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# THE NUCLEAR QUESTION IN THE MIDDLE EAST

Summary Report

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# The Nuclear Question in the Middle East

## Working Group Summary Report

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## The Nuclear Question in the Middle East

### Working Group Summary Report

In early 2010, CIRS began work on “The Nuclear Question in the Middle East” research initiative. While the world community’s attention may currently be drawn to Iran’s nuclear program, the CIRS project aims to take a far more comprehensive and expansive look at the issue across the region. During working group meetings that took place in Doha, CIRS engaged with a number of academics and specialists who were invited to contribute individual chapters to a book on *The Nuclear Question in the Middle East* (Columbia University Press/Hurst, 2012).

The participants discussed balancing the need for civilian nuclear technology against the concerns of weaponization programs. Governments may claim that they seek to establish a peaceful civilian nuclear program, but there always remains suspicion that the program can be used for purposes of proliferation. Nuclear energy therefore, will always be considered of dual character. Due to the fact that a civilian nuclear program can be modified into a military one regardless of the original intent, there are a number of strict international non-proliferation laws and treaties that countries must adhere to in order to allay international suspicions.

Among other issues discussed by the working group were matters related to global security, regional mistrust, the prestige of gaining nuclear capabilities, and the role of NGOs and civil society groups in pressuring governments to abstain from nuclear energy initiatives. Further, the participants advocated the importance of understanding the domestic political realms of different Middle Eastern states; the possible forces that provide momentum for or against the nuclear movement; and the dynamics of internal policy debates amongst various political elites. They also stressed that it was necessary to examine the interconnected regional nature of nuclear programs (in the GCC for example) and how the different states may be propelling each other towards competing for the same prize. Energy provision itself is seen as an issue of state security, and, in the resource-rich states of the GCC, providing low cost energy for citizenry is vital for ruling elites to maintain stability.

Over the past few years the world has seen a marked increase in the number of states either actively engaging in the development of nuclear power programs, or declaring their future intentions of doing so. To this effect, experts have argued that we may be in the throes of a global “nuclear renaissance.” The Gulf states, along with other countries within the greater Middle East, have been amongst the most active in expressing their interest in developing non-weaponized nuclear energy programs.

Countries such as the UAE, for example, cannot rely on their own energy supplies for their high energy intensive petrochemical and water desalinization industries. These countries claim that they must pursue a combination of hydrocarbon; renewable energy sources such as hydro and solar; as well as nuclear energy in order to meet their future energy needs. To allay public fears, the Abu Dhabi nuclear power program has been established in accordance with international treaties and protocols and has openly invited foreign know-how and observers. Similarly, Jordan, Syria, Egypt, Morocco, and a host of other countries within the region have expressed their interest in developing nuclear programs as a solution to their energy shortfalls. In some quarters, these intentions have caused alarm, particularly as the region is viewed as potentially unstable and prone to conflict. Opponents of nuclear energy programs in the Middle East often state that their concerns are based on legitimate fears of the development of a region-wide arms race and have called for the establishment of a Nuclear Weapons Free Zone (NWFZ) in the Middle East. Given the increased level of interest in nuclear energy worldwide, and the particular implications for the region, this subject is one that merits further scholarly discussion.

## The Nuclear Question in the Middle East

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## Table of Contents

### Paper Synopses

1. The Nuclear Question in the Middle East: Context, Complexities, and Paradoxes  
Mehran Kamrava, *CIRS, Georgetown University School of Foreign Service in Qatar*
2. Domestic Sources of Nuclear Behavior in the Middle East  
Etel Solingen, *University of California, Irvine*
3. Succession and Nuclear Future in Egypt and Libya  
Maria Rost Rublee, *Australian National University*
4. The Role of Nuclear Energy in Gulf States' Economic Development  
Giacomo Luciani, *Paris School of International Affairs, Sciences-Po*
5. Saudi Arabia's Nuclear Future  
Thomas Lippman, *Middle East Institute*
6. The Economic and Prestige Aspects of Abu Dhabi's Nuclear Program  
Mari Luomi, *Georgetown University School of Foreign Service in Qatar*
7. Lessons from Turkey's Long Quest for Nuclear Power  
Mustafa Kibaroglu, *Okan University*
8. Israel and the Invention of Nuclear Opacity  
Avner Cohen, *The James Martin Center for Nonproliferation Studies (CNS) of the Monterey Institute of International Studies*
9. Iran's Nuclear Program  
Kayhan Barzegar, *Harvard Kennedy School's Belfer Center for Science and International Affairs; Islamic Azad University*
10. A Nuclear Weapons Free Zone in the Middle East  
Gawdat Bahgat, *Near East South Asia Center for Strategic Studies, National Defense University*

## 1. *The Nuclear Question in the Middle East: Context, Complexities, and Paradoxes*

Mehran Kamrava

Much of the scholarly and policy attention concerning nuclear programs, both civilian and military, revolves around questions of proliferation and non-proliferation. Why and when do states choose to proliferate or abstain from proliferation? What are the causal domestic and international dynamics at work? What potential linkages are possible between civilian and military nuclear programs? And, what are the precise interplays of individual decisions and institutional forces that result in certain proliferation or non-proliferation outcomes? These and other similar questions have occupied prominent positions in much of the contemporary scholarship on nuclear studies.

