Abstract

States pursue nuclear programs for different reasons with different ways, and those differences matter a lot when it comes to proliferation issues. Understanding the dynamics of the nuclear programs any country pursues—which nuclear options are available to that particular state, which strategy that state might select and why, and what the international community can do to about it are some of the critical questions for the Non-Proliferation regime, known as NPT. As a rising power, Turkey’s interests in nuclear area has increased over the years due to growing energy and status needs. Even though it has a very clean nonproliferation record coupled with strong ties with Western countries, Turkey positions itself against any international efforts to constrain states’ rights to the peaceful use of nuclear energy under the NPT, which open the discussion of nuclear latency. Therefore, latency dimension of Turkey’s nuclear activities are critical to the regional and international security. In this sense, understanding Turkey’s quest for nuclear capability, which doesn’t necessarily mean that Turkey pursue acquisition of nuclear weapons, should be systematically analyzed and should be considered as a part of broader dynamics that drives states pursue or not pursue nuclear proliferation. The aim of this paper is to summarize, synthetize, update and contextualize Turkey’s non-proliferation policies and link it to the broader discussion on the nuclear latency.

Keywords: Non-Proliferation, Proliferation, Turkey, NPT, Nuclear Diplomacy
Introduction

Nonproliferation regime, known as Non-Proliferation Treaty (NPT), is under severe pressures even though it is often acknowledged as a successful international regime restraining proliferation risks. There are at least four main sources of stresses for the NPT. The first one stems from the serious proliferation breaches, both horizontally and vertically. Nonetheless, the past proliferation predictions far outnumber the actual proliferations, and in this sense, NPT can be regarded as successful. Only few countries have actually opted for the bomb, India, Pakistan, Israel, North Korea while very few countries, especially Iran, on the verge of making the decision to go for nuclear. However, NPT has gained almost nothing when it comes to nuclear disarmament. Matter of fact, NPT departs from a framework based on three principles: i) nonproliferation for NNWS; ii) reduction and disarmament for NWS; and iii) guaranteed access to civilian nuclear technology and energy development for everyone. These are manifolds parts of the agreement that had reached after complex and contentious negotiations. While keeping and investing billions of dollars on the modernization of the existing nuclear weapons, expecting the rest would hold their part, is simply naïve. Yet, against this odd naivety, NPT still survives. Thus, second greatest pressure on the NPT, on the vertical level, NPT has not managed to achieve long promised nuclear disarmament among the established nuclear states, which is one of the biggest fall back from the NPT. Third one, which is strictly related to the horizontal proliferation, is that there is a growing concern among experts about potential regional proliferation chains as consequences of new proliferators. Among these regional proliferation chain concerns East Asia, where the North Korean nuclearization gaining ground, and Middle East, where Iran’s nuclear ambitions ascending, are the two-fundamental area to focus on. Last but most importantly, there is an increasingly popular guise for nuclear latency among both developed and developing countries alike.

Among these pressures, the latency issue deserves a particular attention. The concern of latent proliferation capability is far larger than actual nuclear proliferation even though there is much less attention to this issue in the literature. The line between horizontal and latent proliferation is sometimes difficult to draw because all steps of the "civil" nuclear energy industry are somehow identical with the nuclear weapon program. Materials, technology, and equipment are the same for these different paths. The link between the spread of civilian nuclear power and the spread of nuclear weapons capability is one of the biggest challenge for the nuclear experts in the upcoming years. Yet, the borderline between civil and military use of nuclear energy evidently exists and it has to be analyzed case by case. Turkey is often listed highly possible emerging nuclear power within the nuclear community of experts. Parallel to this attention, there are numerous studies predicting how and under which conditions Turkey go for nuclear weapons. Yet, almost none has focused on the issue of latency in Turkish context. Matter of fact that it is very unlikely that Turkey voluntarily damage its clean proliferation record and its relations with the rest of the world by pursuing an opaque/open/secret nuclear weapon program. Yet, latency, as a means of hedging against the future security risks, could be a path Turkey would (if ever does) prefer.

Besides focusing the latency gab, this article aims at tackling Turkish case by asking three important questions: how latent Turkey is?; how latent could Turkey be in the short and long run?; and what are the proliferation pressures for Turkey opt for latency (not particularly going nuclear)? To explore the scenarios where Turkey would follow a proliferation towards nuclear latency, the paper has two subsections. In the first section, I will discuss the issue of latency, and some difficulties in the definitions.
In the second part, I address Turkish latency by analyzing technical and political aspects of its nuclear program.

**Nuclear Latency Hazard**

**Defining Latent Nuclear Power**

Latency has been a major factor threatening to undermine strategic equilibrium\(^1\) in many parts of the world and over the years its impact and weight has dramatically increased due to increasing number of latent nuclear power. Latency could be a bargaining chip to extract better relations with an existing superpower.\(^2\) For instance, South Korea threatened to retain unrestricted civil nuclear programs to pressure the USA for enhanced extended deterrence. North Korea has been using its nuclear program for aid and assistance. Libya traded its uranium gas centrifuge program for sanction relief. Latency could also be a deterrent factor for itself. Japan, as the most advanced latent nuclear power, has been operationalizing its latency in terms of nuclear deterrence. Moreover, if nuclear latency is an effective deterrent, countries have a strong incentive to pursue latency in the form of civilian nuclear program. Accordingly, in 1946, the United States was the only nation on earth with nuclear weapons. Perhaps one other nation, the USSR, had the resources, industry, and engineering capacity to construct such devices. Only a few other countries - Canada, Australia, and some of Western Europe - had anywhere near the abilities required to build the bomb. In 1992, forty-eight nations were estimated as having a latent capacity to build nuclear weapons. Today, there are even more nations that have the technical expertise and civilian nuclear reactors that would allow them to quickly construct nuclear weapons if they so desired. Yet, there is no authoritative answer for the number of states having nuclear latency.

