Saudi Arabia: Walking the Nuclear Path

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In recent years, Saudi Arabia has experienced seminal changes in the social, economic, political, and military realms. Together, these changes constitute a major top-down revolution that is likely to have an impact on the entire Middle East.[1] Within this framework, a long term plan is taking shape, intended to reorganize the kingdom's energy production means to meet internal needs. This change is justified in principle by the fact that approximately one third of the kingdom's current internal energy consumption is based on carbon fuels, which could generate profit if exported, or constitute important reserves for future use.[2]

Some of the generated energy will be renewable natural energy, such as sun and wind-based energy. Another portion will be supplied by nuclear energy, which is expected to generate approximately one fifth of the kingdom's energy consumption by the year 2040. A nuclear program was considered by Saudi Arabia years ago, but the 2015 JCPOA agreement between the world powers and Iran, which provides Iran with future benefits and unprecedented privileges, provided Saudi Arabia with a tailwind to advance a full spectrum nuclear program. While publicly supporting the nuclear agreement with Iran, Saudi Arabia had serious reservations about the agreement, which gave international legitimacy to Iran's status as a nuclear threshold state. In May 2018, Saudi Arabia joined Israel and the United Arab Emirates in expressing its support for the United States' withdrawal from the agreement, as in its eyes, the agreement only intensified Iran's regional appetite without terminating its long term aspirations in the nuclear realm. In response to the development of the Iranian nuclear program and out of considerations of prestige and mounting energy needs,

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the kingdom has, in recent years, begun examining the nuclear path with the aim of leaving itself with as many options as possible.

Background

Saudi Arabia first announced its nuclear program in 2006 at the annual summit of the Gulf Cooperation Council (GCC), and later declared its intentions to build 16 nuclear reactors at an estimated total cost of $100 billion.[3] To this end, Riyadh signed a series of agreements for nuclear cooperation and received proposals from companies in the United States, China, Russia, France, and South Korea for the construction of the first two nuclear reactors, which are expected to be operational toward the end of the coming decade at one of the two proposed sites – either Umm Huwayd or Khor Duweihin on the Gulf coast.

At the same time, the rhetoric surrounding the issue changed when Riyadh began linking what Iran received under the nuclear agreement to what, in its view, it deserves. In reference to the conditions of the deal struck with Iran, former Saudi intelligence chief Turki al-Faisal has said that Riyadh needs to demand "equal rights for everybody."[4] Following the achievement of the JCPOA, senior Saudi officials heightened their rhetoric on the issue. During his visit to the United States in the spring of 2018, Saudi Crown Prince Mohammad bin Salman declared: "Saudi Arabia does not want to acquire any nuclear bomb. But without a doubt, if Iran developed a nuclear bomb, we will follow suit, as soon as possible."[5] Such statements make it difficult for Saudi Arabia to assuage concerns regarding its possible future military intentions or to emphasize the civilian aspects of its program.

"The Gold Standard"

Saudi-US negotiations for civilian nuclear cooperation resumed in 2018. The issue was deadlocked since 2012 due to the kingdom's refusal to renounce "its right" to enrich uranium and reprocess plutonium (in other words, to work on the nuclear fuel cycle), as well as the Obama administration's insistence on not permitting this measure, in order to avoid further nuclear proliferation. Reports have emerged, however, indicating that the Trump administration is now considering changing the approach and permitting uranium enrichment in Saudi Arabia under certain limitations, as part of the agreement, subject to the approval of Congress.

With the aim of limiting nuclear activity to peaceful purposes, the Nuclear Non-Proliferation Treaty (NPT) was enacted to restrict military nuclear programs to five states. Other states are entitled to work on the nuclear fuel cycle as part of a civilian nuclear program and maintain an independent program for the production of reactor fuel, but are required to limit themselves to energy production, medical products, and other civilian goals. The problem, however, is that the technology in question is "dual-use," and by misusing this right, can also be used to produce fissile material for a nuclear bomb.

