Medvedev's presidency (amidst Putin's second and third office term), the consolidation of the Russian Federation's place as one of the influential centers in the world was one of the most important goals.[56] "The Foreign Policy Concept" document, adopted in 2016, clearly describes Russia's position as a center of influence in today's world.[57]

Needless to say, one major aspect of Russia's being such a center is related to its military power. Within the framework of the general idea that Russia's military capacity is an indicator of her great power status, however, there is a specific emphasis on the country's nuclear capacity. In other words, Russia's being a nuclear power is seen as a significant factor which has always shaped its great power status as well as its foreign policy. There are several scholars who focused on Russia's nuclear capacity in this context. For example, Valeria Pacer has identified nuclear armament or deterrence as a crucial aspect for the Russian Federation's great power status.[58] According to Stephen Cimbala Russian policy makers consider nuclear deterrence as one of the cornerstones of the great power status and national

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[55] Andrei P. Tsygankov, "Vladimir Putin's vision of Russia as a normal great power", *Post-Soviet Affairs*, Vol. 21, No. 2, 2005, pp. 132-158.

[56] These objects were provided in the foreign policy and security strategy documents, approved by the then president Medvedev (today's prime-minister). These policy and strategy documents also contain the aims until the year of 2020. Oldberg has referred Russia as one of the great powers in the world. See: Ingmar Oldberg, *Aims and means in Russian foreign policy*, in: Roger Kanet, ed., Russian foreign policy in the 21st century, London: Palgrave Macmillan, 2011, pp. 30-31.

[57] The Ministry of Foreign Affairs of the Russian Federation, First chapter/General provisions/Third clause, Foreign policy concept of the Russian Federation (approved by President of the Russian Federation Vladimir Putin on November 30, 2016), available at: hhttp://www.mid.ru/en/foreign_policy/official_documents/-/asset_publisher/CptICkB6BZ29/content/id/2542248 [accessed April 1, 2018].

[58] Valeria Pacer, *Russian foreign policy under Dmitry Medvedev, 2008-2012*, New York: BASEES/Routledge, 2015, p. 137.

security.[59] The same idea is emphasized by Yury E. Fedorov who sees nuclear deterrence and possession of nuclear weapons as one of the most important sources of the great power status by the Russian authorities.[60] As for Paradorn Rangsimaporn, regardless of the economic and political conditions on the one hand and geographical and historical factors on the other, Russia is and will always be a great power as long as it retains its nuclear power.[61] Some scholars, such as Marcel de Haas and Yury E. Fedorov compare Russia with the United States in terms of these two countries being nuclear powers, and therefore having great power status.[62]

Besides the ideas of these scholars, the 2010 Military Doctrine of the Russian Federation states the same views.[63] In this document the nuclear capacity is regarded as highly crucial for strategic means and it brings Russia's deterrence power to the

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[59] Stephen J. Cimbala, *Arms for uncertainty: nuclear weapons in US and Russian security policy*, Farnham: Ashgate Publishing, 2013, pp. 190-191.

[60] Yury E. Fedorov, "Russia's nuclear policy", in: Boeicho Boel Kenkyujo, ed., *Major Powers' Nuclear Policies and International Order in the 21st Century*, Tokyo: National Institute for Defense Studies, 2010, pp. 49–70.

[61] Paradorn Rangsimaporn, *Russia as an aspiring great power in East Asia: perceptions and policies from Yeltsin to Putin*, , Hampshire: Palgrave Macmillan, 2009, p. 40.

[62] Marcel De Haas, *Russia's foreign security policy in the 21st century: Putin, Medvedev and beyond*, Oxon: Routledge, 2010, p. 123. See also: Fedorov, "Russia's nuclear policy", p. 50.

[63] Президент россии (President of Russia), "Военная доктрина Российской Федерации Утверждена Указом Президента Российской Федерации (The Military Doctrine of the Russian Federation approved by decree of the President of the Russian Federation)", Официальные сетевые ресурсы Президента России (Official Internet Resources of the President of Russia), http://kremlin.ru/supplement/461 [accessed October 25, 2018] (in Russian).

fore. The 2014 Military Doctrine[64] too emphasizes the significance of Russia's nuclear capacity and her power of deterrence. These documents define great power status of Russia in terms of nuclear capacity and to ability to overcome any kind of threat by using nuclear means. Marcel de Haas has indicated that Russian authorities by putting forward their nuclear capacity and weapons in such documents wanted to be acknowledged as a great power, as only great powers have the capacity of nuclear deterrence.[65] Likewise, Polina Sinovets and Bettina Renz have underlined that in the new Military Doctrine adopted in 2014, nuclear weapons have preserved their place as a cornerstone for the great power status of Russia and its national security.[66]

Despite all that however, Russia has signed and ratified the Nuclear Non-Proliferation treaty (NPT),[67] therefore regardless of its status as being one of the nuclear-weapon states, the country is not allowed to transfer any kind of nuclear weapons to non-nuclear-weapon states.[68] Besides, non-nuclear-weapon states are not allowed to receive any kind of nuclear weapons or technology which may assist them

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[64] Министерство иностранных дел Российской Федерации (The Ministry of Foreign Affairs of the Russian Federation), "Военная доктрина Российской Федерации в редакции от 2014 г. (Military Doctrine of the Russian Federation as amended in 2014)", http://www.mid.ru/foreign_policy/official_documents/-/asset_publisher/CptICkB6BZ29/content/id/589760 [accessed April 2, 2018] (in Russian).

[65] Marcel De Haas, "Russia's military doctrine development in 2000-2010", in: Stephen J. Blank, ed., *Russian military politics and Russia's 2010 defense doctrine*, Vol. 28, No. 4, Strategic Studies Institute 2011, p. 53.

[66] Polina Sinovets and Renz Bettina, "Russia's 2014 Military Doctrine and beyond: threat perceptions, capabilities and ambitions", Rome: NATO Defense College Research Division, 2015, pp. 7-8.

[67] United Nations, disarmament treaties database: Signatory states of the treaty on the Non-Proliferation of Nuclear Weapons (NPT), United Nations Office for Disarmament Affairs (UNODA), disarmament.un.org/treaties/t/npt [accessed April 2, 2018].

[68] United Nations disarmament treaties database: The text of treaty on the Non-Proliferation of Nuclear Weapons (NPT), "Article I", United Nations Office for Disarmament Affairs (UNODA), disarmament.un.org/treaties/t/npt/text [accessed April 2, 2018].

to develop these weapons.[69] Furthermore, as NPT openly states, they are not allowed to transfer fissionable material. What this means is that the trade of enriched uranium (that can be used for building nuclear weapons) with any non-nuclear-weapon state is prohibited.[70] In addition, a non-nuclear-weapon state which signed the NPT, shall assume the International Atomic Energy Agency (IAEA) safeguards system[71] and shall enter into agreement with the IAEA to fulfill the requirements of Article III of the treaty, which forestalls the conversion of peaceful usage of nuclear energy to nuclear weapons.[72] Since all the related official documents of the Russian Federation,[73] refer to full and firm commitment to the NPT, non-proliferation has been regarded as immutable, indispensable and essential for international peace and

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[69] Ibid., Article II.

[70] Ibid., Article III/Second clause.

[71] The safeguards put forth by IAEA aim to prevent nuclear proliferation and to ensure peaceful usage of nuclear materials by investigating everything related to nuclear facilities, locations, materials, nuclear power reactors under construction or after completion and technology which is being used. See: Richard Hooper, "The changing nature of safeguards", *IAEA Bulletin*, Vol. 45, No. 1, 2003, pp. 7-11. See also: International Atomic Energy Agency, *IAEA Safeguards/Serving Nuclear Non-Proliferation*, IAEA Department of Safeguards, 2018 Vienna, available at: www.iaea.org/sites/default/files/17/12/sg-serving-nuclear-non-proliferation.pdf [accessed October 2, 2018].

[72] United Nations disarmament treaties database: The text of treaty on the Non-Proliferation of Nuclear Weapons (NPT), "Article III/First and fourth clauses", United Nations Office for Disarmament Affairs (UNODA), disarmament.un.org/treaties/t/npt/text [accessed April 2, 2018].

[73] For these official documents, see: Article III/27th clause of the Foreign Policy Concept of the Russian Federation, available at: http://www.mid.ru/en/foreign_policy/official_documents [accessed April 2, 2018]. See also: "Article IV/103rd clause", Russian National Security Strategy (Approved by Russian Federation Presidential Edict 683 on 31 December, 2015), Full-text Translation, available at: www.ieee.es/Galerias/fichero/OtrasPublicaciones/Internacional/2016/Russian-National-Security-Strategy-31Dec2015.pdf [accessed April 2, 2018]. To see more: "Sub-article 'e' of the 55th clause of the article II", Embassy of the Russian Federation to the United Kingdom of Great Britain and Northern Ireland, The Military Doctrine of the Russian Federation (approved by the President of the Russian Federation Vladimir Putin on December 25, 2014), 29 Jun. 2015, rusemb.org.uk/press/2029 [accessed April 2, 2018].

security. Even though it is seen as an important factor to prevent war and military conflict,[74] the country reserves the right to use it in case of an act of war.[75]

Although the NPT envisages that it is strictly forbidden to sell or to merchandise any kind of nuclear weapon related material and technology or pursue any kind of foreign policy regarding the military aspect of nuclear power, there is no such kind of provision regarding the civilian dimension of nuclear policy. Considering the general idea that Russia's nuclear capacity is an indicator of her great power status and the fact that the military aspect of the nuclear energy is not allowed to be included in its foreign policy, the Russian officials put a special emphasis on the country's civilian nuclear capacity. The civilian dimension of nuclear energy is regarded as not only an economic source but a provider of political strength and status over other countries. In this context, there are some scholars who have emphasized the significance of civilian nuclear energy in Russian foreign policy. For example John Lough indicated that Russia has been extending her influence over various countries and corporations through her nuclear energy capabilities.[76] Furthermore, Ian Armstrong has claimed that Russia has been pursuing an indistinctive foreign policy that aims to build a global nuclear empire.[77] According to him, Russia has been building nuclear energy reactors over crucial countries in the overseas and has become the word-wide

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[74] Embassy of the Russian Federation to the United Kingdom of Great Britain and Northern Ireland, "Article II/16th clause", The Military Doctrine of the Russian Federation (approved by the President of the Russian Federation Vladimir Putin on December 25, 2014), 29 Jun. 2015, rusemb.org.uk/press/2029 [accessed April 2, 2018].

[75] Ibid., Article III/27th clause.

[76] John Lough, *Russia's energy diplomacy*, Russia and Eurasia Programme, Chatham House Briefing Paper Vol. 1, London 2011, pp. 5, 7, 13.

[77] Ian Armstrong, Russia is creating a global nuclear power empire, *Global Risk Insights*, 29 October 2015, globalriskinsights.com/2015/10/russia-is-creating-a-global-nuclear-power-empire/ [accessed April 5, 2018].

supplier of nuclear power. As such the country has been obtaining substantial geopolitical influence, besides the billions of dollars of economic return, over the regions where ROSATOM has been pursuing its projects.[78] Moreover, Marco Giuli has indicated that the Russian Federation has been utilizing nuclear energy as a political tool for her foreign policy objectives over the Middle East and North Africa region.[79] He has also noted that Moscow is using more of her nuclear energy as an asset to improve and strengthen her relations with the Middle Eastern and North African countries such as Iran, Egypt, Algeria, Jordan, Saudi Arabia, Turkey and the United Arab Emirates.[80] Likewise, Paul Stronski and Richard Sokolsky have asserted that Russia has been enjoying civilian nuclear projects to extend her influence over various countries such as Hungary and Turkey.[81] Furthermore, there are several projects conducted by ROSATOM in the Middle East and North Africa.[82] In this vein, NPPs are not only domestic electricity providers (especially for sustainable industrial development) but also sources of economic income and political influence, further empowering Russia.

Although these scholars have addressed the role of the civilian aspect of nuclear energy and its importance in the Russian foreign policy, the subject has yet to be discussed more comprehensively. None of the previous works in the current literature

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[78] Ibid.

[79] Marco Giuli, "Russia's nuclear energy diplomacy in the Middle East: why the EU should take notice", *European Policy Centre*, Policy Brief, 21 Feb. 2017.

[80] Ibid.

[81] Paul Stronski and Richard Sokolsky, *The return of global Russia: an analytical framework, Carnegie Endowment for International Peace*, Washington, DC 2007, pp. 15-21, 25-26.

[82] Ibid.

aimed to clarify the role of civilian aspect of nuclear energy within the specific framework of Russia's relations with the NPP-imported countries. Besides, Russian-Turkish relations also have not been analyzed from this perspective. This thesis aims to contribute to the literature by specifically focusing on how the NPP project, used as a foreign policy tool by Russia shapes this country's relations with Turkey.

1.3. Outline & Methodology

This thesis is consisted of four chapters. Subsequent to the Introduction, the second chapter aims to explain nuclear energy's role as foreign policy tool for the Russian Federation. This chapter is divided into two main parts: first a brief historical background which clarifies the Russian nuclear power status before the Putin era is provided. The second part of the chapter focuses mainly on nuclear energy as a foreign policy tool during Putin's presidency by analyzing Russian nuclear capacities and strategic goals. The third chapter looks into Russia's nuclear energy policies towards Turkey and tries to explain the causes and the effects of this policy on the Russian foreign policy dynamics in Turkey. This chapter specifically investigates the relations between the two countries within the context of the Akkuyu NPP project. The conclusion summarizes the chapters and tries to answer the research question posed in the Introduction within the theoretical framework used in the thesis.

This study uses a qualitative research method in an attempt to understand the extent of the influence of Russia's exportation of NPPs on Turkey. A qualitative research, allowing us "to examine subjects in depths", is "a unique tool for studying what lies behind, or underpins a decision, attitude, behavior or other phenomena".[83] For the purposes of this thesis, books, journal articles, newspapers and internet sources on

[83] Jane Ritchie, "The applications of qualitative methods to social research", in: Jane Ritchie and Jane Lewis, ed., *Qualitative research practice: a guide for social science students and researchers*, Sage Publications, London 2003, p. 28.

the topic (in Turkish, English and Russian) are utilized. In addition, the English translations of some on-line official documents of the Russian Federation as well as the interviews and declarations of Russian officials are used. In the third chapter some remarks made by academician in this field are also integrated to the study. This thesis also utilizes the numerical and graphical data collected from the United Nations (UN), the Organization for Economic Co-operation and Development (OECD), the International Atomic Energy Agency (IAEA), the International Energy Agency (IEA) and the Nuclear Energy Agency (NEA), the Energy Information Administration (EIA), the World Nuclear Association (WNA), and the Nuclear Energy Institute (NEI).

The thesis also utilizes the numerical and graphical data collected from public libraries and university libraries (Middle East Technical University, the University of Hamburg, the Hacettepe University). Furthermore, the on-line resources of the governmental institutions of the Russian Federation [e.g. the Security Council of the Russian Federation (Sovet Bezopasnosti Rossiyskoy Federatsii), the Ministry of Foreign Affairs of the Russian Federation, the Ministry of Defense of the Russian Federation, the Ministry of Economic Development of the Russian Federation] have been utilized as well. Notwithstanding, the on-line resources of the governmental institutions of the Republic of Turkey (Republic of Turkey Ministry of Treasury and Finance Republic of Turkey Ministry of Energy and Natural Resources, Republic of Turkey Ministry of Foreign Affairs, Republic of Turkey Ministry of National Defense, Republic of Turkey Ministry of Trade, Republic of Turkey Ministry of Industry and Technology, inter alia) are mainly analyzed. The on-line available resources of the non-governmental institutions, news and media groups, international organizations and think-tanks have also been used.

CHAPTER 2

NUCLEAR ENERGY AS A FOREIGN POLICY TOOL OF RUSSIA BETWEEN 2000-2019

2.1. Russia as a Nuclear Power: Historical Background

As mentioned in the Introduction, the status of nuclear power can be derived from two different aspects: military and civilian. In order to be able to comprehend the role of nuclear energy in Russian foreign policy, one should be aware of the difference between the military and civilian aspects of nuclear energy. The first and foremost difference between the civilian electricity generation and nuclear bomb production is the level of enriched uranium. For both purposes, easily fissioned element, U235, is utilized. However, although the isotope of the U235, U238 can be found in nature by a ratio of 99,29%, the same ratio for U235 is just 0,71%.[84] Therefore, the level of U235 has to be enriched relative to U238. For civilian purposes to be utilized as a fuel, the enrichment of uranium has to be performed from the 0,71% level to 2-5%.[85] This is the level used in most of the nuclear reactors in the world and it is considered as the Low-Enriched Uranium Level (<20%).[86] For military purposes on the other hand, in order to have nuclear weapons, the

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[84] Alexander Glaser, "On the Proliferation Potential of Uranium Fuel for Research Reactors at Various Enrichment Levels", *Science and Global Security,* Vol. 14, No. 1, Taylor & Francis Group 2006, p. 2.

[85] IAEA, *Nuclear Fuel Cycle Information System: A Directory of Nuclear Fuel Cycle Facilities,* Nuclear Fuel Cycle and Materials Section of International Atomic Energy Agency, Vienna 2009, p. 16.

[86] Alexander Glaser, "About the enrichment limit for research reactor conversion: why 20%?", International Meeting on Reduced Enrichment for Research and Test Reactors (RERTR), Boston 2005, p. 2.

aforementioned level of uranium has to be enriched at least to 90% and this level is regarded as the High Enriched Uranium Level or Weapon Grade.[87] The high and low enriched uranium levels constitute the main difference between the two dimensions of nuclear power.

The Russian Federation possesses both aspects of nuclear energy. According to the Nuclear Non-Proliferation Treaty (NPT), the country is officially recognized as a nuclear weapon state.[88] However, according to the same treaty, the country is not allowed to transfer its nuclear weapon technology or to assist any country in a way that might end up with nuclear weapon production[89]. Besides, Russia objects the use of nuclear weapons as a threat against any country and it is in favor of nuclear non-proliferation.[90] On the other hand, since there is no restriction on the civilian use of nuclear energy, the country only generates electricity for domestic purposes, but also exports electricity and nuclear goods and services including NPP materials and technology in a civilian context.

On a global scale, when the first years of nuclear technology are considered, it is seen that the civilian dimension of this technology had been thrown aside due to the

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[87] Frank von Hippel, *Banning the Production of Highly Enriched Uranium*, International Panel on Fissile Materials (IPFM), Research Report No. 15, Princeton 2016, p. 2.

[88] United Nations, disarmament treaties database: Signatory states of the treaty on the Non-Proliferation of Nuclear Weapons (NPT), United Nations Office for Disarmament Affairs (UNODA), disarmament.un.org/treaties/t/npt [accessed February 2, 2019].

[89] United Nations disarmament treaties database: The text of treaty on the Non-Proliferation of Nuclear Weapons (NPT), "Article I", United Nations Office for Disarmament Affairs (UNODA), disarmament.un.org/treaties/t/npt/text [accessed April 2, 2018].

[90] The Ministry of Foreign Affairs of the Russian Federation, Third chapter/Clause 32c, Foreign policy concept of the Russian Federation (approved by President of the Russian Federation Vladimir Putin on November 30, 2016), available at: hhttp://www.mid.ru/en/foreign_policy/official_documents/-/asset_publisher/CptICkB6BZ29/content/id/2542248 [accessed April 1, 2018].

environment created by the Cold War. At those times, both Soviets and Americans focused on the militaristic capacities, ergo nuclear power status had been derived via nuclear weapons.[91] Back then, the nuclear weapons were the main determinants of the greatness of a country.[92] As a consequence, both countries entered into a nuclear armament race. The main purpose was to achieve a second-strike or retaliation capability by which the nuclear deterrence would be maintained.[93] More deterrence meant less possibility of a nuclear war.[94] This is one of the main reasons why an actual war during the Cold War era did not erupt. In brief, the Soviet Union's nuclear power status had first been acknowledged because of its nuclear weapon capabilities. After the collapse of the Soviet Union, the fierce nuclear armament race has critically slowed down. As will be elaborated more in this chapter, until the Putin era, Russia showed little interest in nuclear development both in civilian and military terms.

However, there emerged a shift during Putin's era, as he attached great importance to nuclear capacity, especially its civilian dimension. Because of the various nuclear arms reduction treaties and the low possibility of nuclear war among the nuclear weapon states, Kremlin started to approach nuclear weapons only as a safeguarding matter against conventional war and nuclear aggression. Russia realized the fact that neither nuclear power status nor great power status necessarily depended on the number of nuclear weapons anymore. Instead, just as other kinds of energy resources (i.e. natural gas or petroleum), the civilian dimension of nuclear power as an energy

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[91] Ian Smart, "The Great Engines: The Rise and Decline of a Nuclear Age", *International Affairs,* Vol. 51, No. 4, 1975, pp. 548-551.

[92] Ibid., p. 545. See also: Robert Gilpin, *War and Change in World Politics*, New York: Cambridge University Press, 1981, p. 215.

[93] Robert Gilpin, *War and Change in World Politics*, 1981, pp. 215-216. See also: Kenneth Waltz, "Nuclear myths and political realities", *American Political Science Review*, Vol. 84, No. 3, 1990, pp. 732-738.

[94] Ibid.

resource could now be used as a foreign policy and enforcement tool by which influence over other countries can be increased. The following parts will provide detailed information regarding the perceptions of the Russian nuclear status and the country's approach towards nuclear technology, starting with the Soviet era.

2.1.1. The Soviet Era

From the beginning of the second quarter of the 20th century, owing to the contributions of successful scientists who developed nuclear technology by focusing on nuclear physics, NPPs could have finally be constructed.[95] However, before their utilization as electricity generators, they were primarily used as a weapon by the United States in 1945 (Hiroshima and Nagasaki).[96] After four years, the Union of Soviet Socialist Republics (USSR) successfully tested its first nuclear bomb in 1949 and became the second nation that ever had nuclear weapons.[97] Since that year, both countries paid serious attention to improve their nuclear weapon technology. As such, the U.S tested its first hydrogen bomb in 1952 and Soviets followed Americans two years later.[98] At the end of the 1960s, the Soviets were in possession of 10.671 nuclear weapons whereas the U.S acquired 27.552.[99] Countries like France and

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[95] U.S. Department of Energy, *The History of Nuclear Energy*, Office of Nuclear Energy, Science and Technology, Washington D.C 1994, pp. 5-9.

[96] Ibid., p. 13.

[97] Jennifer Mathers, *The Russian nuclear shield from Stalin to Yeltsin,* Macmillan Press, London 2000, p. 4.

[98] Joseph Cirincione, *Bomb Scare: The History and Future of Nuclear Weapons,* Columbia University Press, New York 2007, p. 23.

[99] Hans M Kristensen and Robert S, "Global nuclear weapons inventories, 1945-2013", *Bulletin of the Atomic Scientists,* Vol. 69, No. 5, 2013, p. 78.

China could also produce their own nuclear weapons 20 years after the USSR, however even the U.K, the closest competitor, had 306 nuclear weapons in its stockpile in this period.[100]

The Soviet Union had been recognized as a nuclear power since the very beginning of nuclear history. This recognition indeed was not derived because of its civilian capacity but military capacity, as the country ranked second as nuclear weapon country with its significant deterrence power. As mentioned in the Introduction, back then the Soviet Union was described as a great power due to its leading position in the nuclear arms industry.[101] Some scholars qualified the country as a superpower due to its nuclear power derived from nuclear weapons and deterrence capacity.[102] The nuclear power of the USSR evolved and passed through different stages over the course of years. To begin with, during Stalin's era it started as a response to U.S nuclear technology.[103] From the Soviet perspective, U.S nuclear weapons were commonly seen as a threat to national security.[104] Furthermore, Stalin considered the nuclear weapon as a "national prestige".[105] To this end, he supported the effort for nuclear development regardless of the expenses.[106] In Stalin's era, the USSR

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[100] Ibid.