From a technical point of view, virtually any industrialized nation today has the technical capability to develop nuclear weapons within several years if the decision to do so were made. Nations already possessing substantial nuclear technology and arms industries could do so in no more than a year or two. Japan is the most talked-about such country, even latency sometimes called as “Japan Model.”\(^3\) Germany, Canada, Australia, Netherlands are some of these latent countries. There is no settled definition of the term and thus no agreement among experts as to the target set, but Brazil, Egypt, Iran, Japan, Saudi Arabia, South Korea, Taiwan and Turkey have all recently been categorised by academics as nuclear hedgers.\(^4\) However, latency as a term is often misused and misjudged by journalists, diplomats, and many scholars as even most sophisticated political science studies on this subject have too often used misleading measures of industrial capability.\(^5\)

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\(^4\) Ibid.

Defining a nuclear capable state is still a vague concept let alone defining nuclear latency. Latent proliferation is considered when a nation-state’s technical expertise and industrial capability to facilitate nuclear energy will pose a serious latent proliferation potential or the inherent capability for applying a commercial nuclear energy program to weapons development and design. However, latency is not opaque proliferation. From a technical point of view, the differences between a civilian use of nuclear technology and nuclear weapon is a theoretical one. Indeed, nuclear technology is mostly a dual use technology. The hardest part of both civilian nuclear program and nuclear weapon program is to produce fissile materials. Therefore, many of studies significantly focus on the technical aspects even though it is actually a techno-political event.

Scot Sagan suggests that nuclear latency question is both exceedingly important and poorly understood. For him too, latency is not just about some technical capability, but rather an amalgam of technical capability and political intend. In a similar sense, Matthew Bunn shows that while the availability of technology and expertise is important to a nuclear weapons program, the available data suggests that states’ decisions on whether to move toward or away from nuclear weapons are more affected by a variety of security, political, and bureaucratic factors. Nevertheless, the literature often focusses on the technical part of the story, thus falling into trap of misperception and misinterpretations. Therefore, studying latency is difficult. It requires both technical expertise on nuclear fuel cycle and advanced political science knowledge about a particular country as it is a result of both technical capabilities and domestic politics and organizational factors.

One of the important models developed by Stephen Meyer list followings as indicators of latency: Mining experience; Uranium; Metallurgists; Steel production; Construction workforce; Chemical engineering; Nitric-Acid; Electric production; Nuclear engineers; Explosives and electronics. Meyer found that thirty-four states held latent capability to build nuclear weapons in 1982. Later, Meyer’s study was updated by Richard Stoll up to 1992. Based on this updated data (and methodology) Stoll argued that forty-eight countries had a latent nuclear weapons capability in 1992. North-Korea, lacking the necessary nitric acid production capability, chemical engineers, and electronic/explosives specialist as measured by domestic automobile and radio/television industry, was not among the listed latent nuclear powers at that time.

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6 Ibid., 80.
9 While Meyer measured indigenous uranium sources, Stoll assumed that all states had Access to nuclear materials, arguing that they were now freely available in the global market place. See Sagan, “Nuclear Latency and Nuclear Proliferation,” 85. Indeed, Nuclear fuel has always been available on the international market for small and medium size nuclear program. Indigenous production of it is not economical unless there is an intent for industrial scale enrichment. See Fitzpatrick, “Nuclear Latency with an Attitude.”
Another well-known indicator set was developed by Jo and Garzke by dropping three of Stoll’s (and Meyer’s) indicators (construction workforce, steel production, and previous mining activity) and adding necessary uranium deposits into the list. Even the Jo and Garzke data set for 2001 showed that North Korea, which has tested its first nuclear weapons in 2006, was not a latent nuclear power, lacking sufficient chemical engineers, nitric acid production capability and explosives specialists according to this study. Even South Africa, which built six nuclear weapons in the 1980s, dismantled the weapons in the 1990s but still maintained from 450 to 600 kg of HEU under IAEA safeguard inspections in 2002, nevertheless coded as a country that is lacked the full capability to build nuclear weapons due to lack of sufficient chemical engineers and nitric acid production capacity.\(^{11}\)

\begin{table}[h]
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\begin{tabular}{|l|l|l|}
\hline
Indicator & Definition of indicators & \textit{Meyer/Stoll} & \textit{Garzke and Jo} \\
\hline
Mining activity & Some fraction of labor force in mining activity & Known uranium deposits (Meyer) & Known uranium deposits or produced uranium already \phantom{a} \\
Uranium deposits & & Assigned market access (Stoll) & \\
Metallurgists & Production of crude steel & Production of crude steel or aluminum & \\
Steel & Production of steel and cement & Production of steel and cement & \\
Construction workforce & & Production of nitric acid or sulfuric acid & \\
Chemical engineers & Production of nitric acid or sulfuric acid & Nitric acid production or sulfuric acid production and nonorganic nitrogemous fertilizer production & Nitric acid production or sulfuric acid production and nonorganic nitrogemous fertilizer production & \\
Nitric acid production capacity & Installed electrical capacity of 200MW & Installed electrical capacity of 200MW & \\
Electricity production capacity & & & \\
Nuclear engineers/ physical/chemicals & Three research reactor years & & Three research reactor years \phantom{a} \\
Electronics/chemical engineers & Manufacture of motor vehicles or assembly of motor vehicles and manufacture of radios or TVs & Manufacture of motor vehicles or assembly of motor vehicles and manufacture of radios or TVs & \\
\hline
\end{tabular}
\caption{Comparison of Meyer/Stoll and Garzke and Jo nuclear latency indicators\(^{12}\)}
\end{table}