Concurrent with and reinforcing the focus on proliferation has been a rediscovery over the last decade or so of the virtues of nuclear power as a relatively reliable and environment-friendly energy source. Particularly until the devastating March 2011 earthquake in Japan, which soon led to a series of explosions at some of the effected nuclear power plants and leakages of radioactive materials into the air and the seawater, the world was witnessing a “nuclear renaissance” that reached into the four corners of the globe. The Middle East was no exception, with Arab League states deciding in 2007 to expand the peaceful use of nuclear technology in order to meet their diverse energy needs in a sustainable manner.

Given this rediscovery of the virtues of nuclear power around the globe, it is important to differentiate between two related phenomena: a potential *growth* in the production of nuclear energy by states that already have nuclear power production facilities, and the potential *spread* of nuclear power plants and related facilities to states that are new entrants to the “nuclear energy club.” To alleviate potential concerns about proliferation, multilateral nuclear arrangements have grown in popularity as a way to strengthen the non-proliferation regime through the “de-nationalization” of sensitive fuel cycle facilities in non-nuclear weapons states. Access to nuclear energy technology by non-nuclear weapons states (NNWS) inevitably leads to concerns about the possible acquisition of nuclear weapons as both require similar skills and technologies, the most notable being uranium enrichment and plutonium reprocessing capabilities. There are two key ingredients for making nuclear weapons: separated plutonium, and highly enriched uranium (HEU). Civilian nuclear power plants produce low enriched uranium (LEU) and give countries access to civilian-separated plutonium. But the potential for converting LEU to HEU can significantly increase the possibility of latent proliferation and “breakout” capacity, whereby fissile materials for weapons purposes are swiftly, and perhaps even openly, produced.

Proliferation concerns abound. At the same time, there is genuine frustration by the non-nuclear states when the nuclear weapons states (NWS) pressure them to observe the non-proliferation regime that they themselves are unwilling to abide by. Articles IV and VI of the Non-Proliferation Treaty (NPT), which define rights and obligations with respect to peaceful use of nuclear energy and nuclear weapons disarmament respectively, are often seen as particularly preferential to supplier, nuclear-weapons states. For their part, given the opportunity, most Middle Eastern states could either enter into joint partnerships for the construction of, or purchase outright, relatively advanced nuclear power plants. Mutual distrust and outright competition, as the case of the Gulf Cooperation Council has demonstrated, make the possible emergence of such joint partnerships in the Persian Gulf seem unlikely. Even more consequential is current distribution of power in the international community,

and particularly given the roles currently played by the United States and the European Union, making it highly unlikely for cooperative nuclear arrangements to emerge within the GCC or other Middle Eastern states because of potential breakout and proliferation possibilities.

In 2011 the Middle East witnessed domestic upheavals of unprecedented proportions. It is unclear whether or not what came to be known as the Arab Spring will have lasting and meaningful consequences for the domestic and international politics of the region. As the initial euphoria of perceived democratization movements across North Africa and the Middle East gave way to the sober realization of brutal authoritarian persistence—as made tragically clear in Libya, Syria, and Bahrain—the imperative of regime survival as an overriding focus of domestic and foreign policy pursuits was once again driven home. Whatever direction Middle Eastern leaders decide to follow on the nuclear question will be similarly based on regime survival calculations. For the time being, the initial indications do not signal radical shifts across the region: in order not to be left behind, and in response to their own needs, the other GCC states are likely to adopt paths similar to that of the UAE; Israel is unlikely to abandon its carefully guarded policy of opacity any time in the near future; Turkey’s nuclear aspirations will most likely continue to be viewed with skepticism by its Western allies; Iranian leaders are likely to continue with their often dangerous game of nuclear hedging; and regional circumstances and domestic policy preferences will continue to undermine conditions for a nuclear weapons free zone. It is unlikely, in other words, that questions and tensions around nuclear issues in the Middle East will diminish any time soon.