[101] Cirincione, *Bomb Scare: The History and Future of Nuclear Weapons*, 2007, p. 47.

[102] John J. Mearsheimer, "Why We Will Soon Miss The Cold War", *The Atlantic Monthly,* Vol. 266, No.2, 1990, p. 36.

[103] Mathers, *The Russian nuclear shield from Stalin to Yeltsin*, 2000, p. 3.

[104] Ibid.

[105] Cirincione, *Bomb Scare: The History and Future of Nuclear Weapons*, 2007, p. 17.

[106] Ibid., p. 19.

produced 120 nuclear weapons though they were running behind the United States. When Nikita Khrushchev came to power in 1956, tensions between the two countries had already been very high. Shortly after that, the two countries came close to a nuclear war, i.e. the Cuban Missile Crisis.[107] Meanwhile, the Soviet Union had increased its nuclear weapon inventory to 5242.[108] When Leonid Brezhnev became the leader of the country, he almost septupled the nuclear arsenal in the stockpile.[109] The reason was not only to contain the U.S and NATO influence over the region but also to maintain deterrence for national security. As a result of the huge increase in the number of nuclear weapons and their expansion in other countries in the 1960s, Nuclear Non-Proliferation Treaty (NPT) was signed by nuclear weapon and non-nuclear weapon states, entering into force in 1970.[110] In general, it is possible to suggest that during the Cold War era, the Soviet Union had an aggressive military doctrine regarding the nuclear issue.[111] The main concern was deterrence and as such the Soviet leaders tried to increase the number of arsenals in stockpiles as much as possible and tried to improve their nuclear industry to the highest extent.

All that would start to change when Mikhail Gorbachev came to power in 1985. Unlike the earlier periods, the quantity of nuclear arsenals started to decrease in his

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[107] Ibid., pp. 27-29.

[108] Kristensen and Norris, "Global nuclear weapons inventories, 1945-2013", 2013, p. 78.

[109] Ibid.

[110] United Nations disarmament treaties database: The text of treaty on the Non-Proliferation of Nuclear Weapons (NPT), United Nations Office for Disarmament Affairs (UNODA), disarmament.un.org/treaties/t/npt/text [accessed April 2, 2018].

[111] Waltz, "Nuclear myths and political realities", 1990, pp. 736-741.

era. The Intermediate-Range Nuclear Forces Treaty (INF Treaty),[112] Strategic Arms Reduction Treaty (START)[113] and, the NPT regime had an impact on this decline. In addition to these restrictions, the Chernobyl disaster[114] forced the Soviet leaders to take high precautions and to improve security measures. After the disaster, the impetus on Soviet nuclear armament was ended. Gorbachev promoted measures to limit nuclear arms and followed completely different policies which eventually caused a decline in nuclear arms[115] and a rise of opposition towards the nuclear industry.

Although during the Cold War era nuclear capacity was mostly understood in military terms, there were some initiatives for the peaceful use of nuclear energy going all the way back to the 1950s. These initiatives were first discussed in the U.S after the catastrophic results of the use of the atomic bomb on Japan. In this context, the first nuclear power plant in which electricity was generated for the first time was opened up in 1951 in the U.S.[116] Following the U.S discovery, the Soviet Union also

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[112] Signed in 1987 between the-then U.S president Ronald Reagan and the-then USSR president Mikhail Gorbachev. The aim of the agreement was to eliminate all land-based short-and intermediate-range missiles. Both countries had to dismantle every nuclear and conventional missile that could reach distances of 500 to 5,500 kilometers. Retrieved from: Cirincione, *Bomb Scare: The History and Future of Nuclear Weapons*, 2007, p. 40.

[113] Strategic Arms Reduction Treaty signed in 1991 between the then U.S president George H. W. Bush and the-then USSR president Mikhail Gorbachev. It aimed to limit nuclear arms in addition INF treaty. Retrieved from: Cirincione, *Bomb Scare: The History and Future of Nuclear Weapons,* 2007, pp. 40-41.

[114] Occurred during a test on the emergency shutdown on April 26, 1986. 3 million people and 40 thousand hectares of land were affected. Retrieved from: Susanne Oxenstierna, *Russia's Nuclear Energy Expansion*, Stockholm: Swedish Defence Research Agency, Department for Security Policies and Strategic Studies, 2010, pp. 17-18.

[115] Kristensen and Norris, "Global nuclear weapons inventories, 1945-2013", 2013, p. 78.

[116] U.S. Department of Energy, *The History of Nuclear Energy*, Office of Nuclear Energy, Science and Technology, Washington D.C 1994, pp. 8-13.

generated its first electricity via a NPP in 1954.[117] That was the first time when an NPP generated electricity for commercial purposes. Even though up until that time nuclear arsenals and deterrence capacity were the major concerns of the Soviet leaders, after 1954 civilian nuclear technology of the Soviet Union had started to develop. In this context, just in 15 years, 510 Megawatts electric (MWe) were added to the previous capacity of 5MWe.[118] Although Khrushchev was the leader who clearly led the country to civilian nuclear development, it was in Brezhnev's period that the Soviet NPPs cracked the top. As such, in the late 1970s the total installed capacity of the country reached to 7040 MWe.[119] In 1982 the total capacity that was possessed was around 18.000 MWe.[120] Through these NPPs, the Soviets generated 86 billion kilowatts (kW) electricity which constituted 6.5% of the country's total electricity consumption.[121] When the nuclear incident in Chernobyl happened, the Soviets had 25 NPPs in operation.[122] Their total capacity exceeded 23.000 MWe.[123] However, after the incident, the civilian nuclear industry lost its former value and

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[117] Oxenstierna, *Russia's Nuclear Energy Expansion*, 2010, p. 14.

[118] Boris Semenov, "Nuclear power in the Soviet Union", *IAEA Bulletin,* Vol. 25, No. 2, 1983, p. 48.

[119] Ibid.

[120] Ibid., p. 47.

[121] Ibid.

[122] Miles Pomper, "The Russian nuclear industry: Status and prospects", *Nuclear Energy Futures Paper,* Vol. 3, The Centre for International Governance Innovation 2009, p. 3.

[123] IAEA, "Country Nuclear Power Profiles: Russian Federation", International Atomic Energy Agency, cnpp.iaea.org/countryprofiles/Russia/Russia.htm [accessed March 2, 2019]. See also: WNA, "Nuclear Power in Russia", World Nuclear Association, www.world-nuclear.org/information-library/country-profiles/countries-o-s/russia-nuclear-power.aspx [accessed March 3, 2019].

importance.[124] While the new construction projects were being canceled, several older and smaller NPPs were taken either under maintenance or closed permanently.[125] That was one of the reasons why civilian nuclear sector came into a standstill during the post-Soviet era as well,[126] in addition to some other factors such as the collapse of the governmental system and the financial crises following the dissolution of the Soviet Union.[127] Furthermore, the country lost control of the possession of some NPPs as a result of territorial disintegration.[128] In the next part, the developments that took place in the first decade after the collapse of the Soviet Union regarding nuclear technology are described.

2.1.2. The Post-Soviet Era until Putin's Presidency

After the collapse of the Soviet Union and the establishment of the Russian Federation, nuclear arms were dramatically decreased. To be more precise, during Boris Yeltsin's reign which lasted until 2000, Russian nuclear inventory was decreased from 32.000 nuclear arsenals to 12.000 weapons.[129] As it can be seen from the numbers, Russia realized the fact that efforts to increase the number of nuclear

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[124] Pomper, "The Russian nuclear industry: Status and prospects", 2009, p. 3. See also: David Bodansky, *Nuclear energy: principles, practices, and prospects,* New York: American Institute of Physics, 2007, pp. 49-50.

[125] Bodansky, *Nuclear energy: principles, practices, and prospects*, 2007, pp. 49-50.

[126] Pomper, "The Russian nuclear industry: Status and prospects", 2009, p. 3.

[127] Ibid.

[128] Outrider, "U.S. and Russia: Arms Race to Nowhere", Nuclear Weapons, Outrider Foundation, outrider.org/nuclear-weapons/articles/us-and-russia-arms-race-nowhere/ [accessed March 7, 2019].

[129] Kristensen and Norris, "Global nuclear weapons inventories, 1945-2013", 2013, p. 78.

weapons in its inventory were a burden on the economy especially if there was sufficient capacity of deterrence. This did not mean that the significance given to nuclear weapons was lost. Nonetheless, as a consequence of the acknowledgment of the low possibility of a nuclear war, the investments over nuclear weapons were decreased. Furthermore, as a result of the dissolution, the country has lost significant territories over which nuclear arms and reactors were deployed. Some of those arms were given back to Russia and others were dismantled.[130] Besides, there occurred several other problems as a result of the collapse and serious steps had to be taken in order to recover the economy, to establish governmental institutions, to develop the industry, and to improve relations with other ex-Soviet countries. All these factors resulted in a decrease in terms of the importance given to nuclear industry.

On the other side, the civilian dimension of nuclear technology was also forgotten since the country was struggling with these significant issues mentioned above. Furthermore, due to the Chernobyl accident, the civilian nuclear sector had taken a serious blow.[131] To crown it all, the financial crisis of 1998 unfolded.[132] As a consequence of all these factors, the improvements in the civilian nuclear industry drastically slowed down. As such, the new construction projects were down to 6 from 16.[133] Only three reactors have become operational between 1992 and 2002.[134] In 1995, the number of total NPPs were 29 and they provided only 13% of the total

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[130] Outrider, "U.S. and Russia: Arms Race to Nowhere", Nuclear Weapons, Outrider Foundation, outrider.org/nuclear-weapons/articles/us-and-russia-arms-race-nowhere/ [accessed March 7, 2019].

[131] Miles Pomper, "The Russian nuclear industry: Status and prospects", 2009, p. 3.

[132] Ibid.

[133] Bodansky, *Nuclear energy: principles, practices, and prospects,* 2007, pp. 49-50.

[134] Ibid.

electricity.[135] In 2000, the total installed capacity of the nuclear power plants was around 21.2 GWe.[136] The total output via these reactors was around 165.4 billion kWh.[137] Within the total electricity production, the nuclear's share was 15%.[138] This picture shows us both an increase in the efficiency of the current reactors (since the capacity did not increase much considering the output) and a decrease in the total electricity output. After the Chernobyl incident and the dissolution of the Soviet Union, Moscow's approach towards the nuclear industry was quite cautious. Neither overseas nor domestic projects were created or implemented. Both aspects of nuclear power lost attention. The former great power status of the Russian Federation derived from the prestige of being a nuclear country started to decline as well as the nuclear capacity and investments. The only noteworthy development was the establishment of the Ministry of Atomic Energy of the Russian Federation (Minatom) on a similar basis of USSR's Ministry of Nuclear Power Industry.[139] The purpose of this organization was to operate civilian and military aspects of nuclear energy together.[140] Minatom eventually evolved into the current State Atomic Energy Corporation (ROSATOM).[141] Following the ROSATOM's establishment, during the post-1998 financial crisis period, specifically in the new era that started with Putin in

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[135] Oxenstierna, *Russia's Nuclear Energy Expansion*, 2010, pp. 17-18.

[136] IAEA, "Country Nuclear Power Profiles: Russian Federation", International Atomic Energy Agency, cnpp.iaea.org/countryprofiles/Russia/Russia.htm [accessed March 2, 2019].

[137] Ibid.

[138] Ibid.

[139] Oxenstierna, *Russia's Nuclear Energy Expansion*, 2010, pp. 18-19.

[140] Ibid.

[141] Ibid.

2000, there occurred expectations for the re-establishment of the Soviet-era nuclear power status of the country.[142] The next part investigates the nuclear power perception in Russia and specifically focuses on the civilian nuclear industry in terms of how it became a foreign policy tool during Putin's era.

2.2. Nuclear Energy as Foreign Policy Tool in Putin's Era

ROSATOM was established after the privatization of the Federal Atomic Energy Agency, a successor of Minatom in 2007.[143] The bottom line is, ever since the privatization, the nuclear industry has been steered autonomously due to the corporate structure of ROSATOM, even though it is officially under the authority of the government.[144] This autonomy has been ensuring "convenience, promptness, feasibility, profitability and the long arm of the law without political or long bureaucratic contemplations".[145] From its establishment on, the corporation has become very influential both internally and externally.

The start of a new era with Putin in 2000 brought an impetus to Russian nuclear industry, specifically to its civilian aspect, mostly due to ROSATOM. As such, NPP construction has gained a significant momentum and the nuclear industry has become prominent for Russian domestic and foreign policy. At first, it was perceived as a slight shift in Moscow's perception of nuclear power. Within the framework of

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[142] Bodansky, *Nuclear energy: principles, practices, and prospects,* 2007, p. 50.

[143] Nikita Minin, *External Vector of Rosatom's Development: Case Studies of Activities in Turkey, Finland and Hungary (Master's Thesis),* Brno 2016, pp. 33-35 retrieved from: is.muni.cz/th/suv2u/Master_s_Thesis.pdf [accessed March 2, 2019].

[144] Ibid.

[145] Ibid.

military doctrine,[146] foreign policy concept[147] and national security strategy documents,[148] on the one hand there is an emphasis on nuclear deterrence and the ability to prevent war; on the other hand there is a full and firm commitment to non-proliferation regime of NPT for international peace and security. In short, having nuclear weapons still preserves its previous importance, however the investments on nuclear weapons were not as high as the Soviet times. Instead, public spending was not gradually directed to nuclear power plants to generate electricity. That slight shift however, has turned into a major shift during Putin's last term in office (2012-present). The increase in the importance given to NPPs usage for civilian purposes is an indicator of an important turn in the perception of Russia as a nuclear power.

The ROSATOM's establishment and its increased power can be seen as a direct consequence of this new perception and the importance given to the civilian nuclear industry. Globally speaking, the legitimate base of civilian nuclear energy was established after the nuclear deal signed between India and the U.S in 2005, which

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[146] President of Russia (Prezidenta Rossii), "The Military Doctrine of the Russian Federation (Voyennaya doktrina Rossiyskoy Federatsii) approved by decree of the President of the Russian Federation", Official Internet Resources of the President of Russia (Ofitsial'nyye internet-resursy Prezidenta Rossii), Presidential Executive Office (Administratsiya Prezidenta Rossii), 3 Oct 2018, http://kremlin.ru/supplement/461 [accessed October 25, 2018] (in Russian).

[147] The Ministry of Foreign Affairs of the Russian Federation, Foreign policy concept of the Russian Federation (approved by President of the Russian Federation Vladimir Putin on November 30, 2016), available at: hhttp://www.mid.ru/en/foreign_policy/official_documents/-/asset_publisher/CptICkB6BZ29/content/id/2542248 [accessed April 1, 2018].

[148] "103rd Clause of the Article IV. Ensuring National Security/Strategic Stability and Equal Strategic Partnership", Russian National Security Strategy (Approved by Russian Federation Presidential Edict 683 on 31 December, 2015), Moscow 2015, Full-text Translation, available at: www.ieee.es/Galerias/fichero/OtrasPublicaciones/Internacional/2016/Russian-National-Security-Strategy-31Dec2015.pdf [accessed May 1, 2018].

was approved by International Atomic Energy Agency (IAEA) in 2008.[149] The deal was further legalized in 2008[150] by the Nuclear Suppliers Group (NSG) which was established to assure a nuclear non-proliferation regime and to maintain standards and rules for nuclear exports.[151] In sum, it was the first time[152] when a nuclear weapon owner country[153] (U.S), signed a nuclear cooperation treaty with a non-signatory state (India) to NPT.[154] Although there were not any restrictions towards the civilian nuclear technology transfer under the NPT regime, states had concerns on the transformation of this technology. That is why they always refrained to do so until the legit deal between the U.S and India in 2008, which now allowed any other country to sign an agreement within the context of "civilian nuclear" trade. The nuclear deal between U.S and India, henceforth, is regarded as a precedent for future cooperation deals on the export of NPP and supply of nuclear goods for civilian

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149 U.S. Department of State, U.S. - India: Civil Nuclear Cooperation, U.S. Department of State Archive, 2001-2009.state.gov/p/sca/c17361.htm [accessed May 1, 2018].

150 Sario Bano, "India and the Nuclear Suppliers Group (NSG) Membership", Turkish Journal of International Relations Vol. 12, No. 2, 2013, pp. 59-62.

151 The Nuclear Suppliers Group (NSG) founded in 1974 aims to prevent nuclear exports for peaceful purposes from being used to make nuclear weapons. Retrieved from: NSG, "Nuclear Suppliers Group/About the NSG", Nuclear Suppliers Group, www.nuclearsuppliersgroup.org/en/about-nsg [accessed April 2, 2018].

152 On September 6, 2008, the NSG exempted India from its guidelines, making it the first country that had not signed the NPT (Treaty on Nuclear NonProliferation) to be allowed to have nuclear trade with NSG members. India is now bidding for the NSG membership. Retrieved from: Bano, "India and the Nuclear Suppliers Group (NSG) Membership", 2013, pp. 59-62.

153 NTI, "Treaty on the Non-Proliferation of Nuclear Weapons (NPT)", Nuclear Threat Initiative, Last Updated: April 15, 2018, www.nti.org/learn/treaties-and-regimes/treaty-on-the-non-proliferation-of-nuclear-weapons/ [accessed May 21, 2018].

154 "United Nations disarmament treaties database: The text of treaty on the Non-Proliferation of Nuclear Weapons (NPT)", United Nations Office for Disarmament Affairs (UNODA), disarmament.un.org/treaties/t/npt/text [accessed June 1, 2018].

purposes.[155] As such, Russia also had a legit cooperation deal with India in 2009, a deal that is expected to bring significant economic benefits in addition to previous trade benefits.[156] Since then, Moscow transformed its nuclear policy into the civilian direction. In this context, the exportation of nuclear goods and services has become the primary goal for both economic and political/diplomatic reasons.

From the economic perspective, "The Energy Strategy" document published by the Ministry of Energy of the Russian Federation in 2010 shows us that, the modernization of nuclear power plants, the enhancement of nuclear power capacities, and the need to strengthen the nuclear position of the country in the world, are of paramount importance for Russian energy policy.[157] In this context, ROSATOM assumes a critical role as well. By looking into its financial situation, we see that only in 2017 its revenue was around $15 billion.[158] Furthermore, 20 intergovernmental and interdepartmental agreements were signed which will further increase the revenues.[159] The company's strategy is to expand 30% in 20 years.[160]

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[155] Shaun Burnie, *The U.S - India Nuclear Cooperation Agreement: The end of the Nuclear Non-Proliferation Regime*, Greenpeace, Germany 2008, pp. 35-40.

[156] Dmitry Pobedash, "Russian-Indian nuclear cooperation", Ural Federal University, available at: center-brics.urfu.ru/fileadmin/user_upload/BRICS/Pobedash.pdf, pp. 1-2.

[157] Ministry of Energy of the Russian Federation, *Energy Strategy of Russia: For the Period Up to 2030,* Institute of Energy Strategy, Moscow 2010, p. 22, 50.

[158] ROSATOM*, The Performance of State Atomic Energy Corporation Rosatom in 2017*, The Public Annual Report, p. 11.
Available at: rosatom.ru/upload/iblock/29c/29c061878dad37c189db341648c964b3.pdf [accessed March 7, 2019].

[159] Ibid., pp. 14-15.

[160] Ibid., p. 13.

From the diplomatic/political perspective, Russian civilian nuclear enterprise and its operator ROSATOM, is seen as a strategy to increase the geopolitical influence of the country over different continents. Since Putin's presidency, the Russian Federation has been pursuing civilian nuclear policy in Asia, South and North America, Europe, Middle East and North Africa.[161] It can be suggested that, apart from the economic returns, Russia wants to establish a nuclear commonwealth over which it could reign. For the same purpose, it is trying to increase its impact by establishing different operations and missions in 50 countries.[162] This policy includes both NPP construction and nuclear fuel exportation. To acknowledge the magnitude of the policy, one can check the ROSATOM's overseas portfolio, which exceeded $130 billion. 12 countries have imported NPPs and 15 countries have been importing nuclear fuel from the Russian Federation.[163] These arrangements bind countries to Russia for decades to come in terms of nuclear goods and services. In the case of a fuel supply cut or a project suspend, it would be very difficult for those states to find alternative fuel suppliers or to be able to complete the project.[164] This leverage is considered as one of the main ambitions of Kremlin. The documents on the foreign policy concept of the Russian Federation emphasizes "the consolidation of the

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[161] Boyan Dobrev, "Rosatom & Russia's Nuclear Diplomacy", Geopolitical Monitor, May 17, 2016 www.geopoliticalmonitor.com/rosatom-russias-nuclear-diplomacy/ [accessed March 9, 2019].

[162] ROSATOM*, The Performance of State Atomic Energy Corporation Rosatom in 2017*, p. 13.

[163] The State Atomic Energy Corporation (ROSATOM), "Fuel and Enrichment", www.rosatom.ru/en/rosatom-group/fuel-and-enrichmen/ [accessed March 7, 2019]. See also: ROSATOM*, The Performance of State Atomic Energy Corporation Rosatom in 2017*, pp. 28-29.

[164] Damien Sharkov, "Nuclear Power is Russia's New Weapon of Choice", April 28, 2015, Newsweek Magazine, www.newsweek.com/2015/05/01/nuclear-power-russias-new-weapon-choice-326198.html [accessed March 10, 2019].

Russian Federation's position as a center of influence in today's world".[165] Moreover, the national security strategy clearly states the aim of strengthening the position of the country in the sphere of nuclear energy.[166] It has been suggested that Russian nuclear policy has a very clear political aim, that is, to make countries dependent on Russia.[167] As such, the ultimate goal of Russian NPP exportation and ROSATOM's overseas influence is to gain a pivotal global role, influence, and political leverage.[168] For instance in Europe, Russia aims to use its nuclear power for maximizing its political interests.[169] Furthermore, nuclear cooperation with Saudi Arabia had a political agenda besides economic gains to contain U.S influence.[170] In the next part, Russian nuclear intentions will further be analyzed in terms of the country's capacities and intentions.

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[165] The Ministry of Foreign Affairs of the Russian Federation, First chapter/Clause 3c, Foreign policy concept of the Russian Federation (approved by President of the Russian Federation Vladimir Putin on November 30, 2016), available at: hhttp://www.mid.ru/en/foreign_policy/official_documents/-/asset_publisher/CptICkB6BZ29/content/id/2542248 [accessed April 1, 2018].

[166] "62/7th Clause of the Article IV. Ensuring National Security/Economic Growth", Russian National Security Strategy (Approved by Russian Federation Presidential Edict 683 on 31 December, 2015), Moscow 2015, Full-text Translation, available at: www.ieee.es/Galerias/fichero/OtrasPublicaciones/Internacional/2016/Russian-National-Security-Strategy-31Dec2015.pdf [accessed May 1, 2018].

[167] Alissa de Carbonnel, "Russian nuclear ambition powers building at home and abroad", Reuters, July 22, 2013, www.reuters.com/article/russia-nuclear-rosatom-idUSL5N0F90YK20130722 [accessed March 11, 2019].

[168] Minin, *External Vector of Rosatom's Development: Case Studies of Activities in Turkey, Finland and Hungary (Master's Thesis),* 2016, p. 15.

[169] Rauf Mammadov and Theodore Karasik, "Rosatom as a tactic in Russia's foreign policy." International Policy Digest, 19 Jul 2018, intpolicydigest.org/2018/07/19/rosatom-as-a-tactic-in-russia-s-foreign-policy/ [accessed 25 October 2018].

[170] Ibid.