By pointing these bizarre results, Sagan suggests that latency is not a measure of nuclear proliferation, therefore, we have to focus on the fissile materials that is needed to make the bomb instead of exaggerating the technical capabilities. The end result is that without a large nuclear reactor to produce plutonium (and a reprocessing facility) or the capability to produce enriched uranium, no state could build its own nuclear weapon. In this sense, the most important latency when it comes to nuclear proliferation should be the question of nuclear power reactors that is large enough to produce fissile materials. That is, to talk about a latency in terms of technical capability, we have to have a fuel-cycle

\(^{10}\) Retrieved from Sagan, “Nuclear Latency and Nuclear Proliferation,” 86.

\(^{11}\) Ibid., 88.

\(^{12}\) Retrieved from Ibid., 87.
program at hand. In addition to this technical dimension of latency, another important question is the proliferation decision, which is taken within certain domestic and international political environment. Thus, latency discussion should not focus on certain technical indicators but also political indicators as well to make more intelligent and accurate prediction on the proliferation issues. Therefore, latency should be considered to be the product of such technical capability and the intent to proceed toward the acquisition of nuclear weapons. Thus, intent becomes of paramount importance in evaluating the latency threat of any technical developments.

**Turkish Case: How Latent is it?**

Turkey has been listed as a latent power under the indicators that produced by both the Meyer/Stoll or Jo and Gartzke. It is also one of the 46 members of the Nuclear Supplier Group even though it is not a nuclear power state, but Turkey’s membership was requested due to its manufacturing capacity for materials of potential use in the nuclear industry. That is, Turkey has been recognized a latent nuclear power. Yet, when it comes to the capability to possess a large nuclear reactor to produce plutonium (a reprocessing facility) or the capability to produce enriched uranium (an enrichment facility), Turkey has not such capability. In this sense, Turkey has far from being a latent nuclear power in terms of technical indicators. Nevertheless, given its contracted nuclear facilities, in the future Turkey could have such capacity even though it could be easily spotted under the NPT’s enhanced safeguards measures of the Additional Protocol, of which is legally Turkey a part. In this sense, not Turkey’s current latency but Turkey’s future latency risk should be discussed.

At the political front, Turkey has been known as a good member of the nonproliferation agenda in the world. Until the early 2010s, Turkey had long faced no serious proliferation pressures given its good relations with neighboring states, belief in alliances with the West and international regimes, desire for EU membership, and preferences for obtaining international prestige through diplomatic leadership. However, Turkey’s international and domestic politics has changed fast, and many of these constrains’ contexts have changed as well. In this changing environment, we have to look at the technical and political indicators that possibly lead a nuclear latency (or in worst case scenario a nuclear proliferation) decision in the country.

**Turkey and Technical Nuclear Proliferation Towards Latency: How latent could it be?**

Turkey’s interests in civilian nuclear technology dates back to 1950s. Turkey was among the first countries signing an Atoms for Peace Agreement with the USA in June 1955. In 1956, Turkey had founded Turkish Atomic Energy (TAEK), under which it has started to conduct very small nuclear fuel cycle research at the Cekmece Nuclear Research and Training Center, where one small research reactors, the TR-2 5MWt reactor, had been established. Over the years, Turkey tried and failed many times to have large industrial scale nuclear power reactors. However, due to a variety of political, diplomatic, and economic reasons, especially because of lacking political and financial stability, Turkey had never moved beyond the research and development stages. Turkey doesn’t still have a nuclear

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13 Fitzpatrick argues that if the physical condition of latency is accompanied by a political intention to have such an option, it is known as nuclear hedging. See Fitzpatrick, “Nuclear Latency with an Attitude.”
reactors or industrial scale enrichment or reprocessing capabilities, which is not a sufficient but a necessary part of nuclear latency in terms of technical capabilities.\textsuperscript{14}

For Turkey, an energy dependent country, building nuclear power plant is economically rational in terms of both decreasing heavy reliance on fossil fuels and heavy reliance on very few countries (Russia and Iran). The country imports 98% of its natural gas and 93% of its oil consumptions, which costs well over 60 billion dollars annually. Given the increasing cost of energy, and increasing discussion on the energy insecurity for Turkey as the country grows, nuclear power plants has emerged as key aspects of country’s alternative energy sources. Turkey would probably produce at least around 10% to 16% percent of its electricity needs from nuclear power plants in the near future. To this end, Turkey has several undergoing nuclear power plant projects.

After 2009, decisive steps have been taken to build nuclear power plants. Matter of fact, Turkey is part of a growing movement of developing and developed states that are pursuing nuclear energy as a way to decrease carbon emissions while also decreasing reliance on unstable foreign energy suppliers. Only in Middle East, without economical rationality that Turkey has, 13 countries have been pursuing a dormant nuclear agenda.

For the first nuclear power project, Turkey has signed an agreement with Russia that a subsidiary of Russia’s state-owned atomic power company Rosatom would build, own, and operate a nuclear power plant at the Akkuyu site.\textsuperscript{15} Matter of fact, the agreement appears to be an economically advantageous deal for Turkey considering the all prices and profits included.\textsuperscript{16} This power plant (consisting of four reactors) has been expected to be partly operational in 2023. The second power plant has been contracted to a Franco-Japanese consortium and is expected to be completed in the 2023. A third power plant is also in line, which is expected to be contracted to a Chinese company.