The United States has therefore limited the civilian nuclear programs with which it has partnered, and does not permit the states it assists in the nuclear realm to enrich uranium itself and/or to produce plutonium from irradiated fuel in its reactors. This was the arrangement with the United Arab Emirates in 2009, establishing the "Gold Standard" of civilian nuclear programs.[6] The UAE is expected to be the first Arab country to operate a sustainable civilian nuclear program (in spring of 2018 construction was completed by a South Korean company on the first of four reactors in its territory).

The roots of Saudi Arabia's interest in nuclear technology for civilian use first emerged in the 1970s. The Saudis failed in their attempts to advance the construction of a joint reactor with Kuwait and Qatar (1978) and made due with the establishment of a nuclear research institute some ten years later. At approximately the same time, the kingdom began monitoring seismic activity in an effort to identify sites suitable for a nuclear reactor that could both desalinate water and generate electricity. Motivations for these initial steps included Iraq's efforts in the nuclear realm, the desire to increase nuclear cooperation between the Gulf states, and steep oil prices. In any event, no additional steps were taken beyond this point, and the subsequent delays were likely related to the 1979 nuclear accident at Three Mile Island, the Chernobyl accident in 1986, and perhaps the Israeli attack on the Iraqi reactor in 1981.[7]

> A failure by Saudi Arabia to develop alternative energy sources has serious implications, and if the situation continues, the country would become an oil importer in the foreseeable future.

Although Saudi Arabia concluded an agreement with the International Atomic Energy Agency (IAEA) in 2009, it signed – despite the requests of the United States – a previous version of the Small Quantity Protocol (SQP), which limits the IAEA's scope of inspection. The original SQP contains a

number of weak points, such as the IAEA's inability to conduct verification measures to confirm that the country in question meets the suitability criteria, and the fact that the country is not required to provide the IAEA with an initial report on the inventory of nuclear materials at its disposal.[8] Beyond its failure to sign the comprehensive supervisory agreement, Saudi Arabia has likewise not signed the Additional Protocol, which allows for stricter inspections. Nor has it signed the Comprehensive Nuclear Test Ban Treaty, though it has consistently supported the establishment of a nuclear weapons-free zone in the Middle East.[9] These signs may signal that Saudi Arabia is leaving the nuclear door open for possible future nuclear endeavors.

In recent years, the kingdom has begun preparations for the development of nuclear energy for electricity production and water desalination, and has expanded its efforts to solidify its knowledge in this field. The most prominent milestone thus far is the establishment in 2010 of King Abdullah City for Atomic and Renewable Energy (K.A. CARE), which is responsible for the coordination of nuclear policy issues, legislation, and research.[10] As in the case of the United Arab Emirates, Saudi Arabia's work on nuclear technology was aided by substantial financial resources, the absence of environmental or political opposition, and the vast unsettled areas of land that are available for the construction of nuclear facilities and the burying of nuclear waste, if such a need arises.

Nuclear energy is attractive for Saudi Arabia for a number of reasons. The first is water desalination. Most of the kingdom's drinking water is desalinated water, and in the long term the use of nuclear energy to fuel the desalination process is cheaper than oil. In addition, Saudi Arabia regularly issues statements and information regarding its increasing energy needs, apparently as a means of justifying development of its nuclear program and emphasizing its non-military attributes.[11] The demand stems from a variety of factors, including population growth; the need to expand the industrial sector; high energy consumption by air conditioning, primarily in the summer months; and subsidized energy prices. In addition, there is the desire for an alternative energy source as a means of protecting the kingdom's oil and saving it for export. The implications of the failure to develop these sources are serious. If the situation were to remain one of "business as usual," Saudi Arabia would become an oil importer in the foreseeable future.[12]

US-Saudi Cooperation in the Nuclear Realm

President Trump, interested in strengthening relations with Saudi Arabia and mindful of the interests of the US nuclear industry, seeks to reach a nuclear cooperation agreement with the kingdom. In 2008, in the course of the visit by then-President George Bush to Riyadh, Saudi Arabia signed a memorandum of understanding with the United States that stipulated that the US would assist Saudi Arabia in developing nuclear capabilities for the purposes of medicine, industry, and energy production. On this occasion, the US State Department noted that "Saudi Arabia has stated its intent to rely on international markets for nuclear fuel and to not pursue sensitive nuclear technologies, which stands in direct contrast to the actions of Iran."[13]