2.2.1. Russian Nuclear Capacities and Strategic Goals

2.1.1.1. Capacities

In this part, the civilian dimension of Russian nuclear capacities is further explained in two main aspects: domestic and international. As of 2019, the Russian Federation's nuclear power plants consist of 35 operating reactors.[171] Three of these reactors are first generation type of Pressurized Water Reactors (PWR),[172] two are second generation type of pressurized water reactors,[173] twelve are third generation type of pressurized water reactors,[174] one is third-plus generation pressurized water

[171]Oskar Njaa, et al. *Russian Nuclear Power 2018*, The Bellona Foundation, Norway 2018, pp. 1-8.

[172] The first generation of pressurized water reactors were built between 1950-1970s with the total capacity varying from 50 MWe to 500 MWe. Russian PWRs are called as VVER-440 and VVER-230. They were the precursors of current big commercial reactors. Retrieved from: Stephen M. Goldberg and Robert Rosner, *Nuclear Reactors: Generation to* Generation, American Academy of Arts and Sciences, Cambridge 2011, pp. 3-14. See also: Njaa, *Russian Nuclear Power 2018*, 2018, pp. 1-8.

[173] The second generation of pressurized water reactors are designed to be economical and reliable for a typical lifetime of 40 years. The Russian types are known as VVER-440/213. They started to operate in the early 1970s. It is a very common type that comprises most of the reactors worldwide. Retrieved from: Goldberg and Rosner, *Nuclear Reactors: Generation to* Generation, 2011, pp. 3-14. See also: Njaa, *Russian Nuclear Power 2018*, 2018, pp. 1-8.

[174] The third generation pressurized water reactors are mainly second generation reactors which are developed through upgrades in the areas of fuel technology, thermal efficiency, construction, safety systems, and designs. Its lifespan is estimated to be 60 years. Russian types are called as VVER-1000 or V-320 pressurized water reactors. Retrieved from: Goldberg and Rosner, *Nuclear Reactors: Generation to* Generation, 2011, pp. 3-14. See also: Njaa, *Russian Nuclear Power 2018*, 2018, pp. 1-8.

reactors;[175] eleven reactors are second generation light water graphite reactors;[176] four are the second generation small graphite-moderated boiling water units;[177] and two are fast reactors.[178] Furthermore, there are eleven more units which are under construction and/or planned to be operational no later than 2031.[179] Those new units will bring the capacity around 11.000 MWe (11GWe).[180] Overall, the total capacity of

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[175] Third-plus generation pressurized water reactors are designed to enhance security, efficiency, and capacity of the third generation types. Its lifespan is estimated to be 60 years and Russian types are known as VVER-1200. Retrieved from: Goldberg and Rosner, *Nuclear Reactors: Generation to* Generation, 2011, pp. 3-14. See also: Njaa, *Russian Nuclear Power 2018*, 2018, pp. 1-8.

[176] The second generation light water graphite reactors are unique to the Russian Federation which are known as RBMK. It is also known as the light water graphite reactor (LWGR). It is a water-cooled reactor with individual fuel channels and using graphite as its moderator. As with a boiling water reactor (BWR), water boils in the fuel channels and steam is separated above them in a single circuit. It is very different from most other power reactor designs as it derived from a design principally for plutonium production. Retrieved from: S Goldberg and Rosner, *Nuclear Reactors: Generation to* Generation, 2011, pp. 3-14. See also: Njaa, *Russian Nuclear Power 2018*, 2018, pp. 1-8.

[177] The Second generation small graphite-moderated boiling water units are commonly known as BWRs. It is a type of nuclear reactor that uses light water as their coolant and neutron moderator. The steam that goes out from the core is generally used to turn the turbines. They are the second most used reactor for nuclear power generation in the world, after the PWRs. Retrieved from: Goldberg and Rosner, *Nuclear Reactors: Generation to* Generation, 2011, pp. 3-14. See also: Njaa, *Russian Nuclear Power 2018*, 2018, pp. 1-8.

[178] Fast Neutron or Fast Breeder Reactor is a nuclear reactor that uses fast neutron to generate more nuclear fuels than they consume while generating power. It enhances efficiency while utilizing resources. Retrieved from: Goldberg and Rosner, *Nuclear Reactors: Generation to* Generation, 2011, pp. 3-14. See also: Njaa, *Russian Nuclear Power 2018*, 2018, pp. 1-8.

[179] WNA, "Nuclear Power in Russia", World Nuclear Association, www.world-nuclear.org/information-library/country-profiles/countries-o-s/russia-nuclear-power.aspx [accessed March 3, 2019].

[180] Ibid.

the operational reactors is 27.9 GWe.[181] In 2017, the total electricity generated by these reactors were 202.868 billion kWh.[182] In other terms, these reactors meet almost 19% of the total electricity demand of the country.[183] The more important point is the forecasts that indicate that the current 19% share of the nuclear power plant's electricity generation in the total electricity demand of the country will be increased up to 30% in 2030, 50% in 2050 and 80% in the 2090.[184]

Such a significant amount of electricity provided by nuclear reactors enable Russia to export more its energy resources in higher quantities. According to the 2017 data, Russia has generated 1024 billion kWh electricity.[185] Almost 50% of this electricity was generated via natural gas (512 billion kWh) and around 200 billion m^3 of this total amount of gas have been used; this is almost the same amount that the country annually exports.[186] If 19% of the total electricity had not been supplied via nuclear power plants (202.8 billion kWh) then Russia might have lost almost half of its natural gas export volume, also the revenue obtained from that exportation. In that

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[181] The State Atomic Energy Corporation (ROSATOM), "Russia's nuclear electricity share increased up to 18.9% in 2017", rosatom.ru/en/press-centre/news/russia-s-nuclear-electricity-share-increased-up-to-18-9-in-2017/ [accessed March 7, 2019].

[182] The State Atomic Energy Corporation (ROSATOM), "Benefits of Nuclear Energy", www.rosatom.ru/en/investors/benefits-of-nuclear-energy/ [accessed March 7, 2019].

[183] The State Atomic Energy Corporation (ROSATOM), "Russia's nuclear electricity share increased up to 18.9% in 2017", rosatom.ru/en/press-centre/news/russia-s-nuclear-electricity-share-increased-up-to-18-9-in-2017/ [accessed March 7, 2019].

[184] IAEA, "Country Nuclear Power Profiles: Russian Federation", International Atomic Energy Agency, cnpp.iaea.org/countryprofiles/Russia/Russia.htm [accessed March 2, 2019].

[185] Gazprom, *PJSC Gazprom Annual Report 2017*, Gazprom Group, Moscow 2017, pp. 132.

[186] Evgenia Vanadzina, *The Development of Natural Gas Demand in the Russian Electricity and Heat Sectors,* Oxford Institute for Energy Studies, OIES Paper 136, Oxford 2018, pp. 1-2.

scenario, Moscow would have lost an important amount of its export revenue, since it would have needed more natural gas and could have exported less. However, through the help of NPPs, the country makes more profit from natural gas as it spends less on domestic usage and saves more for exportation.

Internationally, through ROSATOM, Moscow has been providing both enriched uranium and enrichment services to 16 countries.[187] Furthermore, it keeps the leading position in the global market of enriched uranium with its 36% share.[188] Notwithstanding, at least 15 countries (out of 30) which are in possession of nuclear reactors, have been importing uranium from Russia.[189] As a result, Moscow keeps its grip and influence on the global nuclear fuel market, not to mention the gain of economic revenues. In addition to its power and control over the nuclear fuel market, it also has been exporting NPPs to numerous countries. Currently, the number of Russian overseas NPP projects consist of 36 units in 12 different countries.[190] These countries are Turkey, China, Iran, India, Bangladesh, Jordan, Egypt, Nigeria, Hungary, Belarus, Armenia, and Finland.[191] Considering the existence of more than $133 billion portfolio for these overseas projects, Russia clearly has been dominating

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[187] The State Atomic Energy Corporation (ROSATOM), "Fuel and Enrichment", www.rosatom.ru/en/rosatom-group/fuel-and-enrichmen/ [accessed March 7, 2019].

[188] ROSATOM*, The Performance of State Atomic Energy Corporation Rosatom in 2017*, p. 18.

[189] The State Atomic Energy Corporation (ROSATOM), "Fuel and Enrichment", www.rosatom.ru/en/rosatom-group/fuel-and-enrichmen/ [accessed March 7, 2019].

[190] ROSATOM*, The Performance of State Atomic Energy Corporation Rosatom in 2017*, pp. 28-29.

[191] Ibid.

the global civilian nuclear sector.[192] It ranked in the first place regarding the overseas projects.[193] Furthermore the country is planning to expand these projects to the other continents and countries. This global expansion in the civilian nuclear sector needs to be further analyzed within the framework Russia's intentions, the topic of the next section.

2.1.1.2. Strategic Goals

Similar to the case of Russian natural gas exports to European countries, Belarus and Ukraine[194] that has been used as a mechanism of putting pressure, nuclear reactor exportation may also be utilized to serve a broader and perhaps hidden agenda on the part of Russia. It is possible to suggest that through these nuclear reactors Russia will be serving two interrelated purposes: to increase its global influence and power and to contain the influence of U.S and NATO.

Regarding the first purpose, it is possible to suggest that Russia, via the nuclear reactors, will be able to strengthen its influence over the energy sector of the countries which imported these reactors.[195] These will be more dependent on Russian

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[192] Ibid., p. 5.

[193]ROSATOM, "Projects", The State Atomic Energy Corporation, www.rosatom.ru/en/investors/projects/ [accessed March 7, 2019].

[194] David Gow, "Russia-Ukraine Gas Crisis Intensifies As All European Supplies Cut Off", The Guardian, Guardian News and Media, 7 Jan. 2009, www.theguardian.com/business/2009/jan/07/gas-ukraine [accessed March 7, 2019]. See also: Alex Nice, "Playing Both Sides: Belarus between Russia and the EU", Forschungsinstitut der Deutschen Gesellschaft für Auswärtige Politik e.V, DGAP-Analyse 2, Berlin 2012, p. 6 and Katja Yafimava, *The June 2010 Russian-Belarusian Gas Transit Dispute*, Oxford Institute for Energy Studies, Oxford 2010, p. 8.

[195] Minin, *External Vector of Rosatom's Development: Case Studies of Activities in Turkey, Finland and Hungary (Master's Thesis),* 2016, pp. 10-13.

energy. Secondly, Moscow is not only exporting the NPP but also possesses the right to operate them based on the bilateral agreements, as in the case of the Akkuyu project in Turkey.[196] Thirdly, states are extremely committed to complete these projects because of three reasons: increasing energy demand, high expenditures, and the desire to convert civilian technology to military technology. A number of the NPP importing countries are energy-poor and therefore unable to meet the total energy demand. In this context, NPPs are of great importance as they provide a considerable amount of energy depending on the number and the technology of NPPs. Furthermore, since the first installation cost is very high for NPPs and nuclear reactor constructions are huge investments, states want them to be completed as soon as possible and with as much affordable price as possible, even though the expenses are covered by Russia. Fourthly, Moscow will be the supplier of fuel for these NPPs and be responsible from the full fuel cycle.[197] Moscow has been improving its exports and external uranium supply capacity in order to consolidate the NPP imported country's dependency on itself. In this context, ROSATOM has the second largest uranium reserves and ranked at the fourth place in terms of production capacity. In order to provide nuclear fuels to at least four continents, Russia pursues a policy that envisages NPP construction in non-nuclear countries.

Following the construction of these NPPs, Moscow will be able to continue to have influence over the importer countries by delaying, reducing or even cutting the fuel supply. Since it would be very difficult for those countries to compensate, Russia will continue to enjoy being a monopoly. Furthermore, as it will not transfer technical

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[196] Akkuyu Nükleer A.Ş. (Akkuyu Nuclear Joint Stock Company), "About the project/ Akkuyu Nuclear JSC", www.akkunpp.com/akkuyu-nuclear-jsc [accessed 25 September, 2018].

[197] Fuel cycle means the series of steps involved in supplying fuel for nuclear reactors: "Uranium recovery, conversion, enrichment, deconversion, fuel fabrication, use of the fuel, interim storage of spent fuel, reprocessing, final disposal". For further information: USNRC, "Fuel cycle", United States Nuclear Regulatory Commission, www.nrc.gov/reading-rm/ basic-ref/glossary/fuel-cycle.html [accessed 16 April, 2019].

know-how regarding how to construct NPPs[198], Russia will continue to be the main supplier of nuclear goods and services. Even in those cases of malfunction and emergency situations such as nuclear accidents, only Moscow would have the power and know-how to act. Thus, nuclear importing countries will continue to be dependent on Russia as long as the nuclear reactor is functioning.

The second purpose of Moscow is to contain the global influence of the U.S and NATO. With the help of nuclear deals in Turkey, Iran, Egypt, Jordan, and Nigeria, Russia will strengthen its position in the Middle East and North Africa vis-a-vis the United States.[199] Most of these states do not have the technology to enrich uranium, uranium reserves or the technology for uranium extraction. Even if they do, Russia is in charge of nuclear supply. Therefore, they will be dependent on Russia in terms of nuclear fuel as well as nuclear reactor goods and services. Furthermore, the same goal will be achieved in Eastern and Northern Europe via Finland and Belarus. These are the regions where NATO has been deploying troops and enhancing its military build-up since the accession of multiple regional states to NATO.[200] Therefore, a nuclear deal with these countries is of high importance for Russian foreign policy as

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198 In the case of Akkuyu NPP, there will not be any know-how transfer since Russia will be the operator, not the NPP-imported country (Turkey).

199 Nikita Minin, *External Vector of Rosatom's Development: Case Studies of Activities in Turkey, Finland and Hungary (Master's Thesis),* Brno 2016, p. 39. Retrieved from: is.muni.cz/th/suv2u/Master_s_Thesis.pdf [accessed March 2, 2019]. See also: Rauf Mammadov and Theodore Karasik, "Rosatom as a tactic in Russia's foreign policy." International Policy Digest, 19 Jul 2018, intpolicydigest.org/2018/07/19/rosatom-as-a-tactic-in-russia-s-foreign-policy/ [accessed 25 October 2018]. For further: The Japan Times, "Russia unrivaled in nuclear power plant exports", Commentary/World/Opinion, 27 Jul 2017, www.japantimes.co.jp/opinion/2017/07/27/commentary/world-commentary/russia-unrivaled-nuclear-power-plant-exports/#.W94JxnozZ-U [accessed October 25, 2018].

200 Niall McCarthy, "NATO's Military Buildup In Eastern Europe", Statista/Defense and Arms, 1 Feb 2017, www.statista.com/chart/7877/natos-military-buildup-in-eastern-europe/ [accessed 25 February 2019].

a way to expand the country's influence.[201] Moreover, with close relations obtained through nuclear deals, Russia will improve its cooperation with countries such as Bangladesh, China, and India. India and Bangladesh are the crucial Asian allies of America. The U.S State Department attributes great importance to its relations with these two countries. However, a nuclear deal between Russia on the one hand and Bangladesh and India on the other will reduce Washington's influence and pose a threat for the U.S.

Similar to the cases of Bangladesh and India, the NPPs exported to Armenia, Iran, and Turkey will definitely solidify the Russian influence in these countries and as well as in other regional countries in South Caucasus and Central Asia. These regions attract the attention of U.S and NATO since the end of the Cold War. Turkey is a critical ally who has influence both in South Caucasus and Central Asia due to its Turkic background. Despite the Russian impact over these regions, they are very open for external influence. By keeping Turkey and Iran as close as possible via economic and diplomatic investments, Russia aims to maintain its influence and to contain the U.S presence. Besides, the nuclear development of Turkey and Iran helped by Russia might cause a domino effect in the region where other non-nuclear states would like to import the same technology.[202] In this context, Uzbekistan has

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[201] Minin, *External Vector of Rosatom's Development: Case Studies of Activities in Turkey, Finland and Hungary (Master's Thesis),* 2016, p. 87. See also: Boyan Dobrev, "Rosatom & Russia's Nuclear Diplomacy", Geopolitical Monitor, May 17, 2016 www.geopoliticalmonitor.com/rosatom-russias-nuclear-diplomacy/ [accessed March 9, 2019].

[202] Cambridge Dictionary defines the term domino effect as follows: A situation in which one event causes a series of related events, one following another Retrieved from: dictionary.cambridge.org/tr/s%C3%B6zl%C3%BCk/ingilizce/domino-effect [accessed January 30, 2019].

already started nuclear talks with Russia.[203] Furthermore, Azerbaijan is concerned with the Armenian attempt to enter into a new relation with Russia for nuclear technology, even if it is only civilian in status.[204] Last but not least, Hungary and Turkey are both NATO member countries. When Russia will complete the construction of NPPs in these countries, it will have an operating nuclear reactor in NATO member countries one of which is located in the middle of and the other located on the road to Europe. These projects are against U.S interests over the region.[205] In addition to natural gas, Russia will be supplying nuclear fuel to its NPPs which are being constructed in Hungary, resulting in Moscow's strengthening its already strong influence in the European energy market, and making the EU more

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[203] ROSATOM, "President of Uzbekistan S. Mirziyoyev and President of Russia V. Putin launched the First NPP Construction Project in Uzbekistan", The State Atomic Energy Corporation, rosatom.ru/en/press-centre/news/president-of-uzbekistan-s-mirziyoyev-and-president-of-russia-v-putin-launched-the-first-npp-construc/ [accessed March 11, 2019].

[204] Armenia has already one operating reactor at Metsamor which was constructed in the Soviet era. Its lifespan will be expired in 5 years. The important point here is that Armenia is mostly depended on nuclear reactors in terms of electricity (almost 40%). With this opportunity, Moscow pursues new NPP projects in order to obtain more influence and instigate Armenia's dependency to itself. The nuclear initiatives in Armenia and further cooperation between Moscow and Yerevan, bring two countries together while it raises several concerns in Baku. At a first glance, nuclear Armenia causes security concerns in Azerbaijan. Secondly, Azerbaijan does not want to lose a strategic ally to Armenia. Retrieved from: Shahin Abbasov, "Azerbaijan's Plans for Nuclear Power Raise Concerns", Eurasianet, May 30, 2014, eurasianet.org/azerbaijans-plans-for-nuclear-power-raise-concerns [accessed April 16, 2019]. See also: Nina Miholjcic, "Russia-Armenia Nuclear Energy Cooperation and the Metsamor Power Plant", Caucasus International Vol. 8, No. 1, Baku 2018, pp. 41-52. For further: David Boyajian, "Why Russia Needs Armenia and Vice Versa", Armenianweekly, February 5, 2019, armenianweekly.com/2019/02/05/why-russia-needs-armenia-and-vice-versa/[accessed April 16, 2019].

[205] Madison Freeman, "How Russia, China Use Nuclear Reactors To Win Global Influence", Defense One, July 13, 2018, www.defenseone.com/ideas/2018/07/china-and-russia-look-dominate-global-nuclear-power/149642/ [accessed March 14, 2019].

dependent on Russian energy.[206] In the end, therefore Russia also aims to strengthen its hand vis-a-vis Europe.[207]

In sum, Russia utilizes its nuclear power plants to consolidate its place as a center of influence and contain U.S power over various regions.[208] Among all these countries where Russia pursues NPP projects, Turkey constitutes a unique example due to four characteristics: its significant role in several regions, its being a NATO member and having a pro-Western foreign policy orientation, its being an energy resources-poor country and the type of NPP construction contract signed with Russia. Hence, the next chapter will focus particularly on Turkey and analyze the power and influence obtained by Russia as a consequence of its exportation of nuclear power plants in this country.

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[206] Dave Keating, "EU rejects Hungary-Russia nuclear fuel supply deal", Politico, March 13, 2015, www.politico.eu/article/eu-rejects-hungary-russia-nuclear-fuel-supply-deal/ [accessed March 18, 2019].

[207] Minin, *External Vector of Rosatom's Development: Case Studies of Activities in Turkey, Finland and Hungary (Master's Thesis),* 2016, pp. 100-104. See also: Rauf Mammadov and Theodore Karasik, "Rosatom as a tactic in Russia's foreign policy." International Policy Digest, 19 Jul 2018, intpolicydigest.org/2018/07/19/rosatom-as-a-tactic-in-russia-s-foreign-policy/ [accessed 25 October 2018]. For Further reads: The Japan Times, "Russia unrivaled in nuclear power plant exports", Commentary/World/Opinion, 27 Jul 2017, www.japantimes.co.jp/opinion/2017/07/27/commentary/world-commentary/russia-unrivaled-nuclear-power-plant-exports/#.W94JxnozZ-U [accessed October 25, 2018] ; Boyan Dobrev, "Rosatom & Russia's Nuclear Diplomacy", Geopolitical Monitor, May 17, 2016 www.geopoliticalmonitor.com/rosatom-russias-nuclear-diplomacy/ [accessed March 9, 2019] ; Damien Sharkov, "Nuclear Power is Russia's New Weapon of Choice", April 28, 2015, Newsweek Magazine, www.newsweek.com/2015/05/01/nuclear-power-russias-new-weapon-choice-326198.html [accessed March 10, 2019].

[208] Madison Freeman, "How Russia, China Use Nuclear Reactors To Win Global Influence", Defense One, July 13, 2018, www.defenseone.com/ideas/2018/07/china-and-russia-look-dominate-global-nuclear-power/149642/ [accessed March 14, 2019].

CHAPTER 3

NUCLEAR ENERGY AS A FOREIGN POLICY TOOL OF RUSSIA: THE CASE OF THE AKKUYU NUCLEAR POWER PLANT

This chapter will examine nuclear energy's utilization as a foreign policy tool by the Russian Federation, by specifically focusing on Turkey's nuclear cooperation with Russia. In this context, first Russia's nuclear energy policy towards Turkey will be analyzed in general terms. Then Turkey's nuclear energy policy in general and the Akkuyu project in particular are explained. In the final part, the impact of nuclear energy as a foreign policy tool of Russia on Turkey is examined.

3.1. Russia's Nuclear Energy Policy Towards Turkey

The relations between Russia and Turkey are established on thin ice, mainly because of the historic hostilities extending from the 16th century until the end of the Cold War.[209] Even after the Cold War era, during Boris Yeltsin's era the tensions were high due to several reasons[210] such as Turkey's position in the Chechen dispute, Russian involvement in PKK-induced violence and Turkey's active foreign policy in Central

[209] Mert Gökırmak, "From Foe to Friend: Turkish-Russian Relations in the 21st Century", International Journal of Social Inquiry Vol. 5, No. 1-2, 2012, pp. 85-102. See also: Zvi Magen and Gallia Lindenstrauss, "Russian-Turkish Relations: Contemporary Dilemmas of Past Empires", Strategic Assessment Vol. 16, No. 2, 2013, pp. 61-70. For further information see: İlyas Topsakal, "A History of Russian-Turkish Relations: From the Ottoman Empire Period to the End of the Soviet Era", in: Ali Askerov, ed., *Contemporary Russo-Turkish Relations: From Crisis to Cooperation,* The Rowman & Littlefield Publishing, Lexington Books, London 2018, pp. 1-27.

[210] TPQ, "Turkey's Relations With NATO & Russia: A Foreign Policy Impasse", Turkish Policy Quarterly, September 28, 2018, turkishpolicy.com/article/918/turkeys-relations-with-nato-russia-a-foreign-policy-impasse [accessed April 27, 2019]. See also: Robert O. Freedman, "Russia and the Middle East Under Putin", Ortadoğu Etütleri Vol. 2, No. 3, 2010, pp. 11-14.