\textsuperscript{15} As the tension had risen after a Russian jet downed by Turkey, the Project was reportedly arrived a termination point. Yet, a broad rapprochement has been achieved, and the construction has officially statted.

A nuclear power program can be a steppingstone to or a cover-up for a nuclear weapons program; thus, any new nuclear energy program raises potential proliferation questions.\textsuperscript{17} Turkish case is no different. Yet, the most important point here is the fact that, if the all the constructions were finalized as it is stated, Turkey will be the first in the world to rely on foreign vendor to own and operate a nuclear power plant.\textsuperscript{18} Departing from the fact that the nuclear fuel-cycle and nuclear waste management has not clearly addressed in the agreements made by Turkey and foreign vendors, some argue that Turkey has (secret) intentions to maintain the option to run the reactors with its own low enriched uranium,\textsuperscript{19} which is not illegitimate under NPT and technically open Turkey’s path to nuclear fissile materials. A 2014 report on a German website, based on estimates by the German intelligence service, claimed that Turkey was adopting the Iranian model – a civilian nuclear program on the surface, with a military program underneath it, quite literally. Turkey has not single out the option of an indigenous uranium enrichment capacity at lower level as an legitimate right under NPT. However, Turkey is not Iran, or North Korea, and should not be treated as such. Turkey is one of the good behaving NPT members. Turkish then energy minister, Taner Yıldız, had ruled out these claims that Turkey opted for uranium enrichment intention immediately.\textsuperscript{20} Later, Turkey had issued a joint statement with 11 other countries for elimination of Highly Enriched Uranium (HEU) and its replacement. This is an indicator that Ankara has actively pursuing to protect its clean nonproliferation record. Indeed, when we look at the Turkish regulations on nuclear waste management and nuclear

\begin{table}[h]
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\begin{tabular}{|l|c|c|c|c|}
\hline
        & Type              & MWe gross & Start construction & Start operation \\
\hline
Akkuyu 1 & VVER-1200         & 1200      & 2018               & 2023           \\
Akkuyu 2 & VVER-1200         & 1200      & 2019               & 2023           \\
Akkuyu 3 & VVER-1200         & 1200      & 2020               & 2024           \\
Akkuyu 4 & VVER-1200         & 1200      & 2021               & 2025           \\
Sinop 1  & Atmea1            & 1150      & 2017               & 2023           \\
Sinop 2  & Atmea1            & 1150      & 2018               & 2024           \\
Sinop 3  & Atmea1            & 1150      & ?                  & ?              \\
Sinop 4  & Atmea1            & 1150      & ?                  & ?              \\
Igneada 1-4 & AP1000x2, CAP1400x2 & 2x1250, 2x1400 & ?                  & ?              \\
\hline
\end{tabular}
\end{table}

\textsuperscript{17} Nuclear renesaince subnet udum
\textsuperscript{18} This is a direct result of financing model of “Build, Operate and Own” that Turkey increasingly rely on for many other big infrastructure Project as well. This financing model requires that the nuclear vendor provides financing for the construction of the reactor and operates it for the life of the power plant, in return for a Turkish state-owned electricity utility guaranteeing a purchase price for an agreed amount of electricity produced at the plant. If it goes well, it would be replicated in other countries too.
fuel procurement, these issues may be left for further negotiation due to attached financial costs, yet it is explicitly stated that these issues are the responsibility of the operating companies, that are foreign owned companies. The agreement made by Russia also provides for Russia and Turkey to cooperate in other areas of the nuclear fuel cycle including the treatment of used nuclear fuel and radioactive waste, decommissioning and the possible construction of a Turkish nuclear fuel fabrication plant. Yet, the finalized agreement and Russian code of conduct in the fuel-cycle and nuclear power plant establishment clearly reveals that Russian side is the owner of the nuclear fuels while Turkey has almost no authority in usage of the spent fuel. For the Sinop power plant, Turkey has searched for cooperation in the areas of the nuclear fuel cycle including the treatment of used nuclear fuel and radioactive waste. For this project, the French side has the responsibility for both fuel and waste management. This is important because, under the BOB financing and operating model, if Turkey were decided to use these reactors to proliferate, it would first have to kick out the foreign operator and then separate the foreign-owned spent fuel stored on site, before fashioning a crude implosion bomb, which is not feasible. Therefore, it is clear that Turkey will not be able to have any enrichment activities in the short and medium term for its projected nuclear power plants.

Why then, has Turkey deliberately left open an indigenous enrichment option? Here, we have noted that Turkey profoundly emphasize the right to enrichment under the NPT. The Turkish policy regarding Iran sanctions is a microcosm for Turkish nuclear diplomacy. Turkey has accepted and implemented multilateral sanction regime of the UNSC, while has refused to obey by the American and European sanctions not just because they were very harmful its economy but also the West’s demand that Iran halt enrichment as a clear violation of Iran’s right under the NPT to pursue nuclear activities. Under Article IV of the NPT, every signatory has the right to pursue peaceful nuclear activities and the nuclear supplier countries are obligated to facilitate the exchange of nuclear technology and material. In recent years, the Turkish interpretation of Article IV has been a source of friction between Turkey and some of its Western allies, especially when it comes to international efforts to limit nuclear-aspirant countries from accessing enrichment and reprocessing technologies. Turkish official views of these efforts as a threat to Turkey’s own nuclear ambitions and have challenged proposals designed to make it harder for a state to access nuclear technologies. Turkey’s nuclear diplomacy is influenced strongly by the fact that it is a non-nuclear weapons state seeking to develop an indigenous nuclear energy program. Ankara has positioned itself as a champion of nonproliferation, while maintaining a strict interpretation of Article IV of the NPT. Turkish interpretation of the right to develop civilian nuclear energy should be evaluated within the Turkish context, which is very different from many other countries.