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## 2. *Domestic Sources of Nuclear Behavior in the Middle East*

Etel Solingen

Increased concern with the possibility of proliferation waves or epidemics requires a better understanding of what exactly drives states to develop, acquire, or renounce nuclear weapons. Various logics can explain the range of decisions associated with these different outcomes. This chapter focuses on domestic sources of nuclear behavior for three reasons. First, the editor's guidelines invited such a focus for this particular contribution in the broader effort to untangle "cause and effects" relations explaining nuclear decisions. Second, all motives of nuclear behavior are, in the end, filtered through the domestic politics within which decisions are made. Yet, a systematic understanding of domestic effects eluded most work in the area of nuclear proliferation in the last three decades, until fairly recently. Third, I build on previous work to draw attention to some recurring regularities in the analysis of domestic sources of nuclear decisions. These regularities relate to ideal-typical models of political survival that leaders embrace to gain or retain power, the most under-theorized dimension in explaining nuclear choices until recently.

Different models of domestic political survival provide important information regarding nuclear decisions in the post-1960s era, after the inception of the Non-Proliferation Treaty (NPT). In particular, these models entail different orientations to the global political economy and its associated economic, political, and security institutions, and had different implications for nuclear choices in various regions of the world. On the one hand, leaders advocating economic growth through integration in the global economy ("internationalizing" models) have incentives to avoid the costs of nuclearization. Nuclearization has negative implications for enhancing exports, economic competitiveness, macroeconomic and political stability, and global access—all objectives of internationalizing models. Nuclearization can also strengthen state bureaucracies and industrial complexes opposed to economic transformation. For all these reasons, denuclearization has often taken place as part of a broader program of internationalization designed to strengthen market oriented forces, leaders, and institutions—state and private—favoring export-led growth. On the other hand, leaders relying on inward-looking models had greater tolerance—and in some cases strong incentives—for developing nuclear weapons. Nuclearization entailed fewer costs for inward-looking leaders and coalitions whose political platforms were rooted in mistrust of international markets, investment, technology, and institutions. Such coalitions protected uncompetitive national industries, sprawling state enterprises and ancillary military-industrial, and nuclear complexes. Nuclearization entailed considerable domestic advantages for opponents of internationalizing models in inward-looking, import-substituting regimes favoring extreme nationalism, religious radicalism, or autarky. Most inward-looking nuclear aspirants have been NPT members who misled or violated NPT commitments.

In sum, whereas inward-looking models might have regarded nuclear weapons programs as assets in the arsenal of building regime legitimacy, internationalizing models build legitimacy on successful and competitive economies capable of distributing public goods to broad sectors of the population. This contrast is most evident when comparing the Middle East with East Asia. As a region, the Middle East gravitated towards the inward-looking end of the spectrum for decades, accounting for most cases of nuclearization since the 1960s. I illustrate

the general argument with an overview of two cases: Iran, which has been found in violation of its Nonproliferation commitments by the IAEA and the United Nations Security Council, and Egypt, which has eschewed nuclear weapons since the 1970s.

In Iran, the growing dominance of an inward-looking, nationalizing, statist faction has been accompanied by growing defiance in the nuclear arena. This strand was intermittently challenged by a broad coalition of reformist, “economy first,” or “pragmatic” advocates of privatization, increased trade with Europe and Asia, a utilitarian over an ideological approach to foreign policy, and decreased tension with international institutions. However, the ascent of President Mahmoud Ahmadinejad—backed by Seyyed Ali Khamene’i and allies among the Revolutionary Guards—have helped decimate the reformist opposition. Various factors are likely to influence Iran’s nuclear policy in the future, including the domestic effects and distributional consequences of international sanctions. In the short-term, it appears that the nature of the dominant model of political survival embraced by the hardline leadership will shape and define the ultimate contours of Iran’s nuclear program. As Kamrava has suggested, the 2009 elections and their aftermath reflect growing polarization between large segments of Iranian society and those who dominate the state; a progressive militarization of the political system; the Supreme Leader’s deep commitment to the dominant faction; and the emergence of new “rules of the game.”

Tracing Egypt’s nuclear abstention in the last four decades to models of political survival seems risky at first sight, but far more persuasive once the leading alternative is considered. Egypt provides in some ways a “most likely case” for seeking nuclear weapons under a neorealist logic, where the domestic nature of states does not matter and only “relative power” between/among adversaries does. Yet, the evolution of Egypt’s nuclear behavior does not conform to expectations from neorealism. Instead, both early efforts toward nuclearization by Gamal Abdul Nasser and the subsequent shift by Anwar Sadat were compatible with their respective models. Nasser’s inward-looking coalition was acutely aware of its primary domestic and regional audiences, and a nuclear program provided a particularly valuable tool of domestic survival. Sadat favored nuclear transparency as part of a broader swing to substitute Nasser’s model of inward-looking self reliance, hyper-nationalism, and military-technical prowess with his own blueprint of export-led economic growth, foreign investment, military conversion, and new relationships with international markets and institutions, all of which left no room for an ambiguous and expensive nuclear program. Strong inward-looking domestic constituencies that threaten regime survival go a long way in explaining why Egypt has not yet been able to transform itself into a strong internationalizing political economy despite some progress in that direction.