Asia. Regardless of this negative picture however, cooperation in multiple areas has been accomplished in the long run, especially during Putin's era. The level of dialogue between the two countries passed through different stages depending on regional and international events as well as the involvement of the U.S in various issues such as the Kurdish YPG (People's Protection Units), the patriot missiles, the S-400 missile system and the American threat of economic sanctions.[211]

The foreign policy dynamics between the two countries have comprised several aspects that vary from energy to security.[212] These aspects are gradually consolidated with solid, long-termed, and high budgetary projects such as the Akkuyu NPP project.[213] As a result, the relations have evolved into a stage where it is not easy to go back, while at same time interdependence between the two sides is growing. Over the years, Moscow has searched for tools by which it can both shape and dominate bilateral relations and use in its foreign policy as a leverage in order to pressure Turkey on strategic regional and international events. Russian policymakers have always seen energy resources as an opportunity to obtain such a tool.[214]

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[211] Fatih Özbay, "The Relations between Turkey and Russia in the 2000s" SAM Perceptions Vol. 16, No. 3, 2011, pp. 69-92. See also: TPQ, "Turkey's Relations With NATO & Russia: A Foreign Policy Impasse", Turkish Policy Quarterly, September 28, 2018, turkishpolicy.com/article/918/turkeys-relations-with-nato-russia-a-foreign-policy-impasse [accessed April 27, 2019].

[212] Republic of Turkey Ministry of Foreign Affairs, "Relations between Turkey and the Russian Federation", Foreign Policy/Regions/European Countries/Russian Federation/Relations between Turkey and the Russian Federation, http://www.mfa.gov.tr/relations-between-turkey-and-the-russian-federation.en.mfa [accessed April 28, 2019]. For further information: Mert Gökırmak, "From Foe to Friend: Turkish-Russian Relations in the 21st Century", 2012, pp. 85-102.

[213] Presidency of the Republic of Turkey, "Our cooperation with Russia in the area of energy is one of the pillars of our economic relations", April 8, 2019, www.tccb.gov.tr/en/news/542/103852/-our-cooperation-with-russia-in-the-area-of-energy-is-one-of-the-pillars-of-our-economic-relations-[accessed April 28, 2019].

[214] Randall Newnham, "Oil, carrots, and sticks: Russia's energy resources as a foreign policy tool", Journal of Eurasian Studies Vol. 2, 2011, pp. 134–143.

In this context, natural gas is the first resource that comes into mind. However, in that case, Russia has as much to lose as Turkey.[215] In general, Moscow utilizes its energy resources, including natural gas, as a way to obtain power and influence in its foreign policy.[216] The dominance of Russian energy companies over Turkey's energy sector is a clear indication of this attitude and it paves the way for Russian ambitions. As such, a brief look into the energy trade volume between Russia and Turkey shows that Russia by far ranks the first among those countries from which Turkey has been importing its energy resources. To be more clear, Russia has been providing at least half of Turkey's total natural gas demand since 2002.[217] Furthermore, Russia comes second among those countries from which Turkey has been importing 20% of its

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[215] Oğuzhan Akyener and Çağrı Şirin, "Russian Chess on Gas Politics: Evaluation of Turkish Stream", Energy Policy Turkey Vol. 1, 2016, pp. 120-122

[216] Martha Brill Olcott, *The Energy Dimension in Russian Global Strategy: Vladimir Putin and The Geopolitics of Oil*, James E. Baker Institute, Baker Institute Energy Forum, Houston 2004, p. 16. See also: Rem Korteweg, *Energy as a tool of foreign policy of authoritarian states, in particular Russia*, European Union, Policy Department for External Relations Directorate General for External Policies of the Union, Belgium 2018, pp. 13-16. For further: Eric Pardo Sauvageot, "Energy Disputes between Russia and Ukraine: A Case Study of Russian DecisionMaking", IPSA Madrid 2012, pp. 4-7; Gabriel Collins, "Russia's Use of the 'Energy Weapon' in Europe", Issue Brief Baker Institute 2017, pp. 1-7 ; Ilaha Zeynalli and Shahana Bilalova, "Russian energy power – an effective tool for its foreign policy?", Topchubashov Center, April 17, 2017, top-center.org/essays/336-russian-energy-power-an-effective-tool-for-its-foreign-policy.html [accessed April 1, 2019].

[217] In this context, one notable example is the Turkish Stream Project which will increase Russian control over Turkey's natural gas market. Retrieved from: Marc Pierini, "Russia's Gas Strategy Gets Help From Turkey", Carnegie Europe, December 03, 2018, carnegieeurope.eu/strategiceurope/77855 [accessed April 1, 2019]. See for informations regarding the Turkey's natural gas import from Russia: Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Dünya ve Türkiye Enerji ve Tabii Kaynaklar Görünümü* (World and Turkey's Energy and Natural Resources View), Strateji Geliştirme Başkanlığı No.15, Ankara 2017, p. 40. (in Turkish).

crude oil to compensate for its supply deficit.[218] In addition, oil import from Russia has also been gradually increasing.[219] In this regard, Turkey is not only a foreign-resource dependent country but also Russian-resource dependent country.

On the other side of the story, Turkey's national energy policy aims to reinforce its position as an energy hub and secure its energy supply by diversifying its energy sources.[220] To this end, the country promotes further cooperation for developing pipeline projects with other countries such as Azerbaijan and Turkmenistan.[221] Besides, it pursues close relations with some African countries like Algeria and Nigeria for the same purpose. Therefore, in case of a potential problem with Russia, Turkey would have other options, although this will definitely come with a high cost. Indeed, Russia can either slow down the supply or increase the gas prices as it did in other countries (e.g. Ukraine, Latvia, Czech Republic, Ukraine, Belarus, Kyrgyzstan,

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[218] Türkiye Petrolleri Anonim Ortaklığı (Turkish Petroleum Joint Stock Company), "Sektöre Dair/Türkiye'de Petrol Sektörü/Ülkeler Bazında Petrol İthalatı (Regarding the Sector/The Petroleum Sector in Turkey/Oil Imports by Countries)", www.tpao.gov.tr/?mod=sektore-dair&contID=39 [accessed April 1, 2019] (in Turkish).

[219] Iran ranked first place with a total share of 27% in 2017. However, after the U.S sanctions towards Iran's petroleum products, Turkey's import from Iran was started to decrease significantly. As of 2019, it approached to the zero and will become zero in the end. In this context, Russia's share within the Turkey's oil import is naturally increasing. See: Türkiye Petrolleri Anonim Ortaklığı (Turkish Petroleum Joint Stock Company), "Sektöre Dair/ Türkiye'de Petrol Sektörü/Ülkeler Bazında Petrol İthalatı (Regarding the Sector/The Petroleum Sector in Turkey/Oil Imports by Countries)", www.tpao.gov.tr/?mod=sektore-dair&contID=39 [accessed April 1, 2019] (in Turkish). See also: Muhsin Tiryakioğlu, "Türkiye kasımda İran'dan petrol alımını durdurdu", Anadolu Ajansı (Anadolu Agency), January 28, 2019, www.aa.com.tr/tr/ekonomi/turkiye-kasimda-irandan-petrol-alimini-durdurdu/1376686 [accessed April 1, 2019] (in Turkish).

[220] The Ministry of Energy and Natural Resources, "Info Bank/Oil and Gas Pipelines and Projects/Transit Pipelines and Projects", www.enerji.gov.tr/en-US/Pages/Transit-Pipelines-and-Projects [accessed April 5, 2019]

[221] Ibid.

Lithuania, Armenia, Moldova, Turkmenistan, Poland, and Germany).[222] Yet, it has spent a vast amount of money for the pipeline projects passing through Turkey which makes Ankara an indispensable partner, not to mention the Russian economic returns from oil and gas exports. Therefore it is possible to suggest that although the Turkish side needs Russia for meeting its energy demands, the Russian side also needs Turkey as a significant partner. As such Russia has to weight the pros and cons carefully in using it energy tool towards Turkey.

In this context, there are certain factors that shape Russian foreign policymakers to formulate their civilian nuclear policy towards Turkey. As a starter, Turkey's influential position in various regions from the Middle East to Central Asia is seen by Moscow as an opportunity to expand its zone of influence.[223] Kremlin has long been in pursuit of far-reaching influence in the Middle East, North Africa, Europe, Transcaucasia, and Central Asia. Turkey's influence in these regions, especially in Central Asia, stems from aspects such as historical ties, religion, strategic geographical location between the Western and Eastern countries, its relatively modern economy and its military capability.[224] All these aspects help Turkey to be influential in these regions, makes the country an ally. As put forward by an expert, Turkey's influence in Afghanistan via religious ties; its high-level of cooperation with Central Asian countries based on common identity, history, and religion; its long-lasting cooperation with Western countries as well as its pro-Western policies; its influence in Transcaucasia because of common history, identity, and religion; its

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[222] Simon Pirani, Jonathan Stern and Katja Yafimava, *The Russo-Ukrainian gas dispute of January 2009: a comprehensive assessment*, Oxford Institute for Energy Studies Working Paper NG27, February 2009, pp. 53-55.

[223] Adam Balcer, "The Future of Turkish-Russian Felations: A Strategic Perspective", Turkish Policy Quarterly Vol. 8, No. 1, 2009, pp. 79-90. See also: Freedman, "Russia and the Middle East Under Putin", 2010, pp. 25-28, 36-37.

[224] Balcer, "The Future of Turkish-Russian Felations: A Strategic Perspective", 2009, pp. 79-90.

close partnership ties with the U.S and NATO, are the reasons why Kremlin attaches great importance to its relations with Turkey.[225]

The second factor is Turkey's NATO membership status and its alliance with Washington. Turkey is regarded as one of the significant NATO allies that had been regularly joining the overseas mission of the organization right from the beginning of its establishment.[226] However, pursuant to the document of Russian National Security, NATO is described as an enemy,[227] and Russian President Federation Vladimir Putin perceives NATO's enlargement policy as an expansion towards Russia.[228] As such, NATO's partnership programs with ex-Soviet countries such as Ukraine, Georgia, Kazakhstan and Moldova, constitute a major concern for the policymakers in Kremlin, as these countries are very close to Russian borders.[229] In this vein, Moscow pursues either militarily aggressive or politically and economically strategic policies to counter-balance the increasing NATO involvement

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[225] Ibid.

[226] Republic of Turkey Ministry of Foreign Affairs, "Turkey's Relations with NATO", Foreign Policy/International Organizations, www.mfa.gov.tr/nato.en.mfa [accessed April 26, 2019].

[227] Chapter I /Clause 15", The Russian Federation's National Security Strategy, Moscow, the Kremlin, No. 683, 31 December 2015. See also: "Under Chapter III", The Ministry of Foreign Affairs of the Russian Federation, "The National Security Concept of the Russian Federation", Approved by Presidential Decree No. 24 of 10 January 2000.

[228] Rajan Menon and Eugene B. Rumer, *Conflict in Ukraine: The Unwinding of the Post–Cold War Order*, Massachusetts Institute of Technology, The MIT Press 2015, p. 72.

[229] Vladimir Putin: "For us, well, it's a direct and immediate threat for our national security… moving this NATO infrastructure towards our borders would be a threat, and the reaction would be extremely negative". Retrieved from: TASS, "Reaction to NATO membership for Georgia and Ukraine to be extremely negative",TASS News Agency Russian Politics & Diplomacy, July 17, 2018, tass.com/politics/1013587 [accessed April 26, 2019].

and the U.S influence.[230] In this general context, Kremlin aims to enhance its dialogue with Ankara in order to pull an indispensable NATO member state for further away from such influence.[231] The recent decrease in Ankara's level of interaction and cooperative relationship with Washington is a perfect and timely opportunity for Moscow to increase its own area of activity. Furthermore, Turkey's NATO membership is seen as another opportunity of gathering intelligence regarding NATO activities and policies.[232]

The third factor shaping Russia's civilian nuclear energy policy is the negative turn in the pro-Western stance of Turkey which had long dominated the foreign policy of this country. In the specific context of Turkey-E.U relations, the tensions are increasing and the rise of far-right parties which oppose Turkey's accession make the situation more problematic.[233] This constitutes one of the main reasons why Russia promotes high-level partnership with Turkey regardless of all historic and recent

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[230] Bernard Gwertzman, "Russia's Offensive in Georgia a Signal to NATO to Stay Away from Its 'Space' (Interview by F. Stephen Larrabee)", Council on Foreign Relations, August 25, 2008, www.cfr.org/interview/russias-offensive-georgia-signal-nato-stay-away-its-space [accessed April 26, 2019]. See also: Alissa de Carbonnel, "Putin says annexation of Crimea partly a response to NATO enlargement", Reuters, April 17, 2014, www.reuters.com/article/us-russia-putin-nato-idUSBREA3G22A20140417 [accessed April 26, 2019]. For further: David Matsaberidze, "Russia vs. EU/US through Georgia and Ukraine", Connections, Vol. 14, No. 2, 2015, pp. 77-86.

[231] Balcer, "The Future of Turkish-Russian Felations: A Strategic Perspective", 2009, pp. 79-90. See also: Eli Lake, "NATO's Real Crisis Is Turkey, Not Trump", Bloomberg, July 11, 2018, www.bloomberg.com/opinion/articles/2018-07-11/nato-s-real-crisis-is-turkey-not-trump [accessed April 26, 2019].

[232] Vladimir Frolov, "Our Man in NATO: Why Putin Lucked Out With Recep Erdogan", The Moscow Times, April 15, 2019, www.themoscowtimes.com/2019/04/15/our-man-in-nato-why-putin-lucked-out-with-recep-erdogan-a65237 [accessed April 26, 2019].

[233] TPQ, "Resetting the Turkey-EU Relationship, Turkish Policy Quarterly, June 16, 2017, turkishpolicy.com/article/860/resetting-the-turkey-eu-relationship [accessed April 25, 2019]. See also: Ibrahim Kalın, "Turkey-EU relations: Is a reset possible?", Daily Sabah, updated September 03, 2017, www.dailysabah.com/columns/ibrahim-kalin/2017/10/03/turkey-eu-relations-is-a-reset-possible [accessed April 25, 2019].

hostilities. The increasing tensions between Turkey and the E.U presents an opportunity for Russia which may now have more options to develop closer ties with Turkey and to counterbalance and even reduce Western influence over a strategic NATO ally.

Last but not least, Turkey's lack of sufficient energy resources and its dependence on other countries presents Russian policymakers yet another good opportunity. Nuclear energy is seen by the Turkish side as a viable alternative to meet the energy needs of an increasingly industrialized and urbanized society. As such, pursuant to Turkey's national energy policy, NPP projects are seen as a way of reducing the country's level of dependency.[234] All these factors motivate Russia to develop closer ties with Turkey. Further information specifically on Turkey's nuclear policy is given in the next part.

3.2. Turkey's Nuclear Energy Policy

As mentioned earlier, Turkey is an import dependent country due to the lack of adequate natural resources. The country's total electricity production was around 295 billion kWh in 2017.[235] The sectoral distribution of the electricity production in Turkey is as follows:[236] 37% from natural gas; 33% from coal; 20% from hydroelectric; 10% from other resources. Considering the primary energy resources,

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[234] Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler* (Nuclear Power Plants and the information regarding to the Nuclear Power Plant which will be constructed in our country), pp. 5-8, 27-32.

[235] Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), "Bilgi Merkezi/Elektrik (Info Bank/Electricity)", T.C. Enerji ve Tabii Kaynaklar Bakanlığı, www.enerji.gov.tr/tr-tr/sayfalar/elektrik [accessed April 1, 2019] (in Turkish).

[236] Ibid.

Turkey was producing 17.9 million barrels of crude oil at the end of 2016, yet consuming 201 million barrels.[237] On the other side, Turkey produced[238] 354 million m^3 natural gas and consumed[239] 55.5 billion m^3 natural gas. The difference between the numbers of consumption and production clearly shows that the country depends on imported energy sources. To be more precise, almost 99.5% of the natural gas and 95% of the oil have been imported from external countries.[240] Turkey is 74% dependent on foreign natural resources in its energy consumption.[241] Only in 2017, the country spent $37 billion on energy import.[242]

Within the general framework, it is obvious that Turkey's national energy strategy revolves basically around the goal of reducing the country's external dependency. The Akkuyu NPP project, the topic of this thesis, therefore needs to be analyzed

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[237] Türkiye Petrolleri Anonim Ortaklığı (Turkish Petroleum Joint Stock Company), "Sektöre Dair/Türkiye'de Petrol Sektörü/Petrol Tüketimi (Regarding the Sector/The Petroleum Sector in Turkey/Oil Consumption)", www.tpao.gov.tr/?mod=sektore-dair&contID=38 [accessed April 1, 2019] (in Turkish).

[238] Türkiye Petrolleri Anonim Ortaklığı (Turkish Petroleum Joint Stock Company), "Sektöre Dair/Türkiye'de Petrol Sektörü/Doğalgaz Üretimi (Regarding the Sector/The Petroleum Sector in Turkey/Natural Gas Production", www.tpao.gov.tr/?mod=sektore-dair&contID=41 [accessed April 1, 2019] (in Turkish).

[239] Türkiye Petrolleri Anonim Ortaklığı (Turkish Petroleum Joint Stock Company), "Sektöre Dair/Türkiye'de Petrol Sektörü/Doğalgaz Tüketimi (Regarding the Sector/The Petroleum Sector in Turkey/Natural Gas Consumption", www.tpao.gov.tr/?mod=sektore-dair&contID=42 [accessed April 1, 2019] (in Turkish).

[240] Ibid.

[241] Türkiye Petrolleri Anonim Ortaklığı (Turkish Petroleum Joint Stock Company), "Sektöre Dair/Türkiye'de Petrol Sektörü/Türkiye'de Petrol ve Doğalgaz (Regarding the Sector/The Petroleum Sector in Turkey/Oil and Gas in Turkey", www.tpao.gov.tr/?mod=sektore-dair&contID=98 [accessed April 1, 2019] (in Turkish).

[242] Ebru Şengül, "Turkey's energy import bill up by 37% in 2017", Anadolu Agency, February 1, 2018, www.aa.com.tr/en/energyterminal/finance/turkeys-energy-import-bill-up-by-37-in-2017/18644 [accessed April 1, 2019]

within the broader perspective of Turkey's national energy strategy. This strategy consists four main provisions: to diversify supply routes and sources for imported oil and natural gas, to increase the ratio of national and renewable energy in the energy mix, to increase the energy efficiency, and to add nuclear energy to the energy mix.[243] As such, nuclear energy, among other sources, is regarded as a must for Turkey's portfolio.[244]

It must however be pointed out that nuclear energy and NPPs such as Akkuyu are not put on the agenda of Turkey recently. This has been an issue in Turkey's energy agenda since the 1950s, especially in line with the establishment of the Atomic Energy Commission in 1956.[245] These efforts have gained momentum after the inauguration of the Atomic Energy Department under the framework of Turkish Electrical Authority (*Türkiye Elektrik Kurumu,* TEK) in 1970.[246] At first, TEK considered three places for the construction of NPPs: Mersin (Akkuyu), Sinop

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[243] Republic of Turkey Ministry of Foreign Affairs, "Turkey's Energy Profile and Strategy", Foreign Policy/Main Issues/Energy Issues, www.mfa.gov.tr/turkeys-energy-strategy.en.mfa [accessed May 10, 2019].

[244] Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler* (Nuclear Power Plants and the information regarding to the Nuclear Power Plant which will be constructed in our country), pp. 5-7.

[245] Akkuyu Nükleer A.Ş. (Akkuyu Nuclear Joint Stock Company), "About the project/Project History", www.akkunpp.com/project-history-2 [accessed April 1, 2019]. See for detailed information regarding the Turkish Nuclear History: Şebnem Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, Department of International Relations Bilkent University, Ankara 2010, pp. 111-133.

[246] Nükleer Akademi, "Türkiye'de Nükleer Enerji/Türkiye'de Nükleerin Tarihi", Nükleer Akademi, nukleerakademi.org/nukleer-enerji/ulkemizde-nukleer-enerji/ [accessed April 5, 2019] (In Turkish). See also: NTV, "Nükleer enerjinin Türkiye'deki tarihçesi", NTV Radyo ve Televizyon Yayıncılığı, November 20, 2009, www.ntv.com.tr/ekonomi/nukleer-enerjinin-turkiyedeki-tarihcesi,LI7qG7zm-0q6yZLV0rHy7g?_ref=infinite [accessed April 5, 2019] (In Turkish). See for detailed information regarding the Turkish Nuclear History: Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, 2010, pp. 111-133.

(Inceburun), and Kırklareli (Igneada).[247] The Akkuyu site was the first one given the license allowing the construction of an NPP.[248] In the 1980s, the Nuclear Non-Proliferation Treaty and a cooperation agreement were signed with IAEA.[249] In 1982, Turkish Atomic Energy Agency (*Türkiye Atom Enerjisi Kurumu,* TAEK) was established.[250] However, after the Chernobyl disaster, the domestic economic and political conditions precluded the efforts towards NPP construction, the projects were postponed and the Atomic Energy Department of the Turkish Electricity Authority was shut down.[251] In 1993, the Akkuyu NPP project once again came to the

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[247] NTV, "Nükleer enerjinin Türkiye'deki tarihçesi", NTV Radyo ve Televizyon Yayıncılığı, November 20, 2009, www.ntv.com.tr/ekonomi/nukleer-enerjinin-turkiyedeki-tarihcesi,LI7qG7zm-0q6yZLV0rHy7g?_ref=infinite [accessed April 5, 2019] (In Turkish).

[248] Akkuyu Nükleer A.Ş. (Akkuyu Nuclear Joint Stock Company), "About the project/Project History", www.akkunpp.com/project-history-2 [accessed April 1, 2019]. See for detailed information regarding the Turkish Nuclear History: Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, 2010, pp. 111-133.

[249] Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, 2010, pp. 111-133.

[250] Ibid., p. 113. See also: Nükleer Akademi, "Türkiye'de Nükleer Enerji/Türkiye'de Nükleerin Tarihi", Nükleer Akademi, nukleerakademi.org/nukleer-enerji/ulkemizde-nukleer-enerji/ [accessed April 5, 2019] (In Turkish).

[251] Nükleer Akademi, "Türkiye'de Nükleer Enerji/Türkiye'de Nükleerin Tarihi", Nükleer Akademi, nukleerakademi.org/nukleer-enerji/ulkemizde-nukleer-enerji/ [accessed April 5, 2019] (In Turkish). See also: NTV, "Nükleer enerjinin Türkiye'deki tarihçesi", NTV Radyo ve Televizyon Yayıncılığı, November 20, 2009, www.ntv.com.tr/ekonomi/nukleer-enerjinin-turkiyedeki-tarihcesi,LI7qG7zm-0q6yZLV0rHy7g?_ref=infinite [accessed April 5, 2019] (In Turkish). For further information regarding the Turkish Nuclear History: Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, 2010, pp. 111-133.

agenda.[252] During the same period, calls were issued for bids, however, due to the internal, mainly financial, political, and institutional problems, they were canceled.

In the 2000s, the attention paid to civilian nuclear development was increased. Nuclear energy program gained pace as it was included in the national energy strategy in 2004.[253] In 2004, the construction of at least three reactors with a total capacity of 5000 MW was announced.[254] In 2006, Sinop was selected as the first place in which a nuclear power plant would be constructed.[255] However, it was not licensed at the time. In 2008, the bids were issued for the already licensed Akkuyu site and Atomstroyexport-Inter Rao-Park Teknik consortium won the bids as the only

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[252] Nükleer Akademi, "Türkiye'de Nükleer Enerji/Türkiye'de Nükleerin Tarihi", Nükleer Akademi, nukleerakademi.org/nukleer-enerji/ulkemizde-nukleer-enerji/ [accessed April 5, 2019] (In Turkish). See also: NTV, "Nükleer enerjinin Türkiye'deki tarihçesi", NTV Radyo ve Televizyon Yayıncılığı, November 20, 2009, www.ntv.com.tr/ekonomi/nukleer-enerjinin-turkiyedeki-tarihcesi,LI7qG7zm-0q6yZLV0rHy7g?_ref=infinite [accessed April 5, 2019] (In Turkish). For further information regarding the Turkish Nuclear History: Şebnem Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, Department of International Relations Bilkent University, Ankara 2010, pp. 111-133.