From a proliferation stand point, the process of enrichment technologies for reactors can be applied to nuclear weapons purpose. That is, if a country has ability to enrich uranium to reactor level (low-level enrichment) that country can level up its uranium stockpile to weapons grade (high level enrichment) within relatively small amount of time, which gives a country latency in technical point of view. The key point is here that whether the country that has processing capabilities obey by the rules of the international nonproliferation mechanisms. That is, whether the country has the political will to be full-fledged latency. Departing from this fact, Turkey has not announced any plans to pursue

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23 Ibid., 14.
24 Security Dimensions of the Turkey Nuclear Program
enrichment or reprocessing, on the contrary, by the nature of its existing operation and finance model for its projected power plants and by the nature of its commitment to nonproliferation regime, it has shown good-practices.

Turkish authorities are working to rewrite the country’s current nuclear legislation and regulations, in order to strengthen the state’s capacity to oversee and safely manage the generation of nuclear power. Meantime, in May 2008 a civilian nuclear cooperation agreement with the USA entered into force, and in June 2010 a nuclear cooperation agreement with South Korea was signed, and in April 2012 two such agreements with China were also signed. In addition to these bilateral cooperation agreements in the field of peaceful use of nuclear energy, Turkey is a party of full range of international instruments related to nuclear safety, watchdog and security. The biggest fallback is on the human-resources as the country still lack indigenous expertise on the issue of nuclear energy. The ongoing constructions and cooperation agreements will boost Turkish human resource in the nuclear expertise. Turkey may also face difficulties developing a singular and focused nuclear energy industry, largely because financing concerns have prompted the government to make disparate decisions about reactors. Thus, Turkish technicians trained as part of the program to operate Akkuyu will not have transferable skills for Sinop plant and vice versa.

Turkey has also advanced its immature missile technology and currently it is able to produce short range missiles (up to 300 km). Yet, on this front Turkey is far from an advanced missile know-how to support a full-fledged latency claims. When it comes to launching capacity, Turkish government has signed an agreement with the Turkish company Roketsan to build a satellite launching center, which at the end of the day could provide an important step forward for Turkey in developing long range ballistic missiles. Turkey plans to launch some 33 satellites of various types and acquire an independent launching capability by 2033. In many cases a space program and missile technology are indications that the state in question endeavors to acquire a military nuclear capability. Turkish insisted on the technology transfer in ballistic missile defense procurement has been also listed as an important indicator of Turkish intent of technical capacity building. Yet, there is no urgent need for becoming suspicious about since Turkey has been very open and clear about its capabilities and procurement procedures. Many of these attempts are technological advances that many of the European countries has achieved some 50 years ago. In Turkish context, where there is real threat stemming from neighboring countries (even not state actors) increasing missiles, Turkish security planners felt that they have to rely on their own missiles defense capabilities. Given the certain difficulties to acquire such capabilities under the NATO umbrella and past hesitancies from many NATO allies once Turkey requested such protection, Turkey has understandable concerns of security. In such situation with technical constrains, Turkey looks for know-how transfer as well as quick solutions for its immediate security needs. To offset these, Turkey cooperates with Russia on its immediate missile defense needs, which doesn’t necessarily mean that Turkey is drifting away from the West. To aspiring self-sufficiency to provide country energy and security need should not be characterized as bad intends as long as Turkey stay open and cooperative. While many European countries with none of the real or

25 So far very little cooperation has occurred. See Varnum, “Closing the Nuclear Trapdoor in the U.S.-Turkey Model Partnership.”
virtual threat Turkey has been facing well over several decades having those capabilities Turkey aspiring for, Turkey should not be treated in a way that at every steps towards its own security and prosperity it takes, it should also time and again prove that its intentions are good. It should be noted that Turkey has been a member of many other arms control and nonproliferation agreements including the MTCR (Missile Technology Control Regime) and the HCOC (Hague Code of Conduct against Ballistic Missile Proliferation. Moreover, its both procurement and finance is transparent, it complies with all IAEA and European safety and security measures in these area as well. Again, Turkey is not Iran or North Korea, and it should not be treated as such.

Briefly, Turkey’s recent interests and efforts to develop nuclear energy along with its indigenous capabilities such is sometimes characterized as the first step towards nuclear latency. Current Turkish civil energy plans are completely related to economical needs of the country. In the current situation, Turkey does not have the necessary infrastructure to produce fissile materials for a nuclear weapon, nor it does the relevant infrastructure to mine uranium, enrich uranium, or reprocess spent fuel. It won’t be capable of these in the near and medium term. Almost all of its indigenous capabilities such as short and medium range missiles, missiles defense, small space program, are all driven by its security needs. Therefore, when all things considered, Turkey’s latency in technical area would be increasing, yet that increase cannot be predicted as potent enough for a dangerous latency potential in terms of a nuclear weapon program in the short term without a serious change in international and domestic politics.

**Turkey’s Political Proliferation Towards Latency**

To answer the question of whether Turkey move towards or away from nuclear proliferation in terms of latency at the political front, the most important factors that have to be analyzed are proliferation pressures. As proliferation pressures decrease and increase, so does Turkey’s propensity to pursue nuclear latency or nuclear weapons. In this sense, there are at least four proliferation pressures for Turkey: i) the regional proliferation chains; ii) Evolving external threats and sudden shocks; iii) Slowly eroding alliances; iv) Changing internal dynamics. All of these could force Turkey for nuclear hedging, if not for real nuclear proliferation.