Saudi Arabia's subsequent statements, which refer to "its right" to enrich uranium, appear to contradict this assessment. According to Gary Samore, formerly the senior White House official working on arms control, the Obama administration pressed "them to agree not to pursue a civilian fuel cycle," but the Saudis refused.[14] Members of the Obama administration had previously encouraged nuclear cooperation with Saudi Arabia, even at the cost of less stringent nonproliferation conditions, in order to avoid leaving the nuclear industry at a disadvantage. However, these contacts were suspended due to the kingdom's refusal to accept the Obama administration's conditions.

Saudi aspirations make it one of the largest potential nuclear markets and constitute an important consideration for the US administration. In this context, Thomas Countryman, former US Assistant Secretary of State for international security and nonproliferation, explained that he was "confident that any civil nuclear cooperation" between the United States and Saudi Arabia "would not in any way contribute" to a military nuclear capacity.[15] Since the United Arab Emirates signed the 123 Agreement,[16] the US has insisted that the "Gold Standard" serve as a model for nuclear cooperation with other countries. It now seems that the delays in cooperation between Saudi Arabia and the United States are gradually easing. While Saudi Arabia still asserts "its right" to enrich uranium based on the legitimacy Iran has received, it appears actually to be the US administration that is willing to moderate its position on the matter.

The Iranian Threat and a Military Track

The possibility that the Saudi civilian nuclear program, which is currently in its infancy, will serve as a cover for or the preliminary phase of a military

nuclear program cannot be ruled out: by its very nature, the dual-use technology required for peaceful purposes eases the armament process. In addition, the expertise required for a civilian nuclear program will expand the general knowledge that can be used in efforts in the nuclear realm. These two factors decrease the anticipated costs of a military nuclear program. Other motivations for the development of nuclear weapons include the symbolism of progress and the technological achievement, as well as enhancement of national prestige and identity.[17] Given the history of Saudi Arabia, including the secret purchase of Chinese surface-to-surface missiles in the late 1980s (and possibly also later)[18] and the extensive financial aid for the Pakistani nuclear program, Israel must undertake a closer examination of the Saudi motivations in the nuclear realm.

A nuclear program would provide the kingdom with a number of achievements. First, the desired prestige that accompanies such technological accomplishments would place Saudi Arabia not only alongside Iran, but also all its Arab neighbors in the "race" for nuclear capacity. Although such accomplishments are typically in the context of a military nuclear program, an effective civilian nuclear program could serve similar aims. Moreover, a civilian nuclear program could ensure Saudi Arabia's economic goals, particularly those related to increased electricity production and the desire to decrease its reliance on oil as a chief source of energy.

Still, Saudi Arabia faces a number of significant obstacles should it pursue the military nuclear track. First, the kingdom suffers from significant technological limitations. These make it difficult to launch even a civilian nuclear program, as reflected in the fact that the kingdom was in need of the nuclear agreements with a third party to train the relevant human resources, as well as secure the supply and transport of the required equipment and technology. Also relevant is the kingdom's underdeveloped education system, a deficient research infrastructure in the nuclear realm, and the need for the development of additional regulation and legislation and a suitable safety culture, as one concern in a regional arms race is the potential for accidents.

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Riyadh can make a good case regarding its need to produce nuclear energy to meet its growing energy needs, decrease its dependence on oil, and release a greater quantity of oil for export. However, it is also not

concealing another major motivation: the strategic-security factor. From the kingdom's perspective, the Iranian threat is serious and immediate, and the Saudi rationale regarding the nuclear issue must be understood in this context. Moreover, the Saudis regard the JCPOA as actually having increased Iran's conventional aggressiveness without putting an end to its long term aspirations in the nuclear realm.

The security concern remains a major factor that could push Saudi Arabia to try to engage in a military nuclear project. Moreover, the Saudis are not willing to accept the limitation accepted by the UAE and commit to refrain from enriching uranium. As they see it, if it is permissible for Iran, it is also permissible for them. As such, the Saudis may also be attempting to increase the pressure on the international community to deal with Iran with greater resolve and impose addition sanctions on the Islamic Republic's nuclear and missile programs.