This chapter explores why alleged signs of possible revisions in Egypt’s nuclear posture may have far less to do with existential threats from without than with domestic pressures from within. Some of those internal pressures emanate from Iran’s intrusion in Egypt’s domestic politics and from the domestic reverberations of intransigent positions on settlements and the Palestinian state by recent ruling coalitions in Israel. However,

Iran and Israel provide targets of opportunity in the context of a more fundamental challenge to the dominant model of political survival, primarily driven by Egypt's inward-looking constituencies. A future resolution of both external issues—a long shot—might deprive those constituencies of valuable lines of attack but hardly end their defiance of Egypt's beleaguered internationalizing model.

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### 3. *Succession and Nuclear Future in Egypt and Libya*

Maria Rost Rublee

Questions over the potential military uses of Iran's nuclear program have done far more than focus attention on Tehran's capabilities and intentions. Now, analysts raise the specter of a nuclear arms race in the Middle East, as the region has suddenly displayed great interest in nuclear technology. In the past five years, thirteen Middle Eastern countries have announced new or re-launched civilian nuclear programs. While these programs are civilian in nature, some analysts are concerned that they could be intended as backdoors into military nuclear capability to match Iran. However, while these arguments have a certain logic, they impute the weight of explanatory power to regional dynamics, and may not recognize the importance of other factors in the creation of nuclear programs—impetuses both for and against the creation of nuclear weapons.

This chapter proposes to counterbalance the focus on regional strategic dynamics with an analysis of the importance of individual-level decision-making in two key countries in the Middle East: Egypt and Libya. The bulk of scholarly work on nuclear proliferation uses realism, which seeks to understand nuclear politics through systemic security drivers. This trend has slowly turned toward a greater theoretical focus on other variables, including economic conditions, domestic coalitions, normative concerns, institutional constraints, and even supply and demand. Few theoretically informed works, however, have specifically spotlighted the role of individuals in nuclear decision-making; the notable exception is Jacques Hymans' *The Psychology of Nuclear Weapons: Identity, Emotions and Foreign Policy* (2006), which posits psychological characteristics of decision-makers as a key variable. The lack of attention to individuals may be in part due to the dominance of realism, but also due to the more general neglect of the first image in international relations.

I argue that in nuclear politics, it may be time for a renaissance for the individual level of analysis—to bring the individual back in—because of the extraordinary domestic changes that occurred in the Arab Spring 2011. In both Egypt and Libya, domestic upheavals have dramatically affected nuclear politics, and nuclear politics have the potential to affect domestic politics. The paucity of a strictly systemic level analysis comes into full light when considering the dramatic differences in nuclear decision-making that can be predicted by envisioning the variety of potential leadership transitions in each country. The goal is not to argue that system or state level attributes are not important, but rather that the individual level must also be examined for an honest look at nuclear futures in Egypt and Libya. In short, this chapter argues that to understand Egyptian and Libyan nuclear prospects, we must wrestle with the question, Who will lead these countries?

In both Egypt and Libya, nuclear histories and nuclear futures clearly paint the importance of individuals. Nasser's ambivalence toward nuclear weapons meant that his drive for military nuclear capability faltered, when under another more committed leader it may have flourished. Sadat completely rewrote Egypt's foreign policy, going to visionary lengths that simple economic reform did not dictate. In rethinking Egypt's friends and enemies, he also rethought the value of nuclear weapons, deciding to permanently close the program. This closure stayed firm under Hosni Mubarak, who was happy to let the passionate diplomatic corps keep Egypt on a non-nuclear path. Looking to Egypt's nuclear future also shines the spotlight on why leadership transitions matter. The

military elite is focused on maintaining its privileged positions in society. While both Iran's nuclear program and domestic pressure might tempt generals to think about their own military nuclear capability, the high diplomatic costs of doing so mean that Field Marshall Tantawi is likely to conform and continue Mubarak's adherence to the nuclear non-proliferation norm. Both Mohamed ElBaradei and Amr Moussa have staked careers in supporting the nuclear non-proliferation regime; if either were elected, Egypt would strongly engage in international nuclear diplomacy and it would be close to unthinkable that either would approve of a nuclear weapons program. On the other hand, should the Muslim Brotherhood, perhaps through the presidency of Abdul Munim Abu al-Futuh, gain control in a post-Mubarak Egypt, one could expect the opposite: Egypt might withdraw from the Non-Proliferation Treaty (NPT) and actively pursue nuclear weapons. In other words, the choice of leadership matters a great deal to nuclear outcomes.