**The Regional Proliferation chains:**

In this front Iran is the most obvious case. Iran is high salience, meaning that its nuclear decision will resonate widely in the region and even beyond. One of those effected country from Iran’s nuclearization would obviously be Turkey, along with Saudi Arabia, Bahrein and Egypt. There are number of studies that foresee a Turkish nuclear proliferation in case of an Iranian nuclear weapon. Although Iran’s nuclear program has temporarily stopped with JCPOA, Iran’s advancing nuclear infrastructure has still remains as potentially triggering a regional proliferation chain, where other countries opts for similar capabilities. Currently, Iran is the only country that is very closed to be labeled as latent nuclear power in the region. Saudi Arabia comes first among those who cannot afford

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28 Stein, “Is Turkey Going Nuclear?”
the threat of regional rival armed with (virtual) nuclear weapons. Turkey is also one of the mentioned
country within nuclear community of experts. Against a latent nuclear power Iran, logically these
countries could pursue the same sorts of the capabilities. In the Middle East and North Africa, Gulf
states including UAE, Saudi Arabia, Qatar & Kuwait, Yemen, Israel, Syria, Jordan, Egypt, Tunisia, Libya,
Algeria, Morocco, Sudan have planned nuclear power plants. Probably, one of the reason that explains
the increasing interest in the nuclear power in the region is the proliferation of latency that triggered
by the Iran’s nuclear program.

Turkey has indeed a growing concern about Iran’s increasing empowerment in the region, as the two
are on a collision course in Syria and Iraq. Given historical geopolitical competition and rivalry, the
recent increase in friction between two countries has the potential for putting Turkey thinking the
worst option when it comes to Iranian nuclear proliferation. Yet, since the Syrian War has started in
2011, the developments have showed us that Iran and Turkey have managed to keep differences at
the sub-strategic level by retaining a deepening economic ties and open state-to-state channels. This
can only be change if (ever) NATO security guarantee weakens. Especially, the nuclear weapons that
deployed in Turkey under NATO alliance shapes Ankara’s approach to security including Iranian nuclear
threat in the future. In the current diminishing trust in the USA and NATO umbrella, Turkey would be
in a hard and rock place for making the decision on the nuclear weapons. In this sense, the discussion
on the removal of the nuclear weapons the United States keeps at Incirlik Air Base will resonate in
Ankara rather dauntly. In fact, these tactical nuclear weapons in Turkey has little military value or
purpose as there is no permanent nuclear capable US fighter wings stationed in the air base and Turkey
has no authority or capability use them alone. There is an assumption that if the weapons were
removed, Turkey’s status in NATO would be negatively affected. The weapons are not only for
deterrence but have a number of political implications and have come to symbolize the United States’
commitment to Turkey’s defense. Therefore, their political significance is vital and Iran nuclear
program complicate the issue. An Iranian nuclear capability could spark an arms race in the Middle
East and bring about a “proliferation cascade,” which could cause Turkey to reconsider its nuclear
options—especially if the United States pulls its nuclear weapons from Incirlik. When asked directly
about its response to an Iranian nuclear weapon, a high-ranking Foreign Ministry official said that
Turkey would immediately arm itself with a bomb. This isn't Ankara’s official policy, but it seems to
indicate a general feeling among its leaders. In the absent of nuclear deterrence, a nuclear capable
Iran significantly affect Turkish proliferation policy and Turkey would probably to take steps in pursuing
a more robust and deepening scientific expertise and nuclear infrastructure for nuclear hedging to
Balance the Iranian threshold status. In this sense, ties to NATO and the US are deeply significantly
valued by Turkey even though there are some contrary claims appear here and there.

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32 Stein, “Is Turkey Going Nuclear?”
33 Mark Fitzpatrick, “Removing Nuclear Weapons from Turkey,” Survival 58, no. 5 (September 2, 2016): 53–58,
doi:10.1080/00396338.2016.1231529; Georgi Gotev, “US Moves Nuclear Weapons from Turkey to Romania,”
weapons-from-turkey-to-romania/; Dan Lamothe, “The U.S. Stores Nuclear Weapons in Turkey. Is That Such a
Good Idea?,” Washington Post, July 19, 2016, sec. Checkpoint,
https://www.washingtonpost.com/news/checkpoint/wp/2016/07/19/an-old-nuclear-weapons-deal-raises-
new-questions-about-u-s-bombs-in-turkey/.
34 Sinan Ulgen, Turkey and the bomb p 12.
Evolving External Threats

The general hypothesis assuming that a big, revolutionary decision, must occur before a state develops nuclear weapon is wrong. Leaders generally pursue an option, hedging for future uncertainties, rather than a weapon project, which may facilitate a later political decision to acquire nuclear weapons.

Turkey has numbers of hot spot in its immediate geography where the country looks for a nuclear deterrence. External threats to Turkey, for a long time, stems from non-state violent arms groups, terror networks. PKK terrorism, and Kurdish state emerged out of the chaos in neighboring countries are the existential threat to Turkey, yet these don’t require a nuclear deterrent as Turkey's advanced conventional capacities is potent enough. Indeed, since the end of the Cold War, Turkey has increased its development and procurement of advanced precision strike weapons. However, menacing southern and eastern borders with increasing threat threshold may force Turkey to take alternative decision in the long term. Especially this is true when it comes to increasing missile threat. Turkey first became truly concerned with the proliferation of ballistic missiles during the Iraq-Iran war in 1980s. Currently, all neighbors at the Eastern and Southern borders are known to have pursued the militarization, acquisition of massive conventional weapons, proliferation of missiles, and even WMDs. Even though Israel is the only state that have not signed NPT, Israel, Algeria, Sudan, and Israel have not signed the Biological Weapons Convention, and Egypt and Syria have thus far refused to sign the Chemical Weapons Convention. Iran is pushing ahead with its nuclear and missile programs. No state in the region is a formal member of the Missile Technology Control Regime, and many states in the region are known to have pursued nonconventional weapons in the past. Moreover, not just states but also violent non-state actors armed with advanced weapons and missiles pose great danger for Turkey. Turkey had been under constant missile fire from ISIS for months, now it is under the threat of missiles from PKK/PYD in Syrian territory. In this sense, missile defense system is one important title in this area.