[253] Şebnem Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, Department of International Relations Bilkent University, Ankara 2010, pp. 126.

[254] Nükleer Akademi, "Türkiye'de Nükleer Enerji/Türkiye'de Nükleerin Tarihi", Nükleer Akademi, nukleerakademi.org/nukleer-enerji/ulkemizde-nukleer-enerji/ [accessed April 5, 2019] (In Turkish). See also: NTV, "Nükleer enerjinin Türkiye'deki tarihçesi", NTV Radyo ve Televizyon Yayıncılığı, November 20, 2009, www.ntv.com.tr/ekonomi/nukleer-enerjinin-turkiyedeki-tarihcesi,LI7qG7zm-0q6yZLV0rHy7g?_ref=infinite [accessed April 5, 2019] (In Turkish). For further information: Şebnem Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, Department of International Relations Bilkent University, Ankara 2010, pp. 126-128.

[255] Şebnem Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, Department of International Relations Bilkent University, Ankara 2010, pp. 129. See also: NTV, "Nükleer enerjinin Türkiye'deki tarihçesi", NTV Radyo ve Televizyon Yayıncılığı, November 20, 2009, www.ntv.com.tr/ekonomi/nukleer-enerjinin-turkiyedeki-tarihcesi,LI7qG7zm-0q6yZLV0rHy7g?_ref=infinite [accessed April 5, 2019] (In Turkish).

bidder.[256] A year later, it was canceled once again. Concrete steps were at last taken in 2010 and the Akkuyu NPP project was officially announced.

As a final note it must be emphasized that Turkey continues to take concrete steps in nuclear energy production as part of its national energy strategy. In addition to the Akkuyu NPP project, in 2013 Turkey and Japan signed a nuclear deal according to which four nuclear reactors with a total capacity of 4480 MW (1120 MW each) will be constructed in Sinop.[257] In these reactors, the ATMEA-1 type of reactors (French-Japan co-design) will be used.[258] It is predicted that, after the completion of the four reactors in 2028, they will yearly generate 34 billion kWh electricity a year (similar to Akkuyu NPP).[259] However, as of 2019, the Ministry of Energy and Natural Resources of Turkey has still been doing the feasibility assessment and due to the incremental costs, there are many uncertainties regarding the Sinop NPP project.[260]

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[256] Nükleer Akademi, "Türkiye'de Nükleer Enerji/Türkiye'de Nükleerin Tarihi", Nükleer Akademi, nukleerakademi.org/nukleer-enerji/ulkemizde-nukleer-enerji/ [accessed April 5, 2019] (In Turkish). See also: NTV, "Nükleer enerjinin Türkiye'deki tarihçesi", NTV Radyo ve Televizyon Yayıncılığı, November 20, 2009, www.ntv.com.tr/ekonomi/nukleer-enerjinin-turkiyedeki-tarihcesi,LI7qG7zm-0q6yZLV0rHy7g?_ref=infinite [accessed April 5, 2019] (In Turkish). For further information regarding the Turkish Nuclear History: Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, 2010, pp. 111-133.

[257] Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Türkiye'nin Nükleer Santral Projeleri: Soru-Cevap* (Turkey's Nuclear Power Plant Projects: Question- Answer), Nükleer Enerji Proje Uygulama Dairesi Yayın Serisi, Ankara 2016, p. 18. (in Turkish).

[258] Ibid.

[259] Ibid., pp. 1-7.

[260]Ilgın Yorulmaz, "Sinop Nükleer Santrali: Mitsubishi 'Çekilmedik' diyor, tereddütler neler?", BBC Türkçe, December 8, 2018, https://www.bbc.com/turkce/haberler-dunya-46486857 [accessed March 30, 2019].

3.3. The Akkuyu Nuclear Power Plant Project

The Akkuyu Project is first realized by the agreement signed on May 12, 2010, between the governments of the Russian Federation and the Republic of Turkey regarding the cooperation in the area of construction and operation of the nuclear power plant at the Akkuyu site in the Republic of Turkey.[261] Following its entry into the force, Akkuyu Nuclear Joint Stock Company (AKKUYU JSC) was registered in Turkey.[262] The AKKUYU JSC is a company branch of ROSATOM that is responsible for the construction and operation of NPPs at the Akkuyu site. This company is not only responsible for the construction of NPPs, but it is also in charge of the operation, maintenance and decommissioning. These all are determined under the provision of the agreement. Furthermore, the project has a unique characteristic called BOO (build-own-operate). In that type of agreement model, a private company, in this case the AKKUYU JSC, builds, owns and operates the nuclear facility and sells the electricity generated via those reactors. In general, governments do not have to agree with private companies at a certain purchase price for a certain period of time. Yet, according to the Electric Purchasing Agreement (*Elektrik Satın alma Antlaşması,* ESA), Turkish Electricity Trade and Contracting Corporation (*Türkiye Elektrik Ticaret ve Taahhüt Anonim Şirketi*, TETAŞ) will purchase half of the total electricity (70% of the first two reactors + 30% of the latter two reactors) generated by the AKKUYU JSC for the price of 12.35 cent/kWh (without value-

[261] WNA, "Nuclear Power in Turkey", World Nuclear Association, www.world-nuclear.org/information-library/country-profiles/countries-t-z/turkey.aspx [accessed May 28, 2019]. See also: NEA, "Country profile: Turkey", Nuclear Energy Agency, www.oecd-nea.org/general/profiles/turkey.html [accessed May 28, 2019]. For further information: Akkuyu Nükleer A.Ş. (Akkuyu Nuclear Joint Stock Company), "About the project/Project History", www.akkunpp.com/project-history-2 [accessed April 1, 2019].

[262] TASS, "АЭС Аккую. Досье (Akkuyu NPP File)", April 2, 2018, tass.ru/info/5088067 [accessed June 1, 2019] (in Russian). See also: Akkuyu Nükleer A.Ş. (Akkuyu Nuclear Joint Stock Company), "About the project/Project History", www.akkunpp.com/project-history-2 [accessed April 1, 2019]. For further information: WNA, "Nuclear Power in Turkey", World Nuclear Association, www.world-nuclear.org/information-library/country-profiles/countries-t-z/turkey.aspx [accessed May 28, 2019]

added-tax) for 15 years starting from the construction of the last reactor.[263] The residual amount will be sold by the AKKUYU JSC in the open energy market.[264] In order to be able to compensate for the capital cost, the AKKUYU JSC holds the right to scale the electricity price up to 15.33 cent/kWh.[265] The period of redemption is calculated as 15 years.[266] Afterward, there is no provision for a fixed price. In the

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[263] Министерство иностранных дел Российской Федерации (The Ministry of Foreign Affairs of the Russian Federation), "Саглашение между правительством Российской Федерации и правительством Турецкой Республики о сотрудничестве в сфере строительства и эксплуатации атомной электростанции на площади Аккую в Турецкой Республике (Agreement between the government of Turkey and the government of the Russian Federation on cooperation in relation to the construction and operation of a nuclear power plant at the Akkuyu site in the Republic of Turkey)", http://www.mid.ru/foreign_policy/international_contracts/2_contract/-/storage-viewer/bilateral/page-7/45077 [accessed June 5, 2019] (in Russian). See also: *Agreement between the government of Turkey and the government of the Russian Federation on cooperation in relation to the construction and operation of a nuclear power plant at the Akkuyu site in the Republic of Turkey*, October 6, 2010, Official Gazzette No. 27721, available at: www.resmigazete.gov.tr/eskiler/2010/10/20101006-6-1.pdf [accessed April 15, 2019].

[264] *Agreement between the government of Turkey and the government of the Russian Federation on cooperation in relation to the construction and operation of a nuclear power plant at the Akkuyu site in the Republic of Turkey*, 2010, Official Gazzette No. 27721.

[265] Министерство иностранных дел Российской Федерации (The Ministry of Foreign Affairs of the Russian Federation), "Саглашение между правительством Российской Федерации и правительством Турецкой Республики о сотрудничестве в сфере строительства и эксплуатации атомной электростанции на площади Аккую в Турецкой Республике (Agreement between the government of Turkey and the government of the Russian Federation on cooperation in relation to the construction and operation of a nuclear power plant at the Akkuyu site in the Republic of Turkey)", http://www.mid.ru/foreign_policy/international_contracts/2_contract/-/storage-viewer/bilateral/page-7/45077 [accessed June 5, 2019] (in Russian).

[266] *Agreement between the government of Turkey and the government of the Russian Federation on cooperation in relation to the construction and operation of a nuclear power plant at the Akkuyu site in the Republic of Turkey*, 2010, Official Gazzette No. 27721.

remaining 45 years, the AKKUYU JSC will be determining the price and it will give 20% of the profit to the Turkish side.[267]

The project consists of four new generations VVER-1200 type reactors (AES-2006) with a total capacity of 4800 MW (1200 MW each).[268] Slightly Enriched Uranium (SEU) will be used as fuel for these reactors.[269] They are commonly known as the third-plus (III+) generation.[270] In these reactors there are two different protection containers with at least 1 meters in diameter.[271] The security and emergency systems are the latest, optimized technologies. These reactors are being constructed in the

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[267] Министерство иностранных дел Российской Федерации (The Ministry of Foreign Affairs of the Russian Federation), "Саглашение между правительством Российской Федерации и правительством Турецкой Республики о сотрудничестве в сфере строительства и эксплуатации атомной электростанции на площади Аккую в Турецкой Республике (Agreement between the government of Turkey and the government of the Russian Federation on cooperation in relation to the construction and operation of a nuclear power plant at the Akkuyu site in the Republic of Turkey)", http://www.mid.ru/foreign_policy/international_contracts/2_contract/-/storage-viewer/bilateral/page-7/45077 [accessed June 5, 2019] (in Russian).

[268] ROSATOM Overseas, "The VVER today: Evolution, Design, Safety", State Atomic Energy Corporation (ROSATOM),www.rosatom.ru/upload/iblock/0be/0be1220af25741375138ecd1afb18743.pdf [accessed May 30, 2019]. See also: Akkuyu Nükleer A.Ş., "About the project/NPP/General Information About Akkuyu NPP", Akkuyu Nuclear Joint Stock Company, www.akkunpp.com/npp-2 [accessed May 30, 2019]. For further information: TASS, "Akkuyu Nuclear Power Plant (AES 'Akkuyu')", TASS File (Dosye-TASS), April 2, 2018, tass.ru/info/5088067 [accessed June 1, 2019] (in Russian).

[269] SEU level is accepted as the enrichment level of 0.85%. SEU is very advantageous as it causes less nuclear waste and decreases the amount of uranium used for fuel almost by half. Therefore, it is cost-efficient type of enrichment level. Retrieved from: Carla Notari and Adolfo Marajofsky, "Slightly Enriched Uranium Fuel for a PHWR", Centra Atomico Constituyentes, Comision Nacional de Energia Atomica, Buenos Aires 1997.

[270] Goldberg and Rosner, *Nuclear Reactors: Generation to* Generation, 2011, pp. 3-14. See also: Njaa, *Russian Nuclear Power 2018*, 2018, pp. 1-8. For further information: TASS, "Akkuyu Nuclear Power Plant (AES 'Akkuyu')", TASS File (Dosye-TASS), April 2, 2018, tass.ru/info/5088067 [accessed June 1, 2019] (in Russian).

[271] ROSATOM Overseas, "The VVER today: Evolution, Design, Safety", State Atomic Energy Corporation (ROSATOM),www.rosatom.ru/upload/iblock/0be/0be1220af25741375138ecd1afb18743.pdf [accessed May 30, 2019].

Turkish city of Mersin. According to the investigations and research conducted in the area by different national and foreigner institutions, the security preconditions for the region have been approved.[272] With regard to the Nuclear Safety Agreement, the Turkish side is responsible for any kind of nuclear damage since the location has been licensed by the host country.[273] After completion, these reactors will generate 35 billion kWh yearly.[274] In 2017, Turkey's total electricity generation was 295 billion kWh and according to official predictions, the demand will be around 450 billion kWh in 2023.[275] If those reactors were in operation today, they would be

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[272] Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Türkiye'nin Nükleer Santral Projeleri: Soru-Cevap* (Turkey's Nuclear Power Plant Projects: Question-Answer), 2016, pp. 12-14.

[273] Ibid., p. 9.

[274] IBP, *Russia: Nuclear Industry Business Opportunities Handbook (Volume 1 Strategic Information, Developments, Contacts)*, International Business Publications, Washington DC 2009, p. 43. See also: ROSATOM, "Construction of the Akkuyu NPP begins in Turkey under a limited construction licence", Press Service of Akkuyu Nuclear JSC, www.rosatom.ru/en/press-centre/news/construction-of-the-akkuyu-npp-begins-in-turkey-under-a-limited-construction-licence/ [accessed May 30, 2019]. For further information: Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Türkiye'nin Nükleer Santral Projeleri: Soru-Cevap* (Turkey's Nuclear Power Plant Projects: Question-Answer), 2016, p. 1.

[275] The predictions are retrieved from: Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Türkiye'nin Nükleer Santral Projeleri: Soru-Cevap* (Turkey's Nuclear Power Plant Projects: Question-Answer), 2016, p. 5. However, there are different future projections made by the same governmental institution. According to the 'Demand Projection Report' published in 2017 by the Turkey's Ministry of Energy and Natural Resources, Turkey's gross electricity demand will be between 360 - 400 billion kWh. Thus, if all the nuclear reactors would be operational in 2023, they will be providing the 8-9% of the country's total electricity (only two reactors are scheduled to be finished in 2023). Demand Projection Report is accessible via: Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), "Türkiye Elektrik Enerjisi Talep Projeksiyonu Raporu (Turkey Electricity Demand Projections Report)", www.enerji.gov.tr/File/?path=ROOT%2F1%2FDocuments%2FE%C4%B0GM%20Ana%20Rapor%2FT%C3%BCrkiye%20Elektrik%20Enerjisi%20Talep%20Projeksiyonu%20Raporu.pdf [accessed June 5, 2019] (in Turkish).

supplying 10% of Turkey's total energy demand.[276] In 2023, they will be providing 7% of the country's total electricity.[277] The first reactor will be put into operation in 2022 and all four reactors are scheduled to be completed by 2025.[278]

[276] It is calculated by ratio and proportion of 295 billion kWh (energy demand in 2017) and 35 billion kWh (yearly electricity generation of Akkuyu NPP).

[277] It is calculated by ratio and proportion of 450 billion kWh (estimated energy demand) and 35 billion kWh (yearly electricity generation of Akkuyu NPP).

[278] Hüseyin Erdoğan, "The first reactor of the Akkuyu nuclear power plant will be commissioned no later than 2022 (Pervyy reaktor AES «Akkuyu» budet vveden v ekspluatatsiyu ne pozdneye 2022 goda)", Anadolu Agency (Agentstva Anadolu), November 19, 2015, (in Russian). See also: Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Türkiye'nin Nükleer Santral Projeleri: Soru-Cevap* (Turkey's Nuclear Power Plant Projects: Question- Answer), Nükleer Enerji Proje Uygulama Dairesi Yayın Serisi, Ankara 2016, p. 7. (in Turkish).

Figure 1. The Profile of the Akkuyu Nuclear Power Plant (NPP)[279]

Location	Mersin
Reactor Type	VVER 1200 (AES 2006)
Generation of the Reactors	III+ Generation
Total Capacity of the Reactors (MWe)	4800
Total Electricity Generation (kWh)	35 billion
Lifespan of the Reactors	60 years
The Estimated Dates for the Commission of the Reactors	1. Unit: 2022 2. Unit: 2023 3. Unit: 2024 4. Unit: 2025
The Owner of the Reactors	The Russian State Atomic Energy Corporation (ROSATOM)
The Financier of the Reactors	The Russian State Atomic Energy Corporation (ROSATOM)
The Fixed Price guaranteed for 50% of the Generated Electricity (15 years)	12.35 Cent/kWh (Excluding VAT), Price Cap: 15.33 Sent/ kWh
Total Cost of the NPP	$20 billion
The Period of Redemption	15 years
Contract of Ownership Model	Build-Own-Operate (BOO)

[279] The informations provided here is retrieved from: Министерство иностранных дел Российской Федерации (The Ministry of Foreign Affairs of the Russian Federation), "Саглашение между правительством Российской Федерации и правительством Турецкой Республики о сотрудничестве в сфере строительства и эксплуатации атомной электростанции на площади Аккую в Турецкой Республике (Agreement between the government of Turkey and the government of the Russian Federation on cooperation in relation to the construction and operation of a nuclear power plant at the Akkuyu site in the Republic of Turkey)", http://www.mid.ru/foreign_policy/international_contracts/2_contract/-/storage-viewer/bilateral/page-7/45077 [accessed June 5, 2019] (in Russian). And also: Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Türkiye'nin Nükleer Santral Projeleri: Soru-Cevap* (Turkey's Nuclear Power Plant Projects: Question-Answer), 2016.

There are four fundemental reasons underlying Turkey's decision on the Akkuyu NPP project. At the outset, it is believed that the Akkuyu NPP will decrease the country's dependence on foreign energy resources.[280] Turkey supports this argument by comparing the cost of importing natural gas with the electricity produced by the NPPs. On a yearly basis, the cost of importing 8 billion m^3 of natural gas to produce 35 billion kWh is around $3.6 billion, which Turkey expects to save.[281] Since all the costs are calculated to be $20 billion, in six years the investment costs would be covered only from the money saved from natural gas imports thanks to the NPPs. At some point, it is true that instead of importing that much amount of natural gas, the NPPs will meet the energy needs of Turkey.[282] It has been argued that, as a result of the decrease in the foreign resource dependency, Turkey could have achieved stability in electricity prices, so as the energy supply security. According to former Turkish Minister of Energy, Hilmi Güler, "Nuclear energy is not a choice but a necessity in order to meet the country's energy shortage".[283] He also said that "this is not only an energy program for us, not a matter of energy, it is a matter of prestige, a matter of passing a threshold in terms of technology…".[284] In addition, a former advisor to TAEK Chairman, Gül Göktepe suggested that "We favor the use of clean

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[280] Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Türkiye'nin Nükleer Santral Projeleri: Soru-Cevap* (Turkey's Nuclear Power Plant Projects: Question-Answer), 2016, p. 2.

[281] Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler* (Nuclear Power Plants and the information regarding to the Nuclear Power Plant which will be constructed in our country), p. 44.

[282] This issue is examined in detail in the next part.

[283] Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, 2010, p. 170.

[284] Ibid., p. 184.

energies like wind. However, since they are not enough by themselves, we are trying to say that there is a need for a clean source like nuclear energy".[285]

Secondly, as pointed out in official documents, nuclear energy will increase employment in Turkey. The Akkuyu project is expected to create jobs for 37.000 people (20.000 in construction, 7.000 in operation, and 10.000 in domestic industries).[286] In addition the project will provide experience that can also be beneficial in the construction of national NPPs. Furthermore there are some specialists (engineers and physicists) who have been sent to Russia to get an education so that they will be able to work as qualified personnel in these NPPs.[287] These engineers will later be working and constructing Turkey's nationally designed and locally produced nuclear reactors. Therefore, it is believed that Akkuyu NPP is an imporant step forward to develop national nuclear power plants.

The third important factor that effects Turkey's decisions is the environmental security that nuclear energy can bring in.[288] It is true that, nuclear energy is carbon-

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[285] Ibid., p. 173.

[286] Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Türkiye'nin Nükleer Santral Projeleri: Soru-Cevap* (Turkey's Nuclear Power Plant Projects: Question-Answer), 2016, pp. 2-4.

[287] All specialists will work at the Akkuyu NPP. The education takes 7 years: one year to study Russian, four years for the field-specific training related to the nuclear power plants and on-the-job training at one of the enterprises of the Russian nuclear industry. Only 600 people in total will get this education. The informations are retrieved from: Akkuyu Nükleer A.Ş., "About the project/Education", Akkuyu Nuclear Joint Stock Company, www.akkunpp.com/education-2 [accessed June 6, 2019].

[288] Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Türkiye'nin Nükleer Santral Projeleri: Soru-Cevap* (Turkey's Nuclear Power Plant Projects: Question- Answer), 2016, p. 2. For further and broad information regarding the positive perception of nuclear energy see: Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, 2010, pp. 168-195.

free and causes less greenhouse gas emissions.[289] Considering the negative consequences of carbon emissions and green house effects in a developing country such as Turkey that consumes vast amounts of energy, nuclear energy serves a way to both meet the energy demand while saving the planet.[290] Thus, it is regarded as more eco-friendly. Taking the huge share of coal in Turkey's energy production into considereration,[291] nuclear energy becomes even more crucial.

Lastly, the economic returns from the Akkuyu NPP are considered substaintial by the Turkish officials. As it has been designated under the terms of the agreements, Turkey will get 20% of the profit that the Akkuyu NPP will be generating after the fixed term of 15 years. Though the profit that Turkey will be gaining is hard to calculate because of the unknown electricity prices after 15 years, hypotetically if the prices would be higher than 10 cent/kWh, than Turkey would be earning at least $700 million yearly.[292] That is given as one of the most important reasons why Turkey accepted the agreement in the beginning.

In addition to the official arguments regarding the Akkuyu project, there are several public debates on the pros and cons of this issue. Pro-Akkuyu side of the argument supports the construction of the NPP because of the same positive benefits that have

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[289] NEI, "Climate", Nuclear Energy Institute, www.nei.org/advantages/climate, [accessed June 6, 2019].

[290] IAEA, "Nuclear Power and Climate Change", International Atomic Energy Agency, www.iaea.org/topics/nuclear-power-and-climate-change [accessed June 12, 2019]. See also: EIA, "Nuclear Power and the Environment", U.S Energy Information Agency, www.eia.gov/energyexplained/index.php?page=nuclear_environment [accessed June 12, 2019].

[291] The Ministry of Energy and Natural Resources, "Info Bank/Energy/Coal", www.enerji.gov.tr/en-US/Pages/Coal [accessed June 12, 2019].

[292] The calculation is made as follows: 35.000.000.000 x 0,10 = 3.500.000.000. The 20% of the $3.5 billion is $700 million.

been put forward in the official documents. As suggested by an expert, arguments that have been put forward by the supporters of the NPP are as follows:

> necessity to decrease the dependency and to meet the energy demand; urgent for development and welfare; superior than the alternatives; indicator of a status; a tool to increase power; highly rational; approved by the experts; first step to have nuclear power.[293]

For those who oppose the project, the main argument is that it is a threat[294]:

> risk of radiation and proliferation towards environment; waste is a big, unsolved problem; Turkey's conditions are not favorable that boosts the risk; Chernobly is the example; nuclear technology is a step towards weapons; NPPs contribution to cost is very low; there are better alternative energy sources; decisionmakers are irrational; lack of expertise work; shortage has been exaggrated; decisions are under the of nuclear lobby.[295]

For this side of the argument, the claims made by International Physicians for the Prevention of Nuclear War (IPPNW) under the "International Nuclear Power Fact File Poster Campaign" can be given as an example.[296] Furthermore, scientists published a declaration regarding their position against NPPs which can be provided as source how the people who oppose the NPPs support their arguments.[297]

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[293] Udum, *Understanding the Nuclear Energy Debate in Turkey: Internal and External Contexts (Ph.D. Dissertation)*, 2010, pp. 168-195.

[294] Ibid., p. 166.

[295] Ibid., pp. 195-220.

[296] IPPNW, "International Nuclear Power Fact File Poster Campaign", International Physicians for the Prevention of Nuclear War, www.facts-on-nuclear-energy.info/facts_on_nuclear_energ [accessed June 12, 2019].