In Libya, Muammar Qadhafi sought nuclear weapons in his quixotic quest to become the "bad boy" of the Middle East. However, the influence of his son Saif al-Islam convinced him to rethink Libya's future, including the renouncement of the nuclear weapons program. As Qadhafi's regime crumbled, Islamist rebels such as Abdel-Hakim al-Hasidi would likely reject the non-proliferation norm, although their ability to pursue a nuclear weapons program would be severely hampered by the financial chaos that revolution brings. Again, leadership transitions have clear and direct impacts on nuclear policy.

To what extent do other approaches explain Egyptian and Libyan nuclear politics? First, it is important to stress that this chapter is not arguing that individuals are the only significant variable. In my book on *Nonproliferation Norms: Why States Choose Nuclear Restraint* (2009), I have argued that for both Egypt and Libya, the international non-proliferation norm shaped individual and domestic debates about what success and security look like for their countries. Nevertheless, this does not undermine the importance of understanding individual leaders' orientations toward the nuclear non-proliferation norm. Both political economy and domestic coalitions are also clearly important to nuclear choices, as evidenced by both the nuclear histories and nuclear futures of the two countries spelled out in this chapter. In her book, *Nuclear Logics: Contrasting Paths in East Asia and the Middle East* (2008), Etel Solingen's insight that internationalizing coalitions generally do not support military capability, while inward-looking coalitions do, informs analysis of both Egypt and Libya. However, examining elite orientations to the nuclear non-proliferation norm adds to, and sometimes challenges, this wisdom.

For example, both those who are "persuaded" and those who "identify" fit within Solingen's internationalizing coalitions. However, should the nuclear non-proliferation norm erode significantly, someone who identifies may wander from nuclear restraint because the commitment is not to the norm, but to an important "other." Should the US-India nuclear deal end up diluting nuclear export controls over the long-term, it may no longer be disadvantageous for business to seek military nuclear capability—and, in fact, it may become a way to increase exports. For internationalizers who "identify," this could lead to erosion of their support for nuclear restraint. However, for an internationalizing elite that is persuaded, the value of nuclear weapons will not have changed. The

commitment to security and security through peaceful means, rather than weapons, will not be as easily eroded. Thus, understanding individual orientations toward the nuclear non-proliferation norm offers finer gradients of the internationalizing coalitions, with important implications for policy.

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#### 4. *The Role of Nuclear Energy in Gulf States' Economic Development*

Giacomo Luciani

The chapter argues that the strategic decision of Gulf Cooperation Council (GCC) countries to diversify their primary sources of energy supply to include renewable and nuclear sources are grounded in the economic reality of the region and a prerequisite for long-term sustainability of their economic development.

GCC countries have made a strategic decision to transform their economies and achieve economic development, and are not satisfied with living out of surplus funds accumulated in sovereign wealth funds. The development paths that GCC states have embarked upon are characterized by high energy intensity. The refining and petrochemical industries that have successfully taken root in the region are all highly energy intensive, and so are the logistical and other modern services that the region is specializing in. The development pattern is characterized by intensive urbanization and rapid population growth—natural and from the inflow of expatriate workers—adding to the rapid increase in energy demand. The harsh environmental conditions mandate high levels of energy consumption in connection with water desalination and air conditioning.

Efficiency could obviously be greatly improved, but it would be a major mistake to attribute the high energy intensity of GDP or consumption per capita exclusively to waste. The search for sustainability must be a 360° effort, including eliminating energy waste, as well as promoting alternative sources of energy; the latter should obviously be renewable sources first and foremost, but nuclear energy also plays an essential role.

The reason lies in the variable nature of electricity demand and the fact that electricity must be provided for in real time when it is demanded. Electricity can only minimally be stored. This leads to the crucial distinction between base load—that portion of demand which is always present, 24 hours a day and 365 days of the year—and variable load. Within the latter, peak load indicates the very high level of demand that is reached only for a few hours and a few days of the year.

Economic and technical conditions determine whether a specific technology is more adapted to base, medium, or peak load power generation. From an economics point of view, base load is best addressed by technology that is capital intensive but minimizes variable cost (notably fuel), while peak load is best addressed by technology that minimizes fixed investment, even if variable costs are higher. Hence, all large-scale thermal power plants—and certainly nuclear power plants—are best suited to provide base load. At the opposite extreme, a gas turbine (single cycle) power plant that minimizes investment and has limited economies of scale is best suited to provide peak load.