Nonetheless, despite the statements of official Saudi parties, there are a number of factors that could prevent it from pursuing a military program, even in a situation of mounting threats or Riyadh's development of a scientific and technological infrastructure. The first is the pressure that the United States is likely to exert on the Saudis. Saudi Arabia will need to decide between insisting on a strategy of self-deterrence and relying on American security guarantees and the US significant contribution to Saudi security. This dilemma is particularly relevant given the perceived devaluation of the US regional status and involvement. In addition, as a signatory of the NPT, Saudi Arabia is subject to all the relevant international norms. Although the kingdom was discovered to have engaged in secret activities in the past (for example, the Chinese missile deal in the 80s), it does not appear to have any interest in brazenly violating international treaties, with the political and economic implications that go along with doing so.

In any event, especially if the American security umbrella is undermined, there will be nothing to prevent Saudi Arabia from attempting to acquire nuclear weapons in the event that Iran succeeds in acquiring military capabilities. If Saudi Arabia feels that its vital security interests and its stability are under threat, it could reach the decision that independent activity is the best way to minimize risk and ensure its regional status. According to a US Congressional report, "Saudi Arabia will not hesitate to aggressively bypass or risk alienating the United States in order to protect Saudi interests."[19] Under the current circumstances, Saudi Arabia still lacks the knowledge and the technological ability required to develop an independent civilian

nuclear program, not to mention a military nuclear program. It remains openly committed to efforts to develop nuclear technology for peaceful purposes, especially as a means of helping its energy production, and continues to emphasize the importance of the NPT and the importance of a nuclear weapons-free zone in the Middle East.

However, none of these factors can guarantee that in the face of mounting security threats from Iran, Saudi Arabia will not attempt to transition to a military nuclear program or purchase a nuclear weapon "off the shelf" as a means of deterrence. Saudi Arabia is interested in positioning itself in a manner that leaves it with the most possible options in the nuclear realm. More than any other actor in the region, it has the strategic motivation and the economic ability to do so. Given the current shortage of technological knowledge at its disposal, Saudi Arabia could be the first member of the nuclear club to purchase its capability, as opposed to developing it.

The development of a civilian nuclear program remains a long term goal for Riyadh. Despite the dangers it poses, the agreement with Iran, if it remains in force, will actually provide Saudi Arabia with a ten-year period during which it could develop a "civilian" nuclear program without withdrawing from the NPT. In the short term, in a scenario in which Iran breaks out to a nuclear weapon during the first years of the JCPOA, Saudi Arabia may already have a response from Pakistan (whose nuclear program was partly financed by Saudi Arabia). Despite disagreements with Riyadh in recent years, Islamabad still constitutes a strategic pillar for Riyadh, and in certain situations could provide the kingdom with tacit assistance in this realm. Still, it is unclear whether Islamabad has made an explicit commitment to the kingdom in the nuclear realm, and under what circumstances and conditions it would be fulfilled. A civilian nuclear program could give the Saudis prestige, but in terms of an immediate response to Iran, to what extent Pakistan will actually cooperate with and feel obligated to Saudi Arabia is unknown.[20]

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As a result of the energy issue, considerations of prestige and identity, and serious concerns regarding Iran, a civilian nuclear program remains an attractive commodity in the Gulf, despite the Fukushima disaster of 2011, which steered many countries away from this direction. The Gulf is one of the regions that have been assessed as

extremely likely loci of nuclear proliferation. Although previous predictions regarding the nuclearization of the Middle East were proven to be false, the nuclear agreement with Iran, which gave it the right to enrich uranium, means that conjectures that Saudi Arabia will take a similar route cannot be rejected out of hand. Even if the international community manages to amend the JCPOA and close some of its loopholes, prestige and concern in the energy realm remain strong reasons for Saudi Arabia to continue with its plans.