[297] "Nükleer Santral Karşıtı Bilim İnsanları Bildirisi (Declaration of Scientists Against Nuclear Power Plants)", *Elektrik Mühendisliği Dergisi* (Electrical Engineers Journal), Vol. 430, 2007, pp. 105-107. (In Turkish). Accessable via: www.emo.org.tr/ekler/8ec7fefbec9864f_ek.pdf?dergi=457

In sum, despite the duality among the public, Turkey is satified with the Akkuyu NPP project and the terms of the nuclear cooperation agreement. On the other side, the Akkuyu NPP will definitely have an impact on the relations between Russia and Turkey by being a long-term and high budgetary project. It has a clear potential of shaping the dynamics of foreign policy of both countries as it has boosted cooperation between them. However, because of the agreement terms that realized the Akkuyu NPP, the benefits that Russia will get from the nuclear reactors clearly exceeds Turkey's gains. In the next part how nuclear energy is used by Russia as a tool in its relations with Turkey is explained both in general terms and with a specific reference to the Akkuyu NPP.

3.4. The Impact of Nuclear Energy as a Foreign Policy Tool of Russia on Turkey

As a starter, buying nuclear reactors from an external country will without a doubt make the importer country dependent on the exporter one, especially if the importer country is a non-nuclear state. The main reason is that the importer country does not have the know-how, technology, adequate goods and services, and information, to either construct or operate an NPP. Therefore, it is dependent by all means to the exporter country. On the one hand, NPP importation resembles the importation of any natural resource from an external country, on the other hand, the civilian nuclear deal requires long-term cooperation and brings longer dependency. To put it differently, it would not easily be possible to find another country neither to take over the project from the beginning nor provide nuclear fuel.

In the case of a BOO agreement, where the importer country does not possess the right to operate, the dependency peaks. There are three interconnected results of not having the right to operate: less sovereignty and authority over the reactor, less control over the electricity prices, and more dependency to the exporter country. In

this context, the NPP importing country does not actually import the NPP, but the electricity generated via those reactors. The private company owns the reactors, operates the facility, sets the prices, provides the nuclear goods and services, assumes the maintenance and decommissions, and provides or buys the nuclear fuel.[298] In other words, it all depends on the decisions of the company. The importer country purchases the electricity and gets its share from the profit. Countries generally prefer nuclear energy to widen their range of energy supply sources. In this way, they try to reduce their dependency on the natural resources of external countries. Yet, the BOO model precludes those efforts since it does not bring additional national sources to the current ones, instead, the dependency on foreign-resources increases.

Within the specific case of Russia as an exporter of NPPs, it is clear that the country considers the peaceful utilization of nuclear energy as a foreign policy tool through which it can increase its influence on many countries.[299] As, it has been expressed by several scholars, Russia aims to obtain a geopolitical influence over the countries where ROSATOM has been pursuing its projects.[300] According to a Eurasian analyst

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[298] Akkuyu Nükleer A.Ş. (Akkuyu Nuclear Joint Stock Company), "About the project/ Akkuyu Nuclear JSC", www.akkunpp.com/akkuyu-nuclear-jsc [accessed September 25, 2018]. See also: The State Atomic Energy Corporation (ROSATOM), "JSC Akkuyu Nuclear designated strategic investor in Turkey", 2 Apr 2018, www.rosatom.ru/en/press-centre/news/ jsc-akkuyu-nuclear-designated-strategic-investor-in-turkey/ [accessed September 25, 2018].

[299] Андрей Михайлович Бобыло, "Мирный атом как инструмент 'мягкой силы' России за рубежом: миф или реальность? (The peaceful atom as a tool of 'soft power' of Russia abroad: myth or reality?)", Ойкумена, Регионоведческие исследования (Regional researches), Vol. 3, No. 46, 2018, pp. 30-33. See also: Rauf Mammadov and Theodore Karasik, "Rosatom as a tactic in Russia's foreign policy" International Policy Digest, 19 Jul 2018, intpolicydigest.org/2018/07/19/rosatom-as-a-tactic-in-russia-s-foreign-policy/ [accessed October 25, 2018].

[300] Ian Armstrong, Russia is creating a global nuclear power empire, Global Risk Insights, 29 October 2015, globalriskinsights.com/2015/10/russia-is-creating-a-global-nuclear-power-empire/ [accessed April 5, 2018]. See also: Lough, *Russia's energy diplomacy*, 2011, pp. 5, 7, 13. For further information on this topic see: Stronski and Sokolsky, *The return of global Russia: an analytical framework,* 2007, pp. 15-21, 25-26 ; Marco Giuli, "Russia's nuclear energy diplomacy in the Middle East: why the EU should take notice", European Policy Centre, Policy Brief, 21 Feb. 2017.

for example, ROSATOM's work "enables Russia to add another energy-related means of extending its long-term political influence throughout the world".[301] Likewise, as an analyst from Energocapital said, "the promotion of ROSATOM in the international arena helps to perpetuate the image of Russian business abroad".[302]

Certain statements made by top level Russian officials clearly confirm such comments made by experts. For example, a former Russian chief engineer on nuclear-powered submarines and senior inspector for the Department of Defense's Nuclear and Radiation Safety Inspection Department claimed that, "What Russia is doing today, all these ambitious plans, is of course linked to politics and its desire to make countries dependent on Russia, which is something Putin is always reaching for".[303] This grand ambition behind the state-owned company, was put forward by the Director General of ROSATOM, Sergei Kirienko as follows: "We want to make profits out of nuclear energy. We want to power the world".[304] To underline the company's role in foreign policy, it should be mentioned that ROSATOM has become the co-execute of the "Foreign Policy Activity" which is a state program

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[301] Hannah Thoburn, "Russia building nuclear reactors - and influence - around the globe", Reuters, May 5, 2015, www.reuters.com/article/thoburn-rosatom/column-russia-building-nuclear-reactors-and-influence-around-the-globe-idUSL1N0XW1U320150505 [accessed June 12, 2019].

[302] Akkuyu Nükleer A.Ş., "Press Service/Expert Opinion", Akkuyu Nuclear Joint Stock Company, www.akkunpp.com/expert-opinion-2 [accessed June 13, 2019].

[303] Alissa de Carbonnel, "Russian nuclear ambition powers building at home and abroad", Reuters, July 22, 2013, www.reuters.com/article/russia-nuclear-rosatom-idUSL5N0F90YK20130722 [accessed June 13, 2019].

[304] Ibid.

implemented by the Russian Ministry of Foreign Affairs.[305] Another related issue is that the Russian side approaches the BOO model as a way to boost the NPP-imported country's dependence on itself ergo to further increase its influence. As it has been underlined by an Eurasian analyst on the BOO model issue, "Moscow holds the countries hostage to Russian desires and demands".[306] It other words, through this contract model, Russia aims to obtain a leverage that can be used to increase its global influence.[307] This shows us the influence of ROSATOM in the foreign policy decision-making process.

This general attitude on the part of Russia regarding NPPs can also be observed within the specific case of the Akkuyu project. As the Director General of ROSATOM, Sergey Kirienko described, the Akkuyu NPP's BOO model provides a unique contract ownership by which ROSATOM will own an NPP in another

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[305] The Ministry of Foreign Affairs of the Russian Federation implements the state program "Foreign Policy Activity" which is approved by the government of the Russian Federation in 2014 (hereinafter referred to as the State Program). The state program is a strategic planning document in the sphere of state foreign policy activity, containing a set of planned activities, interconnected by tasks, implementation dates, performers and resources, and public policy instruments ensuring the achievement of priorities and goals. The main goal of the State Program is to promote the comprehensive and effective provision of the interests of the Russian Federation in the international arena, the creation of favorable external conditions for the long-term development of the country. Retrieved from: Министерство иностранных дел Российской Федерации (The Ministry of Foreign Affairs of the Russian Federation), "О государственной программе Российской Федерации «Внешнеполитическая деятельность» (On the state program of the Russian Federation 'Foreign Policy Activities')", http://www.mid.ru/web/guest/activity/state_programs/-/asset_publisher/0v2mp2BUeZnQ/content/id/3643053 [accessed June 13, 2019] (in Russian).

[306] Hannah Thoburn, "Russia building nuclear reactors - and influence - around the globe", Reuters, May 5, 2015, www.reuters.com/article/thoburn-rosatom/column-russia-building-nuclear-reactors-and-influence-around-the-globe-idUSL1N0XW1U320150505 [accessed June 12, 2019].

[307] Behnam Taebi and Maximilian Mayer, "The Russian Nuclear Energy Proposal: An Offer You Can't Refuse", The Huffington Post, June 05, 2016, www.huffpost.com/entry/the-russian-nuclear-energ_b_7519564 [accessed June 14, 2019].

country.[308] He also noted that as a result of adopting this unique model, Russia will be present in Turkey for a 100 years. When the construction period as well as operation and fuel supply periods (up to 60 years) are considered, the significance and scale of the contract become more clear.[309] In short, the BOO model of the Akkuyu project clearly increases the Russian influence on Turkey as well as Moscow's dominance in the bilateral relations between these countries.

As the Russian Foreign Minister Sergey Lavrov mentioned, Moscow considers the Akkuyu NPP as a unique project to which both the Ministry of Foreign Affairs and the President of Russia give a significant amount of attention.[310] The Russian President, Vladimir Putin, describes the Akkuyu project as a vivid symbol of the ongoing development of the multifaceted Russian-Turkish partnership and a key to friendship between the two nations.[311] In most of the bilateral meetings between Russia and Turkey, the project has been included in the agenda and its role in

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[308] Президент России (President of Russia), "Рабочая встреча с генеральным директором Государственной корпорации по атомной энергии «Росатом» Сергеем Кириенко (Working meeting with Director General of Rosatom State Nuclear Energy Corporation Sergey Kirienko)", Официальные сетевые ресурсы Президента России (Official Internet Resources of the President of Russia), January 11, 2011, kremlin.ru/events/president/news/10043 [accessed June 13, 2019] (in Russian).

[309] Ibid.

[310] The Ministry of Foreign Affairs of the Russian Federation, "Speech by the Russian Foreign Minister Sergey Lavrov within the framework of the government hour in the Council of Federation of the Federal Assembly of the Russian Federation, Moscow", December 18, 2013, available at: www.mid.ru/en/web/guest/foreign_policy/news/-/asset_publisher/cKNonkJE02Bw/content/id/83458 [accessed June 13, 2019]

[311] Президент России (President of Russia), "Церемония завершения строительства морского участка газопровода «Турецкий поток» (The ceremony of completion of the construction of the offshore section of the Turkish Stream gas pipeline)", Официальные сетевые ресурсы Президента России (Official Internet Resources of the President of Russia), November 19, 2018, kremlin.ru/events/president/news/59152 [accessed June 13, 2019] (in Russian).

bilateral cooperation has always been emphasized.[312] Furthermore, the Akkuyu NPP is seen crucial in reaching the trade turnover goals set by the governments of both countries.[313] When the significance of the Akkuyu project for Russia was asked to Alexei Erkhov, Russian Ambassador to Turkey, he too focused on its function in developing bilateral cooperation between the two sides.[314]

In general it is possible to suggest that the Akkuyu project is seen as a strategic and very valuable investment on the part of Russia through which it will be exempt from several duties and receive important privileges. This has been clearly indicated by both Yury Ushakov, aide to the President of the Russian Federation in charge of

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[312] Президент России (President of Russia), "Пресс-конференция по итогам российско-турецких переговоров (Press conference following Russian-Turkish talks)", Официальные сетевые ресурсы Президента России (Official Internet Resources of the President of Russia), April 8, 2019, kremlin.ru/events/president/news/60247 [accessed June 13, 2019] (in Russian). See also: President of Russia, "News conference following Russian-Turkish talks", Official Internet Resources of the President of Russia, January 23, 2019, http://en.kremlin.ru/events/president/news/59718, [accessed June 13, 2019]. For further examples: President of Russia, "High-Level Russian-Turkish Cooperation Council meeting", Official Internet Resources of the President of Russia, April 3, 2018, kremlin.ru/events/president/news/57191 [accessed June 13, 2019] ; Президент России (President of Russia), "Российско-турецкие переговоры (Russian-Turkish talks)", Официальные сетевые ресурсы Президента России (Official Internet Resources of the President of Russia), September 28, 2017, kremlin.ru/events/president/news/55729 [accessed June 13, 2019] (in Russian); Президент России (President of Russia), Заявления для прессы по итогам российско-турецких переговоров (Press statements following Russia-Turkey talks), Официальные сетевые ресурсы Президента России (Official Internet Resources of the President of Russia), November 13, 2017, http://kremlin.ru/events/president/news/56066 [accessed June 13, 2019] (in Russian).

[313] The Ministry of Foreign Affairs of the Russian Federation, "Statement and Answers by Russian Foreign Minister Sergey Lavrov to Questions from Mass Media at a Joint Press Conference with Turkish Foreign Minister Ahmet Davutoglu Following the Second Meeting of Turkish-Russian Joint Strategic Planning Group, Moscow", January 25, 2012, www.mid.ru/en/web/guest/maps/tr/-/asset_publisher/Fn23Klb76LY2/content/id/173506 [accessed June 13, 2019].

[314] Ali Ünal's interview with Aleksey Yerhov, "Russian Ambassador to Ankara Aleksey Yerhov: Turkey-Russia bilateral relations based on win-win principle", Daily Sabah, April 15, 2018, www.dailysabah.com/diplomacy/2018/04/16/russian-ambassador-to-ankara-aleksey-yerhov-turkey-russia-bilateral-relations-based-on-win-win-principle [accessed June 13, 2019].

foreign policy, and Russian Foreign Minister Sergey Lavrov.[315] On some occasions, the Russian officials express their gratitude for "Turkish efforts" to make the project real and profitable.[316] As a final note, however, it must be pointed out that the Russian side does not highlight the benefits Russia will get from the Akkuyu project, which will far exceed the benefits for Turkey. This can be seen as a diplomatic maneuver on the part of the Russian authorities. As will be elaborated in the Conclusion of this thesis, the Akkuyu project puts Turkey in a much less advantageous position as compared to Russia.

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[315] Ольга Янковская (Olga Yankovskaya), "Лавров: Турция присвоит АЭС "Аккую" статус стратегического инвестпроекта (Lavrov: Turkey will give Akkuyu NPP the status of a strategic investment project)", Life.Ru, December 1, 2016, life.ru/t/%D0%BD%D0%BE%D0%B2%D0%BE%D1%81%D1%82%D0%B8/939893/lavrov_turtsiia_prisvoit_aes_akkuiu_status_stratieghichieskogho_inviestproiekta, [accessed June 13, 2019]. See also: TASS, "Putin and Erdogan launch construction of Akkuyu Nuclear Power Plant in Turkey", Russian News Agency, April 3, 2018, tass.com/economy/997516 [accessed June 13, 2019]. For further information: The Ministry of Foreign Affairs of the Russian Federation, "Comment by the Information and Press Department on Foreign Minister Sergey Lavrov's participation in the fifth meeting of the Russia-Turkey Joint Strategic Planning Group", November 30, 2016, http://www.mid.ru/en/web/guest/kommentarii_predstavitelya/-/asset_publisher/MCZ7HQuMdqBY/content/id/2539393 [accessed June 13, 2019] ; The Ministry of Foreign Affairs of the Russian Federation, "Foreign Minister Sergey Lavrov's remarks and answers to media questions during a joint news conference with Foreign Minister of Turkey Mevlüt Çavuşoğlu following the fifth meeting of the Russian-Turkish Joint Strategic Planning Group, Turkey", December 1, 2016, www.mid.ru/en/web/guest/meropriyatiya_s_uchastiem_ministra/-/asset_publisher/xK1BhB2bUjd3/content/id/2541628 accessed June 13, 2019].

[316] TASS, "Putin and Erdogan launch construction of Akkuyu Nuclear Power Plant in Turkey", Russian News Agency, April 3, 2018, tass.com/economy/997516 [accessed June 13, 2019].

CHAPTER 4

CONCLUSION

This thesis analyzed the dynamics of Russian foreign policy between 2000-2019 by specifically focusing on the civilian aspect of nuclear energy and how it shapes Russia's relations with Turkey. It aimed to clarify the role and the importance of nuclear energy as a foreign policy tool in the exportation of nuclear power plants (NPPs). To this end, this study aimed to find an answer to the following research question: To what extent does the exportation of NPPs influence Russian foreign policy dynamics in Turkey? It is concluded that the Akkuyu NPP will significantly increase Russia's dominance over Turkey by being the dominant power in the energy sector of this country. It is further concluded that as a result of such dominance Turkey will become much less sovereign in its foreign policy options, especially in terms of meeting its energy needs.

After the Introduction part, in the second chapter, first, the historical background information regarding the image of Russia as a nuclear power is explained. As it is described in this chapter, nuclear power can be derived from two different aspects: military and civilian. The Russian Federation possesses both aspects of nuclear energy. When we analyzed the first years of the emergence of nuclear technology, we see that the civilian dimension of this technology had been overlooked due to the conditions of the Cold War years. The Soviets focused on the nuclear power status of the country back then, which had been derived from the possession of nuclear weapons. Indeed, the Soviet Union's nuclear power status had been primarily recognized because of its nuclear weapon capabilities. However, after the collapse of the USSR until Putin's era, Russia showed little interest in nuclear development both

in civilian and military terms, this time mostly due to the specific conditions of the post-Soviet transition in which Russia wanted to become part of the global community as a new state.

During Putin's era, however, the importance of the civilian dimension of nuclear energy has become much more apparent. On the one side, because of several nuclear arms reduction treaties and the low possibility of nuclear war among the nuclear weapon states, Moscow started to approach nuclear weapons only as a safeguarding matter against the potential threats of conventional war and nuclear aggression. On the other side, since there was no restriction on the civilian use of nuclear energy, the country started to promote electricity generation for domestic purposes and the exportation of electricity. The country also started to export nuclear goods and services including NPP materials and technology in a civilian context. The Energy Strategy document published by the Ministry of Energy of the Russian Federation in 2010 shows us the nuclear energy's importance for Russian energy policy. Russia in the era of Putin realized the fact that nuclear power status or its great power status does not necessarily depend on the number of nuclear weapons anymore, rather the civilian dimension of nuclear power as an energy resource could now be used as a foreign policy and enforcement tool. To this end, ROSATOM was established through privatization of the Federal Atomic Energy Agency. After its establishment, NPP construction has gained a significant impetus and the nuclear industry has become pivotal for Russian domestic and foreign policy. Since then, Moscow has been pursuing civilian nuclear policy in Asia, South and North America, Europe, Middle East and North Africa. In short, through exporting NPPs and using ROSATOM's overseas influence Russia aims both to consolidate its position as a center of influence, and to contain the influence of U.S and NATO.

Among all these countries where Russia pursues NPP projects, Turkey constitutes a unique example due to four characteristics: first it is a developing country which has

limited amounts of energy resources that makes it vulnerable target; second it had a strategic geopolitical role in certain regions such as the Middle East, Central Asia, and South Caucasus, where Russia aims to increase its economic and political power; third it is a NATO member and this status encourage Russia to obtain a NPP in the soil of a country offering an opportunity to contain Western influence in such a strategic country; fourth Turkey agreed to the BOO type of NPP, a decision that increases dependency of the country on Russia.

The third chapter of this study examined the power and influence obtained by Russia as a consequence of its exportation of nuclear power plants to Turkey. When we look at the foreign policy dynamics between the two countries, we see that Moscow has long searched for tools by which it can both shape and dominate bilateral relations. Energy resources are seen as an opportunity to obtain such a tool. The dominance of Russian energy companies over Turkey's energy sector is a clear indication of this attitude. However, Moscow needed a resource that it has less to lose compared to Turkey. At this part, the Akkuyu NPP project appears as a perfect solution.

As it was explained in this chapter, Turkey's national energy strategy fundamentally aims to reduce its external resource dependency. This strategy consists of four main provisions: to diversify supply routes and sources for imported oil and natural gas, to increase the ratio of national and renewable energy in the energy mix, to increase the energy efficiency, and to add nuclear energy to the energy mix. As such, nuclear energy, among other sources, is regarded as a must for Turkey's portfolio. Even though the efforts have been made since the 1950s, Turkey's first NPP at the Akkuyu site was finally realized in 2010. Turkey believes that the Akkuyu NPP will decrease its energy dependency on Russia. It supports this argument by comparing the cost of importing natural gas with the electricity produced by NPPs. Furthermore, Turkey believes that nuclear energy will bring employment, energy supply security, stability in electricity prices and environmental security.

However, as is explained in this chapter, Russia wants to acquire a foreign policy tool through ROSATOM that will increase its influence over Turkey. Even though the Russian side does not openly put forward the benefits of the Akkuyu projects for their country, some top level Russian officials and diplomats acknowledged the advantages of the Akkuyu NPP and expressed their gratitude to the Turkish side for allowing this strategic investment.

In general, it is possible to suggest that the Turkish side has made serious concessions to finally obtain nuclear power plants. Firstly, although all of the costs will be covered by the Russian side, the initial fixed prices are still so high. Therefore, electricity provided by the NPP ends up being more expensive than the unit prices of other electricity generation sources such as natural gas and hydroelectricity.[317] As such, compared to nuclear energy, natural gas prices (2 - 2.4 cents) are six times cheaper than the planned fixed prices of nuclear energy (0,1235 USD/kWh or 12.35 cents). Therefore, the calculations given in official documents that suggest that Turkey will be able to cover the cost of NPPs via the money saved from natural gas import is indeed misleading. At the outset, it is not certain that Turkey will purchase all the electricity produced via those NPPs which means the compensation between natural gas and nuclear energy is not clear. Secondly, the electricity that will be generated by the Akkuyu NPP will not be free of charge.

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[317] Turkey's Natural Gas Prices in 2018: 0,024 USD/kWh for household and 0,020 USD/kWh for non-household prices. The price of Hydroelectric power is 0,073 USD/kWh or 7.3 cents per 1 kWh. Overall, the price scale from the most expensive one to cheapest goes as 12.3 cents from nuclear power, 7.3 cents from hydropower and 2 cents from natural gas. The information regarding the natural gas prices are retrieved from: Eurostat, "Natural gas price statistics", European Parliament and of the Council, October 2018, ec.europa.eu/eurostat/statistics-explained/index.php?title=Natural_gas_price_statistics&oldid=363331#Natural_gas_prices_for_household_consumers [accessed 25 April, 2019]. And see also: *Yenilenebilir Enerji Kaynaklarının Elektrik Enerjisi Üretimi Amaçlı Kullanımına İlişkin Kanun* (Law Regarding the Use of Renewable Energy Resources for the Production of Electrical Energy*)*, May 10, 2005, Official Gazette No. 5346, available at: /www.mevzuat.gov.tr/MevzuatMetin/1.5.5346.pdf [accessed April 27, 2019] (in Turkish).

Turkey will be purchasing half of the electricity from those reactors for 12.35 cent/ kWh fixed prices. The cost will be at least $2.1 billion only for the half.[318] If the other half will be compensated by NPPs then instead of saving, there will be a loss of money.[319] If Turkey prefers not to purchase the rest and imports natural gas instead, then it will cost $1.8 billion.[320] In the end, whatever the policy pursued, there will definitely not be any money saving. The real scenario is that Ankara will import half of the electricity generated from NPPs for 15 years, and only then the cost for four NPPs will have been paid for. So, at first it seems like owning a house by paying mortgage; there is however one major difference, Turkey will never own the house.