Technologically, the time needed to start the power plant and reach maximum capacity needs to be taken into account—the range is from nuclear, which is very rarely turned off to a gas turbine, which is very easy to turn on and off and whose power output is easily modulated.

In this context, renewable sources offer the added difficulty that we cannot control when they are available or how much power they will be able to generate. When power from renewable sources is available, it should be given priority over other sources, but other sources must be available for meeting demand when renewable sources cannot. Renewable sources such as solar and wind power “eat” into the base load and increase the requirement for elasticity of supply from the rest of the power generation fleet.

The bottom line is that renewable energy sources are especially complementary with single-cycle gas-fired power plants, or at most with combined-cycle gas-fired power plants. However, this is only true if gas-fired power

plants are not integrated with water desalination; if they are, they must be run in order to meet the demand for water—hence they no longer are a flexible source.

Natural gas is the most important primary source for power generation in the Gulf, and it is also the source that is most easily combined with renewable sources. Thus, *prima facie* the best solution for power generation in the Gulf might be to continue relying on gas. However, the GCC countries—somewhat paradoxically—face a shortage of gas availability. As gas becomes inevitably more expensive, its role in power generation will tend to be confined to where its intrinsic comparative advantage lies, which is to provide flexibility for meeting peak demand and compensating for the variable availability of renewable energy sources, to the extent that the latter will indeed become an important component of total power supply. Increasingly, base load will need to be satisfied with other primary sources.

In some GCC countries, notably Kuwait and Saudi Arabia, oil or oil products are also used for power generation. However, the opportunity cost of burning crude oil products in power plants is rapidly increasing in a world in which oil supplies are growing scarcer. The practice is neither economically nor environmentally sound and so should be abandoned as soon as possible.

Thus, base load is better provided for by either coal or nuclear energy; the difference between the two being that coal-use generates large Green House Gas (GHG) emissions, while nuclear is carbon-free. Reducing GHG emissions from coal requires carbon capture and sequestration, which is possible, yet expensive and detrimental to the efficiency of the plant.

The chapter offers a critical analysis of economic, environmental, sociopolitical and technical conditions for nuclear power uptake, and argues that indeed it is especially suited to the region and very much complementary to growing reliance on renewable sources, assisted by gas.

Finally, the article briefly discusses the synergies between hydrocarbon production and transformation and nuclear energy and argues, in line with other expert opinion in the literature, that the use of nuclear energy can greatly contribute to increase the availability and reduce the environmental impact of using hydrocarbons, while continuing to enjoy their unparalleled quality of energy density and chemical versatility.

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## 5. *Saudi Arabia's Nuclear Future*

Thomas Lippman

The Kingdom of Saudi Arabia has committed itself to an energy-intensive future that will require electricity generation capacity orders of magnitude greater than what it has now. What fuel is to be consumed to generate all those megawatts? Saudi Arabia does not wish to use oil to generate that electricity because burning oil in power plants is already restricting the supply of crude available for export. Nor can the country depend on natural gas because gas is already in short supply and all of it will be needed for the petrochemical plants, smelters and other industries that are being developed. There is no hydropower potential. More and more electricity will be produced by an expanding solar energy program, but not nearly enough to meet the requirements of a growing population and expanding industrial base.

Therefore, the kingdom has come to the logical conclusion that it will need nuclear power, and has set itself on that path. It is theoretically possible that integration of the regional electricity grid would enable Saudi Arabia to import nuclear-generated power from neighboring Abu Dhabi, where nuclear plants are under construction, but Saudi Arabia's published and announced plans assume that the kingdom will create its own.

It may seem counterintuitive that a country so rich in hydrocarbon resources as Saudi Arabia would need to develop nuclear power, but Saudi officials say the country faces overlapping, interrelated demands on its resources that must be considered as a package. The power-requirement projections for the planned new industries are daunting—and most of these industries will use natural gas for feedstock, reducing the supply of gas available to generate electricity. Burning oil in power plants cuts the amount available for export—an obviously undesirable choice in a country that derives nearly 90 percent of state revenue from oil exports. Saudi Arabia already consumes the daily energy equivalent of 2.8 million barrels of oil, and in 2010 the kingdom became “the second-largest source of expected global oil demand growth,” behind only China, according to the International Energy Agency. Put another way, the London-based Economist Intelligence Unit calculated that Saudi domestic energy consumption, which was the BTU equivalent of 114.6 million tons of oil in 2000, 153.2 million tons in 2005, and 198 million tons in 2010, will rise to 341.6 million tons by 2020.