Black sea and changing security dynamics in the Black Sea area is important also. Russia could be the only country that threatens Turkey with nuclear retaliation. Russia has increased its nuclear and conventional capabilities with a sophisticated modernization program. Yet, Russian build-up historically and traditionally not aimed at Turkey. Furthermore, given Turkey’s dependence on Russia for energy and trade, Turkey has strong incentives to maintain positive relations with Russia. However, since the annexation of Crimea, the row balance of power has dramatically changed in the Black Sea. With increasing tension between Russia and NATO, Russian new nuclear weapons, especially, tactical and permanent deployments, would be concern matter for Turkey. In the absence of the nuclear deterrence, Turkey would opt for a nuclear hedging or for a minimal nuclear deterrence on its own.

Weakening extended deterrence and assurance

The USA extended deterrence, the status of the nuclear deterrence that has been provided for Turkey under NATO umbrella, changing relations with the USA, and increasing anti Americanism in Turkey are some of the titles in this sense.

The role of the US/NATO extended deterrence is vital since NATO membership formed the cornerstone of the Turkish security to a degree that it is an integral part of the security establishment. Thus, enhancement of the US/NATO extended deterrence is required in order to reassure Turkey in the fast
deteriorating security environment. However, recent occurring and rising untrustworthiness of the USA (and some other NATO allies), the credibility of the extended deterrence provided by US/NATO has diminished. The crisis in Syria has placed tremendous strain on the US-Turkey relations over the several years. Given the uneasy situation at the strategic level and opposing views on the priorities, Turkey’s belief in the US’s resolve in the security of Turkey has been its lowest level since the Johnson Letter incident in 1964. Especially the US’s decision to transfer heavy weapons to the Kurdish groups in Syria, who has clear ties to the PKK, which is a designated terror organization by Turkey, the US and EU alike. Moreover, the US indifference against the Fetullah Gulen, who is the mastermind behind the attempted coup on July 15, 2016 in Turkey, and refusal to take legal action against the men and his group activities cause huge sensitivity in Turkey. As result of these developments, Turkish people perceive the United States as the number one country that poses threat to Turkey.\(^{37}\) Turkey’s relations with other key NATO allies, such as Germany, has also drifted into abyss since the coup-attempt and following purge in Turkey. EU has been seen a major proliferation constrain\(^{38}\), yet the EU-Turkey relationship has been at an impasse for years without no sign of improvement possibilities. Turkey is also remarkably less enthusiastic about the EU in the recent years, amid given high tensions between the country and the bloc. Moreover, the greatest proliferation constrains for the military has always been its robust ties with the West. Eroding US credibility as well as the increasingly louder discussion on whether the US nuclear weapons should continue to be stationed in Turkey and calls to remove them from Turkey is therefore a possible proliferation pressure for military strategic planners as well as politicians.

A disenchantment with the EU and decision to not join would push policy makers to contemplate alliances elsewhere that may include an increased emphasis on hard power. Turkey’s guest for closer relations with Russia, China, and many other nations seems to be hedging options in this sense. Sebnem Udum, highly regarded expert in the proliferation issue, once warned that “Should the Turkish public lose faith in Turkey’s alliances, or if the public becomes highly concerned about national unity and territorial integrity, then Turkey’s domestic political situation could be a variable in a nuclear weapons decision.”\(^{39}\)

However, still extended deterrence provided by the US/NATO, and EU as an institution still remain as the most important proliferation constrains for Turkey.

**Changing Internal Political Dynamics**

The debate over nuclear energy in Turkey is robust and inexorably entwined with domestic politics.\(^{40}\) The necessity and relevance of the nuclear power to Turkey has been bring forward by different Turkish governments since the 1980s. Government, energy and business e’lites, and civil society (including unions and academics) often promote nuclear energy as a cheap, environmental friendly and sustainable source. Despite some few experts who promote nuclear option as a hedging strategy within a security discourse,\(^{41}\) or see the issue in terms of status and prestige, nuclear energy has been


\(^{39}\) Nuclear renesaince Sebnem udum

\(^{40}\) Nuclear renesaince Sebnem udum.

\(^{41}\) Nuclear renesaince Sebnem Udum.
taken as an energy issue, at most as an energy security issue, rather than a direct security issue let alone a problem of regime survival in Turkish context. Yet, the main problem with the discourse of the nuclear option is that they generally portray nuclear power as the single option to provide for energy security for the country. In this sense, the economic logic and socio-politico-physiological intents are often hard to separate among the nuclear pro constituencies in Turkey. It should be underlined that the only calls for a nuclear weapon capability have come from a few stray voices in media who argue that Turkey should establish a nuclear energy program because it may provide a future “nuclear option” in the face of “unreliable allies” and regional proliferation.