Another important point that needs to be mentioned is the problematic side of the price-setting process: once the fixed term is over, Russia will be determining the price of the electricity to be sold to Turkey. Hypothetically speaking if Russia determines the price at 12 cents (less than the fixed amount), Turkey may be at a loss. The amount of electricity that will yearly be produced by AKKUYU JSC is estimated to be 35 billion kWh, so the total profit will be around $4.2 billion.[321] Only 20% of the profit will be shared with the Turkish side from the NPP operating in

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[318] It is calculated as: 17.500.000 (half of the electricity) x 0.1235 (fixed price) = 2.161.250.000

[319] It will be $2.1 billion + $2.1 billion = $4.2 billion > $3.6 billion (cost of natural gas for the same amount of electricity generation)

[320] It is the money that is used to purchase 4 billion m^3 (natural gas) or 17.5 billion kWh (electricity) [It is $3.6 billion yearly for 8 billion m^3 or 35 billion kWh]. Therefore in the end, $2.1 billion for the first half and $1.8 billion for the second half, make $3.9 billion which is definitely higher than money estimated to be saved ($3.6 billion). Retrieved from: Enerji ve Tabii Kaynaklar Bakanlığı (The Ministry of Energy and Natural Resources), *Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler* (Nuclear Power Plants and the information regarding to the Nuclear Power Plant which will be constructed in our country), p. 44.

[321] The equation is: 35.000.000.000 x 0,12 = 4.200.000.000

Turkish soils which will be around $840 million.[322] In the end, Turkey will pay $4.2 billion to purchase and get only $840 million back as a share from the profit. In other words, the unit cost will only be decreased to 9.6 cents/kWh.[323] All in all, the share of a profit serves as a discount mechanism. Regardless of the prices, it will always be the same scenario since Turkey will only be a customer, not the owner. One can claim that 12 cents/kWh is too high after the fixed term and Turkey has the right to not purchase from that price. In that scenario, one can suggest that Russia would have no choice but to decrease the price in order to not to lose money. In such a case, however, the Russian side may or may not lower the prices. Either way, the prices would be profitable for Moscow which will be calculated by subtracting all costs. The least profitable price for Russia will be accepted by Turkey since it is an energy-poor country who is in need of electricity. It would not be easy to simply cast off that energy, especially when the other alternative resources (such as natural gas) have also been mostly supplied by the Russian Federation itself. Even in case of a purchase rejection by the public institutions, the Akkuyu JSC has the right to sell to any customer in an open energy market regardless of the company or institution. In this vein, Russia would attain what it wants and in the final analysis nothing would change for the Russian side, whereas the Turkish side would need to compensate that electricity by other sources, primarily by Russian natural gas. All this would render the Akkuyu NPP meaningless if the electricity purchase will be rejected by Turkey. In short, there will not be any stability in electricity prices or security in energy supply.

Secondly, the BOO structure of the agreement puts Turkey in a more disadvantageous position and it aggravates the level of dependency - Russia will

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[322] The 20% of the $4.2 billion is $840 million.

[323] The calculation is made as follows: $4.2 billion - $840 million = 3.360.000.000.
3.360.000.000 / 35.000.000.000 = 0.96 cents

produce and sell electricity within the Turkish borders. Turkey will never be the real owner of the reactors and will be able to set the prices after the fixed term. In this context, Russia will not only get back the investment cost but also will gain more profit and influence through its NPPs. Even if the Akkuyu NPP was not a BOO model like the ROSATOM's projects in other countries, Russia would also gain influence and money as it would assume every other aspect like providing all the other nuclear goods and services, except the operation duty.[324] In the current situation, in addition to the construction, maintenance, fuel cycle, and decommission, Russia possesses the right to operate. The bottom line is that the BOO model increases dependency and prevents Turkey from part of any developments and improvements in both civilian and military dimensions of nuclear energy within its borders. All in all, if the agreement was signed under different circumstances, the dependency would be much less and the energy supply security could be provided in a more efficient way.[325]

Thirdly, the authority given to Russia over the nuclear fuel cycle increases Moscow's power over the facility. As such, the Russian Federation is responsible for any issue regarding the nuclear fuel cycle which means that it will not only provide the nuclear fuel for the reactors but also be responsible for other processes of the fuel cycle (e.g.

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[324] For instance: Iran, Bangladesh, Jordan, Egypt, Nigeria, Hungary, Belarus, Armenia, and Finland. Retrieved from: ROSATOM*, The Performance of State Atomic Energy Corporation Rosatom in 2017*, pp. 28-29.

[325] For instance, the Russian reactors in Iran were constructed under the BOT model, therefore, Russia will have the authority to operate as it will be the owner of the facility. There will not be any foreign country who produces and sells the electricity after a fixed term in Iranian territory. Of course, there will be a dependency on Russian nuclear goods and services but not as much as it exists in the Turkish case. As such, Tehran improves its nuclear intelligence and develops its own uranium-enrichment facility which in the end would pave the way to inventing its own nuclear weapons. As explained above, this is one of the reasons why countries are interested in civilian nuclear power plants. For the information regarding the Iran's NPP and its agreement type see: Mustafa Ansari and Ghassan Alakwaa, "MENA nuclear plans stalled as challenges begin to surface", Apicorp Energy Research Vol. 3, No. 11, 2018, pp. 1-4.

recovery, conversion, enrichment, reconversion, fabrication, utilization, interim storage, reprocessing, final disposal).[326] Moreover, Turkey does not have a say on the issue of where uranium will be imported since Russia owns the facility. In other words, uranium will be imported from Russia because only this country will operate the reactors and assume the other processes regarding the nuclear fuel cycle. As a result, Turkey will be even more dependent on Russia in terms of the supply of nuclear fuel. Even if Moscow was not responsible for the nuclear fuel supply, a scenario which would result in Turkey's finding another nuclear fuel supplier, it would still be difficult for Turkey to find a supplier that would also agree to assume all the other processes.[327] In general, however, host countries such as Russia take care of the disposal, recycling or pooling issues or make deals with other countries that would take care of these tasks for them. Hence, Russia presents an offer that cannot be refused. As a consequence, there emerges more than one area of activity that Turkey will depend on Russia. In the final analysis, it really does not matter which type of energy resource (natural gas or uranium) is needed, the fact remains that the country ends up being dependent on a foreign country.

The final point that needs to be mentioned is related to the employment opportunities that the Akkuyu NPP will bring to Turkey. It is not very clear whether such opportunities will really emerge or not. Turkey does not have any real nuclear experience and qualified personnel to work in NPPs. Furthermore, there are inconsistencies regarding the expected employment figures published by the Turkish sources. For example, it was claimed by the Ministry of Energy and Natural

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[326] *Agreement between the government of Turkey and the government of the Russian Federation on cooperation in relation to the construction and operation of a nuclear power plant at the Akkuyu site in the Republic of Turkey*, 2010, Official Gazette No. 27721.

[327] John P. Banks and Sharon Squassoni, "Commercial Nuclear Markets and Non Proliferation", in: John P. Banks and Charles K. Ebinger, ed., *Business and Nonproliferation: Industry's Role in Safeguarding a Nuclear Renaissance*, Brookings Institution Press, Washington, D.C. 2011, pp. 57-60.

Resources that the Akkuyu NPP will provide new jobs to 37.000 people (20.000 in construction, 7.000 in operation, and 10.000 in domestic industries). However according to Turkish Atomic Energy Authority, the same figures are estimated to be around 10.000 for those people to be employed in construction and commissioning periods, and 4.000 for those people who will be needed permanently.[328] There are also specialists who have been sent to Russia to get an education in order to be able to work in those NPPs but the numbers are very limited.

In sum, the picture does not seem to be as positive as the official Turkish documents suggest. The benefits Russia will get from the Akkuyu project will far exceed the benefits for Turkey. First, financial calculations are mostly misleading and inaccurate. In other words, the Akkuyu NPP will not bring energy supply security or stability in electricity prices. Second, the employment numbers given by Turkish official authorities are not coherent and there are inconsistent figures and different estimates. Third, the model of the contract boosts Turkey's dependency on Russia. Fourth, the Akkuyu NPP will have costs beyond the economic calculations for Turkey. As such, Russia will definitely strengthen its position in Turkey and get a clear foreign policy leverage that will be utilized as an efficient tool to pressure Turkey. This may very well cause Turkey to lose its sovereignty in its foreign policy options and severely limit its capacity to maneuver. In short, for Turkey, despite certain benefits, the Akkuyu NPP project is not as profitable as it seems.

Overall, it will be the Russian side that will gain internal authority and sovereignty with this project as a consequence of which Turkey's dependency will be instigated on several related sectors. At the same time Turkey will not be able to abandon the project as it will be very costly to do so. On the one hand, there will be a high level

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328 The information is retrieved from: TAEK, "A Full Report to the 7th Review Meeting of Convention on Nuclear Safety", Turkish Atomic Energy Authority, August 2016, p. 32. Accessible via: www.iaea.org/sites/default/files/turkey-national-report-for-7th-rm-cns.pdf [accessed June 6, 2019].

of dependency on Russia, on the other hand there will be extensive cooperation between the two sides. In both cases, Russia will get a major opportunity to expand its influence and domination in Turkey. In the end, Turkey's energy-dependent situation will not be changed, even though the variety in its energy supply umbrella will be increased. The Russian domination in Turkey's energy sector will be even more prominent, taking into account the already existing natural gas dependency of Turkey on Russia.

In addition to the energy sector, with this project, the pro-Russian dynamics in Turkey's domestic and foreign policy will be even more pivotal. In other words, Moscow would have finally achieved a strong foreign policy tool in Turkey. As mentioned earlier, Kremlin sees the Akkuyu NPP project as an opportunity to contain the U.S influence over Turkey and to have an ally inside the NATO, giving Russia more leverage. Some top level U.S officials expressed ideas about missed opportunities on the part of their country to construct NPPs in Turkey.[329]

As a final note it must be stressed that the Akkuyu project will most probably be used by Russia as a leverage towards Turkey. First, it can cause fluctuations in the electricity prices after the fixed term. Second, it can delay the process related to the nuclear fuel cycle or electricity supply that Turkey is in need of. Third, it can cause security threats through delays in maintenance or wrong-doings. In any case, Russia will be able to exert its influence over Turkey and pressure the country to act in a pro-Russian line. Russia will not hesitate to use this kind of leverage especially in those cases where there is a conflict between the two sides on a foreign policy issue. In such situations, Turkey may not easily take an anti-Russia side or make a free decision regarding which way it will act. In other words, the country may very

[329] Such a comment was made by one of the former U.S Ambassadors to Turkey in a reception (organized in 2010, Ankara, Turkey) to a senior international relations academician. According to this ambassador, Turkey should have been approached for the construction of NPPs from the U.S and not Russia.

clearly feel the pressure coming from Moscow about the possible consequences of its actions which will not please Russia. Therefore, nuclear energy dependency of Turkey should be expected to bring many limitations on the country's foreign policy. As a result, the Akkuyu NPP project will result in Moscow's domination in the foreign policy dynamics between Turkey and Russia.

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APPENDICES

A. TURKISH SUMMARY / TÜRKÇE ÖZET

Bu çalışmanın amacı, özellikle nükleer enerjinin sivil yönüne ve nükleer enerjinin Rusya-Türkiye ilişkilerini nasıl şekillendirdiğine odaklanarak, 2000-2019 yılları arasındaki Rus dış politikasının dinamiklerini incelemektedir. Bu tez, nükleer enerjinin bir dış politika aracı olarak rolünü ve önemini Türkiye örneğinden yola çıkarak açıklığa kavuşturmayı hedeflemektedir. Bu nedenle, Rusya'nın nükleer enerji politikası ayrıntılı olarak incelenmiştir. Bu çalışma, nükleer güç santrallerinin (NGS) sivil amaçlarla pazarlanmasının yalnızca Rusya ekonomisine katkı sağlamakla kalmayıp, aynı zamanda Rusya'nın nükleer reaktörlerin satıldığı veya diğer nükleer ürün ve hizmetlerinin tedarik edildiği yerler üzerindeki etkisini ve gücünü de arttırdığını savunmaktadır. Bu bağlamda ilk olarak, Rusya'nın nükleer statüsü hakkında kısa bir tarihsel arka plan bilgisi ve Vladimir Putin'in başkanlığı sırasında nükleer enerjinin dış politika aracı olarak kullanılması ele alınmaktadır. Daha sonrasında, Rusya'nın Türkiye'ye yönelik nükleer enerji politikaları ve bu politikaların Türkiye'deki Rus dış politika dinamikleri üzerindeki etkileri açıklanmaktadır.

Rus dış politikası oluşturulurken ve uygulanırken diğer faktörlerden ziyade, büyük güç statüsünün en önemli ve en belirleyici faktör olarak kabul edildiği literatür, temel teorik çerçeve olarak kullanılmıştır. Bu genel çerçevede, Rusya'yı nükleer güç olarak analiz eden ve bilhassa nükleerin sivil boyutuna vurgu yapan literatürden, tezin kapsamı doğrultusunda faydalanılmıştır.

Literatüre baktığımızda, her ne kadar bazı akademisyenler ve araştırmacılar nükleer enerjinin sivil boyutunun Rus dış politikasındaki rolünü ve önemini incelemiş olsalar da, konu henüz kapsamlı olarak ele alınmamıştır. Mevcut literatürdeki çalışmaların hiçbiri; nükleer enerjinin sivil boyutunun, Rusya'nın NGS ithal ettiği ülkelerle olan ilişkileri üzerindeki rolünü netleştirmeyi amaçlamamıştır. Ayrıca, Rusya-Türkiye ilişkileri de bu açıdan incelenmemiştir. Dolayısıyla bu çalışma literatürde mevcut olan boşluğu dolduracaktır.

Bu konuyu önemli kılan birkaç neden söz konusudur. Her şeyden önce enerji ülkeler için; kalkınma, sanayileşme, kentleşme, üretim, hizmet ve tarım konularında aynı insan hayatındaki su gibi vazgeçilmez bir unsur olarak kabul edilmektedir. Enerji olmasa günlük hayatımız bile durma noktasına gelirdi. Nükleer enerji, bu kaynaklar arasında özel bir konuma sahiptir. Bu teknolojiye sahip ülkeler için nükleer enerji; sadece ekonomik değil, aynı zamanda politik bir güç kaynağıdır. Potansiyel diplomatik ve politik etkisi, Rusya Federasyonu da dahil olmak üzere birçok ülke tarafından fark edilmiştir. Özellikle Vladimir Putin'in Cumhurbaşkanı seçilmesinden sonraki dönemde daha kapsamlı nükleer politikalar izleyen Rusya, Devlet Nükleer Enerji Şirketi'nin (Rosatom) kuruluşu ile bu alanda büyük bir ilerleme kat etmiştir. Yalnızca Rosatom'un politika uygulamaları analiz edilerek, çeşitli stratejik bölgelerde siyasi ve ekonomik üstünlük kazanmak için, nükleer enerjiyi kullanıldığı fark edilebilir. Sahip olduğu önem ve yarattığı etki, diğer tüm nedenlerin yanı sıra nükleer enerjinin Rus dış politikasındaki yerini araştırmaya değer kılmaktadır.

Bu çerçevede, çalışmanın ana konusu olan nükleer enerjinin Rus dış politikasındaki yeri hususunda Türkiye diğer ülkeler arasında istisnai ve özgün bir yere sahiptir. İlk olarak Türkiye, enerji kaynakları bakımından kısıtlı imkanlara sahip, gelişmekte olan bir ülkedir. Bu durum onu enerji politikaları konusunda savunmasız ve kolay bir hedef haline getirmektedir. İkincisi, Türkiye'nin jeopolitik konumu Rusya'nın ekonomik ve politik gücünü arttırmayı hedeflediği Orta Doğu, Orta Asya ve Güney

Kafkasya gibi bazı bölgelerde stratejik bir role sahiptir. Üçüncüsü, Türkiye'nin NATO içerisindeki stratejik konumu, Rusya için Batılı ülkelerin nüfuzunu engelleme noktasında önemli bir fırsat teşkil etmektedir. Son olarak Türkiye Yap-Sahip ol-İşlet modeli ile NGS kurmayı ön gören anlaşmayı kabul etmiştir. Bu anlaşma, Türkiye'nin Rusya'ya bağımlılığını daha da körüklemektedir.

Tüm bu hususlar dikkate alındığında, bu tezin ele aldığı ana soru şu şekildedir: NGS'lerin ihracatı, Türkiye'deki Rus dış politika dinamiklerini ne ölçüde etkilemektedir? Bu tez, özellikle Türkiye örneğinden yola çıkarak nükleer enerjinin bir dış politika aracı olarak rolünü ve önemini açıklığa kavuşturmayı amaçlamaktadır.

Bu tezin Giriş ve Sonuç bölümleri dışında iki ana bölümü vardır. İkinci bölümde, nükleer enerjinin bir dış politika aracı olarak Rus dış politikasındaki yeri açıklanmıştır. Bu bölüm, Rusya Devlet Başkanı Vladimir Putin'den önceki dönemde, Rusya'nın nükleer güç statüsünün tarihi arka planını ve Putin'in başkanlığı sonrası nükleer enerjinin Rus dış politikasında bir araç oluşunu analiz etmektedir. Ayrıca bu bölümde Rusya'nın nükleer kapasitesine ve stratejik amaçlarına da yer verilmiştir. Üçüncü bölüm ise, Rusya'nın Türkiye'ye yönelik nükleer enerji politikaları ve bu politikaların Türkiye-Rusya dış politika dinamikleri üzerindeki etkilerini ele almaktadır. Bu bölümde Türkiye'nin nükleer enerji politikaları ve Akkuyu Nükleer Güç Santrali projesi özellikle incelenmiştir. Sonuç kısmında ise çalışma kısaca özetlenmiş araştırmanın sonuçları tartışılmış ve nükleer enerjinin aslında Türkiye için olumsuz getirilerinin, olumlu getirilerinden fazla olduğu açıklanmıştır.

Çalışmanın birincil metodolojik aracı belgesel araştırmalara dayalı nitel analiz olmuştur. Rusça, İngilizce ve Türkçe olmak üzere akademik kitaplar, makaleler, gazeteler, dergiler, çevrimiçi kaynaklar ve resmî web siteleri birincil ve ikincil kaynaklar olarak kullanılmıştır. Bu kaynaklar arasında, Türkiye'nin ve Rusya'nın

Dışişleri Bakanlığı, Ekonomi Bakanlığı ve Enerji Bakanlığı da dahil olmak üzere birçok resmî web sitesi sayılabilir. Çalışmanın amacı doğrultusunda, Türkiye Cumhuriyeti ve Rusya Federasyonu arasında imzalanan nükleer iş birliği antlaşmasının yasal çerçevesi ile Birleşmiş Milletler, Uluslararası Atom Enerjisi Ajansı gibi kuruluşların da içinde bulunduğu birçok kurumun raporları ve analizleri incelenmiştir. Son olarak, konu hakkında her iki ülke tarafından, Cumhurbaşkanlığı nezdinde veya daha alt düzeyde yapılan konuşmalar, açıklamalar ve beyanatlardan yararlanılmıştır.

Nükleer enerji statüsü askeri ve sivil olmak üzere iki farklı açıdan elde edilebilir. Rusya Federasyonu nükleer enerjinin her iki yönüne de sahiptir. Nükleer Silahların Yayılmasını Önleme Antlaşması'na (NPT) göre, Rusya resmî olarak nükleer silah sahibi bir devlet olarak tanınmıştır. Bununla birlikte, aynı anlaşmaya göre, Rusya'nın da dahil olduğu nükleer silah sahibi ülkelerin, bu teknolojiyi devretmesi veya herhangi bir ülkeye nükleer silah üretimi ile sonuçlanacak bir yardımda bulunması yasaklanmıştır. Ayrıca Rusya, nükleer silahların herhangi bir ülkeye karşı tehdit olarak kullanılmasına ve nükleer silahların yayılmasına karşıt bir konumdadır. Öte yandan, sivil amaçlı nükleer enerjinin kullanımı konusunda herhangi bir kısıtlama olmadığı için, Rusya yalnızca yerel kullanım amaçlı elektrik üretmekle kalmıyor, aynı zamanda ürettiği elektrik ile birlikte NGS malzemeleri ve teknolojisi de dahil olmak üzere sivil bağlamda nükleer mal ve hizmette ihraç etmektedir.

Nükleer teknolojinin ortaya çıkışının ilk yıllarını incelediğimizde, bu teknolojinin sivil boyutunun Soğuk Savaş yıllarının koşulları nedeniyle göz ardı edildiğini görmekteyiz. O dönemde, Sovyet Sosyalist Cumhuriyetler Birliği (SSCB) nükleer silah bulundurmaktan elde ettiği nükleer güce ve statüye odaklanmaktaydı. Gerçekten de, Sovyetler Birliği'nin nükleer gücü, öncelikli olarak sahip olduğu nükleer silah kapasitesinden ortaya çıkmaktaydı. Bununla birlikte, SSCB'nin yıkılmasından Vladimir Putin dönemine kadar Rusya, yeni bir devlet olarak küresel

toplumun bir parçası olmak istediği ve Sovyet sonrası geçiş döneminin özel şartları nedeniyle hem sivil hem de askeri anlamda nükleer kalkınmaya pek ilgi göstermemiştir.

Putin döneminde, nükleer enerjinin sivil boyutunun önemi çok daha belirgin hale geldi. Bu bağlamda, nükleer silahları azaltma anlaşmaları ve nükleer silah sahibi devletler arasında nükleer savaş olasılığının düşüklüğünden dolayı, Rusya nükleer silahlara yalnızca konvansiyonel savaşın ve nükleer saldırganlığın olası tehditlerine karşı koruyucu bir opsiyon olarak yaklaşmaya başladı. Öte yandan; nükleer enerjinin sivil amaçlı kullanımı konusunda herhangi bir kısıtlama olmadığından, ülkede yerel kullanım ve ihracat amaçlı nükleer bazlı elektrik üretimi teşvik edilmeye başlandı. 2010 yılında Rusya Federasyonu Enerji Bakanlığı tarafından yayınlanan "Enerji Stratejisi Belgesi" nükleer enerjinin Rusya'nın enerji politikaları için arz ettiği önemi açıkça ortaya koymuştur. Putin döneminde Rusya, nükleer güç veya büyük güç statüsünün nükleer silah sayısına bağlı olmadığını, bunun yerine artık nükleer enerjinin sivil bağlamda enerji kaynağı olarak dış politika icrasında bir araç olarak kullanılabileceğini fark etmiştir. Bu doğrultuda, Rosatom, Federal Atom Enerjisi Ajansı'nın özelleştirilmesi ile kurulmuştur. Kuruluşundan sonra, NGS inşaası önemli bir ivme kazandı ve nükleer sanayi, Rusya'nın iç ve dış politikası için çok kritik bir konuma geldi. Nitekim bu süre zarfında, Rusya'nın Asya, Güney ve Kuzey Amerika, Avrupa, Orta Doğu ve Kuzey Afrika'da aktif bir şekilde sivil nükleer politika izlediğini görmekteyiz.