Moreover, Saudi Arabia will need much more fresh water just to keep its population alive, and that water can come only from desalination of seawater, which requires huge inputs of electricity. Households and individuals are using more power every year for appliances, gadgets, and air conditioners.

The government could impose strong conservation measures and raise the price of electricity to consumers to discourage consumption, but such steps would be politically risky in an environment where the public has come to expect generous subsidies as a way to share in the country's oil wealth. The public's faith in the ability of the Saudi Electricity Company to meet demand has been undermined by periodic power outages that have cut service to business and residences, especially in the Jeddah metropolitan area, and ignited occasional minor riots. People understand power shortages in Iraq; they do not understand them in peaceful, affluent Saudi Arabia, where reliable delivery of low-priced commodities and essentials is a fundamental part of the rulers' bargain with the politically disenfranchised population. It all adds up to nuclear power.

Unlike many other countries, Saudi Arabia faces few obstacles if it decides to proceed. The government has the money, there is no political or environmental opposition, and there is plenty of uninhabited land where nuclear plants

and nuclear waste repositories could be constructed. The biggest potential problem may be the identification of sites where nuclear plants could be constructed safely, a sensitive consideration in the wake of the Japanese disaster of 2011. Some areas of the vast landscape that might otherwise be desirable may be geologically unsuitable, according to the kingdom's leading expert on the subject, Dr. Abdullah Al-Amri, professor of geophysics at King Saud University.

According to Al-Amri's studies, the land on both the Red Sea and Gulf coasts is unstable, for different geologic reasons, and therefore not appropriate for nuclear plant development. The facilities may have to be constructed well inland, which means cooling water would have to be pumped from the coasts. It is technically feasible, but every meter of pipe increases exposure to breakage and sabotage, which could jeopardize safety.

Decisions about location of any nuclear plants, the timing of development, and the selection of international partners are to be made by Hashem Yamani, a former Minister of Commerce, and his team at King Abdullah City for Atomic and Renewable Energy, an institution created by the King in 2010 with a mandate to develop nuclear and solar power. This organization has entered into planning and consulting agreements with firms in Finland, France, and Russia. Whatever recommendations and decisions emerge, it is likely to be at least ten years before actual construction begins.

One potential complication is the suspicion that will inevitably arise about the possibility that nuclear power could become a pathway to nuclear weapons. Saudi Arabia is a party to the Nuclear Non-Proliferation Treaty, (NPT) but because of its rivalry with Iran—an NPT state that is widely believed to be seeking nuclear weapon capability—it will not be able to escape international scrutiny on this subject.

According to a message from James Smith, the U.S. ambassador in Riyadh, that was revealed by Wikileaks, King Abdullah told a senior White House official that “if Iran succeeded in developing nuclear weapons, everyone in the region would do the same, including Saudi Arabia.” That may sound definitive, but it should be not taken at face value or as a statement of a considered policy that has been formally adopted by the kingdom. There are powerful disincentives to any attempt by Saudi Arabia to acquire or develop nuclear weapons, even apart from its shortage of technical and engineering capability. Any attempt by Saudi Arabia to develop or acquire nuclear weapons would undermine its security far more than it would enhance it, incur the wrath of the United States, put Saudi Arabia on Israel's target list, and undermine the Kingdom's ambitious plans to become a significant industrial and mercantile nation with a respected place in the international community. Saudi Arabia does not envision for itself a future as an international outlaw.

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## 6. *The Economic and Prestige Aspects of Abu Dhabi's Nuclear Program*

Mari Luomi

The speed at which Abu Dhabi, the wealthiest emirate of the United Arab Emirates, established its civilian nuclear energy program in the late 2000s is something previously unseen in the region. After the six Gulf Cooperation Council (GCC) states announced in 2006 that they would consider nuclear energy, the monarchies' motives have been studied either in the frame of domestic energy security or that of (non-)proliferation. Based on available information, the UAE's domestic energy security situation indeed seems to justify its choice. While the possibility of eventual proliferation ultimately depends on future political choices, and can therefore never be completely excluded, in the program's early years, Abu Dhabi took pains to convince the international community of its peaceful intentions. An important part of this endeavor was the formulation of the "UAE model," devised together with the Gulf state's key external ally, the United States, and employed by the local ruling elite in its pursuit of prestige in the eyes of regional and domestic audiences.