Conclusion: The Israeli Dilemma

The Saudis, encouraged by the discovery of large uranium deposits inside their borders, are adamant on not giving up the option of uranium enrichment. The Saudis certainly have an interest in reaching an agreement with the United States due to their desire for strong connection with the superpower and the international legitimacy that such an agreement would provide vis-à-vis nonproliferation norms. However, if the administration refuses an agreement, someone else may provide the Saudis with the sensitive technology they seek to acquire. Theoretically, Riyadh can turn to Russia or China, which presumably will not be as committed as the United States to the standards of preventing nuclear proliferation.

It is clearly in Israel's interest that Riyadh work with Washington, if only for the fact that by doing so the United States would gain closer access to the Saudi nuclear project. The United States places a greater emphasis on safety and can supervise what goes on in the nuclear realm in the kingdom, thereby acquiring leverage over Riyadh, given the Saudis' dependence on its relationship with the US. This could also serve to decrease Saudi motivation and ability to secretly develop the capacity to enrich uranium with outside assistance, if only because of the attention that doing so would attract to its nuclear program. As a signatory of the NPT, Saudi Arabia would have difficulty striving for an open military nuclear program, and at the very least, will be subject to the same level of inspections in other countries, as well as the same sanctions if it is suspected of moving in the direction of a military program. It will therefore have a very long road to travel if it attempts to build a nuclear bomb on its own.

The chances of the United States succeeding in imposing on Saudi Arabia the same restrictions that are currently imposed on other states are slim, particularly when Iran has received numerous international concessions and will be able to maintain a system, on "standby," to break

out to nuclear weapons in a short period of time. Perhaps the only way Saudi Arabia could be persuaded to adopt some of these restrictions is if Iran agrees to put off the timetable stipulated by the 2015 agreement indefinitely, and to add more thorough inspections, especially regarding the development of the explosion mechanism of the nuclear facility. At the moment, there is little likelihood of such a scenario. The United States, where the administration can be replaced every four years, has also failed to lend stability to the Middle East, and the change in approach to Middle East states and the loss of American support for long term leaderships are still a fresh memory.

Giving authorization to Saudi uranium enrichment could result in a regional spiral in which states such as Egypt and Turkey might also claim this "right." The negotiations between the United States and Jordan on this issue were halted due to Jordan's refusal to renounce the right to enrich uranium in its territory, and any agreement with Saudi Arabia would have implications for its neighbor to the north. The United Arab Emirates is also liable to regard itself as no longer obligated to its agreement, and the United States could encounter difficulties justifying the imposition of additional restrictions on the nuclear program in Iran. Moreover, questions exist regarding the future political stability of Saudi Arabia: Crown Prince Mohammad bin Salman has sought to consolidate his power on a rapid and danger-ridden process that is proceeding as the kingdom contends with a host of external challenges related to the struggle against Iran.

During his announcement in May 2018 of the overall new US policy toward Iran, US Secretary of State Mike Pompeo maintained that Iran must halt the enrichment of uranium. He added that US allies, including Saudi Arabia, cannot be expected to renounce their claim to rights granted to Iran under the nuclear agreement (i.e., uranium enrichment).[21] It will thus be difficult for the United States to grant permission to Saudi Arabia to engage in uranium enrichment while simultaneously demanding that Iran give up the same ability, and Riyadh will likewise have trouble justifying such a demand. However, if Iran also withdraws from the nuclear agreement and resumes enriching uranium of a higher grade than at the present, Saudi pressure on the United States to take the action necessary to put an end to this Iranian activity will increase. One method used by the Saudis thus far has been its reminder of its "right" to enrich uranium within its territory. In general, Israel should not give a green light to the enrichment of uranium in any Arab country. Hopefully the United States can wield enough leverage

to persuade the Saudis to adhere to the "Gold Standard." A great deal will of course depend on the results of the measures taken vis-à-vis Iran.

Notes

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21 "With respect to its nuclear activities, why would we allow Iran more capability than we have permitted the United Arab Emirates and that we're asking for the Kingdom of Saudi Arabia?" U.S. Department of State, Remarks by Secretary of State Mike Pompeo, Heritage Foundation, Washington, DC, May 21, 2018, https://www.state.gov/secretary/remarks/2018/05/282301.htm.