En basit haliyle Rusya, NGS ihraç ederek ve Rosatom'un denizaşırı nüfuzunu kullanarak hem etki merkezi olarak konumunu sağlamlaştırmayı hem de ABD ile NATO'nun küresel politikalar üzerindeki etkisini kırmayı hedeflemektedir. Rosatom bu nedenle oldukça önemli bir rol üstlenmektedir. Bu bağlamda, Rusya'nın hüküm sürdüğü bir "Nükleer İmparatorluk" kurmak istediği de iddia edilebilir. Finansal açıdan baktığımızda, yalnızca 2017 yılında cirosunun yaklaşık 15 milyar dolar

olduğunu görmekteyiz. Ayrıca, gelirleri daha da arttıracak 20 hükümetler arası ve sektörler arası anlaşma imzalanmıştır. Şirketin stratejisi 20 yıl içinde %30 büyütmektir. Diplomatik ve politik açıdan baktığımızda ise, Rusya'nın farklı kıtalar üzerindeki jeopolitik etkisini artırma stratejisi olarak, Rosatom'u kullandığını ve aynı amaçla, 50 ülkede farklı operasyon ve misyonlar kurarak etkisini arttırdığını görmekteyiz. Bu politika hem NGS ihracatını ve inşaatını hem de nükleer yakıt ihracatını içermektedir. Rosatom'un 130 milyar doları aşan yurtdışı portföyü, bu politikaların büyüklüğü ve ciddiyetini daha iyi kavrayabilmek için oldukça etkili bir kanıttır. Dahası, küresel zenginleştirilmiş uranyum pazarındaki %36'lık payı ile Rosatom lider konumunu sürdürmektedir. Ek olarak 12 farklı ülkeye NGS, 15 ülkeye de nükleer yakıt ihraç etmektedir. Yürüttüğü uzun vadeli projeler ve sağladığı hizmetler ile uzun yıllar boyunca bu ülkeleri kendisine bağlamaktadır. Zira bir yakıt ikmali kesintisi veya projenin askıya alınması durumunda, bu devletlerin alternatif yakıt tedarikçileri bulması veya projeyi tamamlayabilmeleri çok zor olacaktır. Kremlin uzun yıllardır böyle bir koz elde etmeyi planlamaktadır. Rusya Federasyonu'nun dış politika yaklaşımı hakkındaki dokümanlar, Rusya'nın bugünün dünyasında bir etki merkezi olarak konumunun sağlamlaştırılmasını vurgulamaktadır. Ayrıca; ulusal güvenlik stratejisi, nükleer enerji alanında ülkenin konumunu güçlendirme hedefini içermektedir. Kısacası Rusya'nın nükleer politikası çok net bir şekilde siyasi amaç içermektedir. Ezcümle, Rus NGS ihracatının ve Rosatom'un denizaşırı nüfusunun nihai hedefi, baskın bir küresel rol, etki ve siyasi koz kazanmaktır.

Bu kapsamda, Rusya'nın nükleer reaktörler aracılığıyla bu reaktörleri ithal eden ülkelerin enerji sektörleri üzerindeki etkisini güçlendirebileceğini söylemek mümkündür. Ayrıca, Moskova sadece NGS'ni ihraç etmekle kalmıyor, aynı zamanda Türkiye'deki Akkuyu projesinde olduğu gibi ikili anlaşmalara dayanarak bunları kullanma hakkına da sahip oluyor. Ek olarak, devletler bu projeleri üç nedenden ötürü tamamlamak için oldukça kararlıdırlar: artan enerji talebi, yüksek maliyetler ve

sivil teknolojiyi askeri teknolojiye - diğer bir deyişle nükleer silaha dönüştürme isteği. Nükleer santral ithal eden birçok ülke enerji kaynakları bakımından fakirdir ve bu nedenle toplam enerji talebini karşılayamamaktadır. Bu bağlamda, NGS'ler, miktarına ve teknolojisine bağlı olarak, ciddi miktarda enerji sağladıkları için büyük öneme haizdir. Ayrıca, ilk kurulum maliyeti nükleer santraller için çok yüksek olduğu ve nükleer reaktör inşaatları büyük yatırımlar gerektirdiği için, devletler harcamaların Rusya tarafından karşılanmasına rağmen mümkün olan en kısa sürede ve mümkün olan en düşük fiyatla tamamlanmasını istemektedirler. Bu sayede uzun vadede maliyetlerin artmasını engellemek istemektedirler. Bunların yanı sıra, Moskova hem NGS'i ihraç ettiği ülkelere hem de bu santrallerden bağımsız olarak birçok farklı kıtadan ülkeye, nükleer yakıt arz etmektedir. Hatta bazı ülkelerin nükleer yakıt çeviriminin tüm aşamalarının sorumluğunu da üstlenmektedir. Moskova, NGS ithal ettiği ülkenin kendisine olan bağımlılığını pekiştirmek için ihracatını ve dış uranyum arz kapasitesini her geçen gün arttırmaktadır. Rosatom dünyada uranyum rezervi bakımında ikinci, üretim kapasitesi bakımından ise dördüncü sırada yer almaktadır. En az dört farklı kıtaya nükleer yakıt sağlarken, nükleer olmayan ülkelerde de NGS inşaası öngören bir politika izlemektedir. Bu sayede Rusya bir bakıma boru hatları ve kıta sınırlaması olmadan birçok ülkeyi kendisine bağımlı hale getirebilmektedir. NGS'lerin tamamlanmasının ardından Moskova, yakıt arzını geciktirme, azaltma veya komple kesme tehdidi ile ithalatçı ülkeler üzerinde etkili olmaya devam edecektir. Bu ülkelerin yakıt arzını telafi etmeleri çok zor olacağından, Rusya tekel statüsünü korumaya devam edecektir. Ayrıca, Nükleer santrallerin nasıl inşa edilebileceğine ilişkin teknik bilgi birikimi aktarmayacağından, nükleer mal ve hizmetlerin ana tedarikçisi olmaya da devam edecektir. Arıza durumlarında veya nükleer kaza gibi acil durumlarda yalnızca Moskova harekete geçebilecek güce ve uzmanlığa sahip olacaktır. Dolayısıyla, Rusya'dan nükleer santral ithal eden ülkeler nükleer reaktör çalıştığı sürece Rusya'ya bağımlı olmaya devam edecektir.

İki ülke arasındaki ilişkiler, enerjiden güvenliğe uzanan geniş bir yelpazeye sahiptir. İkili ilişkiler Akkuyu NGS projesi gibi sağlam, uzun vadeli ve yüksek bütçeli projelerle peyderpey konsolide edilmektedir. Sonuç itibariyle de, ilişkiler geri dönülmesi zor bir noktaya ulaşmaktadır. Her iki tarafın da birbirine olan bağımlılığı artmaktadır. İki ülke arasındaki dış politika dinamiklerine baktığımızda, Moskova'nın ilişkileri hem şekillendirip hem de baskın konuma gelebileceği bir araç aradığını görmekteyiz. Enerji kaynakları böyle bir aracı elde etmek için önemli bir fırsat olarak görülmektedir. Rusya genel olarak dış politikasında güç ve etki elde etmenin bir yolu olarak, başta doğalgaz olmak üzere enerji kaynaklarını kullanır. Rus enerji şirketlerinin Türkiye'nin enerji sektörü üzerindeki hakimiyeti, bu niyetin açık bir göstergesidir. Bu bağlamda, doğalgaz akla gelen ilk kaynaktır. Türkiye ile Rusya arasındaki enerji ticareti hacmine kısaca baktığımızda, Türkiye'nin enerji kaynaklarını ithal ettiği ülkeler arasında Rusya'nın ilk sıralarda geldiğini görmekteyiz. Daha açık olmak gerekirse; Rusya, 2002'den bu yana Türkiye'nin toplam doğalgaz talebinin en az yarısını sağlamaktadır. Ayrıca Türkiye; arz açığını telafi edebilmek için ham petrolünün %20'sini Rusya'dan ithal etmekte ki, bu oranla diğer ülkeler arasında ikinci sırada yer almaktadır. Yapılan bu petrol ithalatı gün geçtikçe artmaktadır. Bu bağlamda; Türkiye yalnızca yabancı kaynaklara bağımlı bir ülke değil, aynı zamanda Rus enerji kaynaklarına bağımlı bir ülke konumundadır. Ancak doğalgaz ve petrol ticareti siyasi bir baskı aracı olarak kullanıldığında, Rusya da en az Türkiye kadar kayba uğrayacaktır. Dolayısıyla Moskova'nın, Türkiye ile karşılaştırıldığında, daha az kaybedeceği bir denkleme ihtiyacı vardır. Bu noktada Akkuyu NGS projesi mükemmel bir çözüm olarak karşımıza çıkmaktadır.

Rus dış politika belirleyicilerinin sivil nükleer politikalarını Türkiye'ye göre formüle etmeye yönlendiren bazı nedenler vardır. Öncelikle; Türkiye'nin Orta Doğu'dan Orta Asya'ya uzanan çeşitli bölgelerdeki etkili konumu, Moskova tarafından etki alanını genişletme fırsatı olarak görülmektedir. Kremlin; Orta Doğu, Kuzey Afrika, Avrupa, Transkafkasya ve Orta Asya'da sahip olduğundan geniş kapsamlı bir etki

arayışındadır. Türkiye'nin bu bölgelerdeki, özellikle Kafkasya ve Orta Asya'daki etkisi; tarihi bağlar, din, stratejik coğrafi konum, modern ekonomi ve askeri yetenek gibi nedenlerden kaynaklanmaktadır. Tüm bu yönleri, Türkiye'yi doğrudan bir müttefik yapmakta ve bu bölgelerde etkili olmasına yardımcı olmaktadır. Bir uzman tarafından öne sürüldüğü gibi, Türkiye'nin Afganistan'daki dini yapılar üzerindeki etkisi; ortak kimliğe, tarihe ve dine dayalı Orta Asya ülkeleriyle yüksek düzeyde işbirliği; Batı ülkeleriyle uzun vadeli işbirliğinin yanı sıra Batı yanlısı politikaları; ortak tarih, kimlik ve din nedeniyle Transkafkasya'daki etkisi; ABD ve NATO ile yakın bağları, Kremlin'in Türkiye ile ilişkilerine büyük önem atfetmesine sebebiyet vermektedir.

Özellikle, Türkiye'nin NATO üyeliği ve Vaşington ile sahip olduğu müttefiklik, Rusya'yı Türkiye üzerinde daha etkili olmaya teşvik etmektedir. Kuruluşunun başından itibaren Türkiye, düzenli olarak yurtdışı misyonlarına katılan, etkili bir orduya sahip önemli NATO müttefikleri arasında sayılmaktadır. Diğer bir yandan, Rusya ulusal güvenlik belgesine göre NATO düşmanı olarak nitelendirilmekte ve Rusya Devlet Başkanı Vladimir Putin NATO'nun genişleme politikasını Rusya'ya karşı genişleme olarak algılamaktadır. Bu nedenle, NATO'nun Ukrayna, Gürcistan, Kazakistan ve Moldova gibi eski Sovyet ülkeleriyle ortaklık programları, Kremlin'deki karar alıcılar için Rusya sınırlarına çok yakın bölgeler olduğundan dolayı büyük bir endişe kaynağı teşkil etmektedir. Bu bağlamda Moskova, artan NATO genişlemesini ve ABD etkisini dengelemek için askeri olarak agresif veya politik ve ekonomik açıdan stratejik politikalar izlemektedir. Bu genel bağlamda, Kremlin; vazgeçilmez bir NATO üyesi devleti, Batı etkisinden uzaklaştırmak için Ankara ile diyaloğunu daha da geliştirmeyi amaçlamaktadır. Ankara'nın Vaşington ile haiz olduğu işbirliğinde yaşanan son düşüşler, Moskova'nın kendi faaliyet alanını arttırması için bir fırsat olarak öne çıkmaktadır.

Diğer bir neden ise, Türkiye'nin enerji kaynakları bakımından fakir olması ve bu bağlamda diğer ülkelere olan bağımlılığının, Ankara'yı savunmasız bir konuma sokmasıdır. Dolayısıyla bu durum Rusya cephesine önemli bir fırsat sunmaktadır. Nükleer enerji, Türkiye cephesinden, giderek sanayileşen ve kentleşen bir toplumun enerji ihtiyacını karşılamak için uygun bir alternatif olarak görülmektedir. Bu nedenle, Türkiye'nin ulusal enerji politikasına uygun olarak, NGS projeleri ülkenin bağımlılık seviyesini azaltmanın bir yolu olarak görülmektedir. Tüm bu faktörler, Rusya'yı Türkiye ile daha yakın ilişkiler kurmaya ve nükleer enerjiyi bu ilişkiler de baskın olmak için kullanmaya teşvik etmektedir.

Türkiye'nin ulusal enerji stratejisi asli olarak dış kaynak bağımlılığını azaltmayı amaçlamaktadır. Bu strateji dört ana politikadan oluşmaktadır: ithal petrol ve doğal gaz için tedarik rotalarını ve kaynaklarını çeşitlendirmek, enerji arzındaki ulusal ve yenilenebilir enerjinin oranını artırmak, enerji verimliliğini artırmak ve enerji yelpazesine nükleer enerjiyi eklemek. Nükleer enerji, Türkiye'nin enerji portföyü için bir zorunluluk olarak kabul edilmektedir. Türkiye'nin nükleer enerji atılımı 1950'lerde başlamasına rağmen, ilk somut nükleer güç santrali planı nihayet 2010 yılında Rusya ile yapılan ikili nükleer işbirliği antlaşması ile gerçekleşmiştir. Her biri 1200 megavat gücünde dört adet yeni jenerasyon VVER-1200 tipi reaktör kurulmasını öngören bu antlaşma, 50 yıldır süregelen çabaları nihayete erdirmiştir.

Proje, Yap-Sahip ol-İşlet adı verilen muadillerinden oldukça farklı, daha önce hiçbir ülke ile denenmemiş bir modeldir. Bu tür bir anlaşma modelinde, özel bir şirket, bu durumda Akkuyu Nükleer A.Ş, nükleer tesis inşa eder, işletir ve bu reaktörler aracılığıyla üretilen elektriği satar. Genel olarak, hükümetlerin sabit alım fiyatı üzerinden özel şirketlerle anlaşması gerekmez. Ancak, iki ülke arasında imzalanan Elektrik Satın Alma Anlaşmasına (ESA) göre, Türkiye Elektrik Ticaret ve Taahhüt Şirketi (TETAŞ) toplam üretilecek elektriğin yarısını satın alacaktır (ilk iki reaktörün %70'i ve son iki reaktörün %30'u). Sabit fiyat son reaktörün yapımından başlayarak

15 yıl boyunca 12.35 sent/kilovatsaat (katma değer vergisi hariç) olarak belirlenmiştir. Kalan miktar Akkuyu Nükleer A.Ş tarafından açık enerji piyasasında satılacaktır. Ayrıca sermaye maliyetini telafi edebilmek için, elektrik fiyatını azami 15.33 sent/kilovatsaat olarak belirleme hakkına sahiptir. Geri ödeme süresi olan 15 yıla müteakip herhangi bir sabit fiyat garantisi yoktur. Kalan 45 yıl boyunca, Akkuyu Nükleer A.Ş fiyatı kendisi belirleyecek ve kârın %20'si Türkiye tarafına verilecektir.

Tamamlandıktan sonra, bu reaktörler yılda 35 milyar kilovatsaat elektrik üreteceklerdir. 2017'de, Türkiye'nin toplam elektrik üretimi 295 milyar kilovatsaat olarak gerçekleşmiştir ve resmî tahminlere göre, talep 2023'te yaklaşık 450 milyar kilovatsaat olacaktır. Bugün bu reaktörler faaliyete geçerse, Türkiye'nin toplam elektrik talebinin yaklaşık %10'unu karşılayabilirler. 2023'te, ülkenin toplam elektriğinin %7'sini karşılıyor olacaklardır. İlk reaktörün 2022'de devreye girmesi beklenirken, dört reaktörün de 2025 yılına kadar tamamlanması planlanmaktadır.

Türkiye'nin Akkuyu NGS projesi kararının altında yatan nedenlere baktığımızda ise, dört temel sebep olduğunu görmekteyiz. Birincisi, Akkuyu NGS'in ülkenin yabancı enerji kaynaklarına bağımlılığını azaltacağı düşünülmektedir. İkinci olarak, resmî belgelerde belirtildiği gibi, nükleer enerji, Türkiye'de istihdamı artıracaktır. Bu bağlamda Akkuyu projesinin yaklaşık 37.000 kişiye iş fırsatı yaratması beklenmektedir (inşaatta 20.000, faaliyette 7.000 ve yerel sanayide 10.000). Türkiye'nin kararlarını etkileyen üçüncü önemli faktör ise, nükleer enerjinin sağlayacağı karbon salınım miktarındaki azalma ve bunun bir sonucu olarak artacak çevre güvenliğidir. Son olarak, Akkuyu NGS'in sağlayacağı ekonomik getiriler, Türk yetkililer tarafından çok önemli olarak kabul edilmektedir (15 yılın ardından %20'lik kâr payı). Bu şekilde bakıldığında anlaşma Türkiye için kârlı olarak gözükse de aslında götürüleri getirilerinden fazla olacaktır. Zira Rus hükümeti bu proje ile birlikte Ankara üzerindeki etkisini artıracak bir dış politika aracına sahip olmayı planlamaktadır. Bazı üst düzey Rus yetkililer ve diplomatlar, Akkuyu NGS'nin

avantajlarını kabul etmiş ve bu stratejik yatırıma izin verdikleri için Türk tarafına şükranlarını ifade etmişlerdir. Rosatom ve devlet enerji politikaları göz önüne alındığında resim daha belirgin olarak da ortaya çıkmaktadır.

En nihayetinde, Türkiye'nin nükleer santral elde edebilmek için ciddi tavizler verdiğini söyleyebiliriz. Birincisi, tüm maliyetler Rus tarafı tarafından karşılanmasına rağmen, başlangıçtaki sabit fiyatlar diğer enerji kaynaklarına kıyasla oldukça yüksektir. Bu nedenle, NGS'nin sağladığı elektrik, doğal gaz ve hidroelektrik gibi diğer elektrik üretim kaynaklarının birim fiyatlarından daha pahalı hale gelmektedir. Dolayısıyla, nükleer enerjinin planlanan sabit fiyatları (12.35 sent) doğalgaz fiyatlarından (2-2.4 sent) altı kat daha pahalıdır. Fiyatın yüksekliğinin yanı sıra, kendi toprakları içerisinde üretilen elektriği Türkiye para karşılığı satın alacaktır. Aslında ürettiği elektrik ile enerji ithalatından tasarruf etmeyecektir, elektriği para ile satın almaya devam edecektir. Kısacası, edinilecek tasarruftan tüm santrallerin parasının altı sene içerisinde çıkartılacağı yanlış bir önermedir. Çünkü Türkiye enerji satın almaya devam edeceği için, sabit fiyatla veya değil, herhangi bir tasarruf söz konusu olmayacaktır. Resmî belgelerde bu yönde yapılan açıklamalar ve hesaplamalar oldukça yanıltıcıdır. Ezcümle, dışardan bakıldığında kira ödeyerek evin sahibi olmak gibi görünse de, aradaki en büyük fark Türkiye'nin hiçbir zaman evin asıl sahibi olmayacağıdır.

İkincisi, anlaşmanın Yap-Sahip ol-İşlet modeli üzerinden yapılması Türkiye'yi daha da dezavantajlı bir konuma sokmakta ve aynı zamanda dışa bağımlılığını da körüklemektedir. Rusya, Türkiye toprakları içerisinde elektrik üretecek ve satacak, Türkiye asla reaktörlerin gerçek sahibi olmayacak ve sabit dönemden sonra fiyatları belirleyemeyecektir. Bu bağlamda, Rusya sadece yatırım maliyetini geri almakla kalmayacak, aynı zamanda NGS'leri aracılığıyla daha fazla kar ve etki kazanacaktır. Mevcut durumda özetle; inşaat, bakım, yakıt çevirimi ve kullanımdan kaldırmanın yanı sıra, işletme hakkı da Rus tarafına aittir. Sonuç olarak bu model; Türkiye'nin

bağımlılığını arttırırken, bilgi/teknoloji transferi yapılmayacağı ve işletimi Türkiye'nin olmayacağı için herhangi bir ulusal nükleer teknoloji inisiyatifi söz konusu olamayacaktır.

Üçüncüsü, Rusya'ya nükleer yakıt çevrimi konusunda verilen yetki, Moskova'nın hali hazırda yüksek olan tesis üzerindeki gücünü daha da arttıracaktır. Bu bağlamda, Rusya Federasyonu nükleer yakıt çevirimi ile ilgili herhangi bir sorundan sorumludur. Bu durum, yalnızca reaktörler için nükleer yakıt temin edeceği anlamına gelmemektedir; aynı zamanda yakıt çeviriminin, geri dönüşüm, yeniden işleme imalat, depoloma v.b. gibi diğer işlemlerinden de sorumludur. Buradaki en önemli husus ise, tesisin sahibi Rusya olduğundan dolayı uranyumun nerede ithal edileceği konusunda Türkiye'nin bir söz hakkı olmamasıdır. Sonuç olarak, Türkiye nükleer yakıt tedariki açısından Rusya'ya daha da bağımlı olacaktır. Hangi tür enerji kaynağına (doğalgaz, petrol ya da uranyum) ihtiyaç duyulduğu önemli değildir, ülkenin yabancı bir ülkeye bağımlı olduğu gerçeği devam edecektir.

Söylenmesi gereken son nokta ise, Akkuyu NGS'nin Türkiye'ye getireceği istihdam olanakları ile ilgilidir. Bu tür fırsatların gerçekten ortaya çıkıp çıkmayacağı çok açık değildir. Zira, Türk kaynakları tarafından yayımlanan raporlarda beklenen istihdam rakamlarına ilişkin tutarsızlıklar mevcuttur. Örneğin, Enerji ve Tabii Kaynaklar Bakanlığı tarafından Akkuyu NGS'nin 37.000 kişiye yeni işler sağlayacağı iddia edilirken, Türkiye Atom Enerjisi Kurumu tarafından, inşaat ve işletme dönemlerinde 10.000, daimî olarak ihtiyaç duyacak kişi sayısı için de 4.000 civarında olduğu belirtilmektedir.

Özetle, Akkuyu projesi resmî Türk belgelerinin ortaya koyduğu kadar pozitif bir girişim olarak görünmemektedir. Rusya'nın Akkuyu projesinden elde edeceği faydalar, Türkiye için sağlanan faydaları fazlasıyla aşacaktır. Birincisi, finansal hesaplamalar çoğunlukla yanıltıcı ve yanlıştır. Başka bir deyişle Akkuyu Nükleer

Santrali, elektrik fiyatlarında enerji arz güvenliği veya istikrar getirmeyecektir. İkincisi, Türk resmî makamlarınca verilen istihdam rakamları tutarlı değildir. Üçüncüsü, sözleşme modeli, Türkiye'nin Rusya'ya bağımlılığını artırmaktadır. Dördüncüsü, Akkuyu NGS'in Türkiye için ekonomik hesaplamaların ötesinde maliyetleri olacaktır. Bu nedenle, Rusya Türkiye'deki konumunu güçlendirebilecek ve Türkiye'yi baskı altına alabilecek etkili bir dış politika kozu elde edecektir. Bu koz da şu şekilde kullanılabilir: sabit dönemden sonra elektrik fiyatlarında dalgalanmalara neden olarak, nükleer yakıt çevirimi veya Türkiye'nin ihtiyaç duyduğu elektrik arzı ile ilgili süreçlerde gecikmelere sebebiyet vererek, bakım veya işletme sırasında gecikmelere neden olup dolaylı olarak güvenlik tehditlerine sebebiyet vererek. Her durumda Moskova, Ankara üzerindeki ciddi bir etki kapasitesine sahip olarak ve Türkiye'yi Rusya yanlısı bir çizgide hareket etmeye zorlayabilecektir.

Son tahlilde, Akkuyu projesi bu haliyle, Türkiye'nin dış politika seçeneklerinde egemenliğini yitirmesine ve manevra kabiliyetinin ciddi şekilde sınırlamasına neden olacaktır. Türkiye için bazı olumlu yanlarına rağmen bu proje göründüğü kadar karlı değildir. Türkiye'nin daha da artan enerji ve bilhassa nükleer enerji bağımlılığının, ülkenin dış politikasına sınırlandırmalar getirmesi beklenmektedir.

Bu araştırma sonunda Türkiye'nin, Akkuyu NGS projesinin tamamlanması ile beraber, Rusya ile olan dış politika dinamiklerinde Moskova'nın tahakkümü altına gireceği ortaya çıkmıştır. Bu egemenliğin bir sonucu olarak, Türkiye'nin dış politika seçeneklerinde egemenliğinin azalması ve Türkiye'nin Kremlini memnun etmeyecek adımlar attığında Moskova'dan gelecek baskıyı üzerinde hissetmesi beklenmektedir.

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