Constituencies that support nuclear power in Turkey comprise certain political parties (including the Nationalist Action Party, the Motherland Party, and the True Path Party), business e’ites (the Turkish Industrialists’ and Businessmen’s Association), clubs (Union of Chambers and Commodity Exchanges of Turkey, the Physics Engineers’ Chamber), trade unions (the Turkish Confederation of Employer Associations), and academics (several physicists and nuclear and mechanical engineers, primarily from Hacettepe University, Middle East Technical University, and Bosphorus University).

Military’s support is necessary, not sufficient in the current environment. Another body that is the National Security Council, which is under civilian control since 2008. Turkey has also substantial civilian entities, many of which directly controlled by the office of prime ministry, (an would be under Presidential oversight once the office of Prime Ministry abolished) with nuclear expertise. Science and Technology Supreme Board, National Nuclear Technology Development Program, Turkish Atomic Energy are some of these state entities. A nuclear decision would require active involvement of these bodies, and in Turkey these bodies are whole civilian entities. In this sense, a military decision that are generally lead an opaque proliferation is not possible in Turkey. Therefore, it would be a civilian decision that would stay under NPT restrictions. One important backslide is the fact that traditionally Media, Private sector and general public have not significant role in national security decisions.

In legally speaking, a nuclear weapons program would require the acquiescence of Turkey’s Prime Minister and Turkish General Assembly (TBMM) and the President’s consent. Turkish military could play a decisive role in the past. Yet, in the current Turkish politics, the President is the most probably candidate that can make the decision. That doesn’t mean that he could make such decision alone. Yet, compare to the past, the President has more power in taking such decision. Proliferation decision making in Turkey ought to be viewed as a consensual process while not all players are equally influential, none can individually control outcomes.

Solingen’s domestic political survival model argues that leaders of internationalizing domestic coalitions have incentives to avoid the political, economic, reputational, and opportunity costs of acquiring nuclear weapons. Sollingen’s linkage of proliferation tendencies with inward-oriented regimes is unsurprisingly not only from a political economy stand point but also because such regimes typically embrace the kind of oppositional nationalism that batches nuclear weapons acquisition in a positive light. Indian and Iranian case for proof of the rally-around-flag effect of a nuclear program in societies both fiercely proud of themselves and starkly at odds with the rest of the world. When it comes to Turkey, current government under the AKP (Justice and Development Party) nor Turkey’s military, favored inward oriented political survival models. They have embraced economic and political liberalization. They face strong material disincentives to pursue nuclear weapons because their prosperity depends on Turkey’s continued good-citizen status. Turkey is therefore likely to continue to pursue a prestige multilaterally, constraining it from pursuing nuclear weapons.
Conclusion

History has shown that states willing to commit resources and time can overcome the technical obstacles and successfully develop first generation nuclear weapons. The decision to pursue nuclear weapons is rooted in technical capability combined with decision maker intent. In a similar sense, going latency, not explicitly implementing a nuclear weapons development program but rather employing all the necessary scientific and technical capacity, is also a techno-politico decisions. Thus to answer whether a country pursue a path towards latency should be analyzed both technical potential and political intents.

Officials in Ankara have worked hard to strike a balance between stringent nonproliferation policy with the indigenous right of all non-nuclear states to access peaceful nuclear technology. Despite the increased attention Turkey’s policy positions vis-à-vis the Iranian nuclear program, tactical nuclear weapons, and missile defenses are still not widely understood by the global community, prompting pundits and analysts to misinterpret Turkish nonproliferation policy. This has even led some to openly speculate about Turkey’s secret nuclear intentions and whether or not Ankara may be tempted to pursue its own nuclear weapons program.42

From a technical point of view, lacking a home-grown fuel cycle and enrichment capacity, Turkey doesn’t have the technical latency. Due to the distinct operation and financing model of its projected nuclear power plants, it won’t be able to have that capacities in the near future either. Yet, here at least two factors would strictly constrain such intent, even make it impossible. The first one is technical and legal constrains stemming from NPT, and Additional Protocol and restrictive side control of the nuclear materials. Turkey has been long a good citizen of the nonproliferation community abiding by the rules and norms in this area. Turkey is also part of almost every nonproliferation agreements and initiatives. It is fair to say that Turkey is not going to leave from this posture easily. Secondly, a Turkish decision to proliferate would seriously complicate its international standing, undermine its economic resurgence and seriously damage relations with the rest of the World (not just only its traditional allies in the West, but also in its region as well.) Furthermore, Turkey’s hugely prioritize its economic well-being and development. Thus, a decision of pursuing an illegitimate and dangerously destabilizing and economically destroying nuclear weapon program would be political suicide for Turkey. A violation by Ankara of its treaty commitments would entail isolation at best, which is unaffordable for a country that defines its national security, political, and economic interests through alliances and cooperation. Besides these technical and political constrains it should be noted that Turkey’s status as a non-nuclear weapon state is supported by three pillars: its military security; its commitments to international nonproliferation organizations and multilateral regimes; and the norm of non-nuclear weapon status, which has become a security asset rather than deficiency as the nonproliferation regime evolved.43 Even there are certain elements that raised the possibility for Turkey going nuclear has increased, Turkish nonproliferation policy remarkably remained consistent and transparent and incorporative with the existing oversight mechanism.

Current Turkish interest in nuclear energy is a rational economic decision. Economically rational, politically inclusive and technically transparent peaceful nuclear energy pursuit should not be

42 Security dimension of Turkey Nuclear Program
43 Nuclear renesaince Sebnem udum
misunderstood and misinterpreted by the international community. Although a latent nuclear capability may arise through a domestic nuclear energy program, Turkey is unlikely to take advantage of that under the current internal and external political environment. Turkey’s current nuclear strategy with regard to nuclear weapons cannot be characterized as working to keep nuclear option open, let alone the actual decision to go nuclear.