This chapter sheds light on the origins, motivations, and characteristics of this "fast track nuclear program" and considers some of its main future challenges. It shows how a number of decisions and actions by Abu Dhabi's leadership in the early years of the nuclear program are not attributable to geopolitical ambitions or energy security alone. While the decision to pursue a domestic nuclear energy program was undoubtedly influenced by both economic and security considerations, the United States and France played a defining role in promoting and enabling the option for the UAE. This was most apparent in the swiftly signed bilateral cooperation agreements and the creation of the above mentioned "nuclear model."

Also, in order to understand the UAE's nascent nuclear diplomacy, it should be acknowledged that prestige-seeking has become an important and distinguishable element of it. This chapter argues that, in the case of the UAE's nuclear program prestige considerations are largely disconnected from the pursuit of military power. Prestige in this case is attached to non-proliferation-related values and symbols, in addition to notions of modernity, advanced development, and cooperation, which bear important linkages to the general foreign policy orientation of the country.

After analyzing the economic motives and domestic emergence of the Abu Dhabi-led nuclear program the chapter considers the role of external allies and the pursuit of prestige in moulding the program in its formative years, from 2006 to 2010. Finally, the chapter shows how Abu Dhabi's apparent success in this massive energy project also has its shortcomings and weaknesses, which stem from the federation's political economy and external environment. While these weaknesses might not derail the nuclear program, they could bear important consequences for nuclear developments elsewhere in the region.

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## 7. *Lessons from Turkey's Long Quest for Nuclear Power*

Mustafa Kibaroglu

The nuclear disaster experienced in Japan's Fukushima Daiichi nuclear power plant in March 2011 has caused most, if not all, states that have or aspire to nuclear reactors to seriously reconsider this potent capability. Yet, it seems unlikely that nuclear technology will lose its status within international political and scientific circles as both a major source of energy and as a symbol of geopolitical standing. Prior to the devastating earthquake and resulting tsunami in northeastern Japan, nuclear energy had taken its place on the short-list of investment plans by Middle Eastern states, especially those of the Persian Gulf which are already energy-rich. It is not clear whether the Fukushima crisis will dissuade these governments from going ahead with their long-term plans to build nuclear power plants or whether they will downsize their projects in the face of the constant possibility of serious nuclear accidents. What is certain, however, is the fear of proliferation felt by Western states whose immediate concern is to strike a balance between expected cash revenues from nuclear technology transfers and the political-military implications of the Gulf's large-scale investments in such sensitive technologies. Hence, Middle Eastern countries aspiring to nuclear technology may have to satisfy the expectations of Western suppliers not only in terms of large sums of cash, which they appear prepared to pay, but also in terms of providing the assurances necessary for mitigating fears of further nuclear proliferation regionally. At this critical juncture, Turkey's longstanding quest for nuclear power may provide useful lessons for Middle Eastern countries displaying a genuine interest in acquiring state of the art nuclear technology.

Nearly half a century ago, Turkey launched the first feasibility studies for a nuclear power plant with a view to benefitting from the peaceful exploitation of nuclear energy. However, those attempts, and subsequent ones, did not come to fruition. Among a variety of reasons, extending from a lack of a well-defined national strategy to domestic political disturbances, the most significant was the West's fear of a re-transfer of nuclear materials and technology to a third party, namely Pakistan in particular. Moreover, India and Greece further fueled these fears by disseminating rumors regarding such a Pakistani-Turkish alliance. The result was reported to be pressure by the United States on supplier countries and firms to deny transfers of nuclear reactors and related technology to Turkey.

Notwithstanding the allegations of a connection with Pakistan, Turkey has become party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) after signing it on January 29, 1969, then ratifying it on April 17, 1980. Turkey also concluded a "full-scope" Safeguards Agreement with the International Atomic Energy Agency (IAEA) in 1982. Eventually, Turkey joined the other international nuclear nonproliferation efforts such as the Zangger Committee and the Nuclear Suppliers Group (NSG) in 2000, and moved toward signing and ratifying the Comprehensive Nuclear Test Ban Treaty (CTBT) in 2001. Additionally, true to the fundamental thrust of its foreign and security policy, Turkey has also become party to international agreements that seek to prevent the proliferation of weapons of mass destruction, such as the Biological Weapons Convention of 1972 and the Chemical Weapons Convention of 1993. At the Extension and Review Conference of the NPT held in New York in April/May 1995, Turkey gave its full support to the "indefinite and unconditional extension" of the Treaty. Turkey also used its influence on the Turkic republics of Central Asia and the Caucasus, who had proclaimed their independence from the Soviet Union, encouraging them to behave in the same way.

Turkey also assumed full member status in the Conference on Disarmament (CD) in Geneva in 1997 after a long period of attending the meetings with merely observer status. Moreover, as a country that never sought to acquire weapons of mass destruction in the first place, Turkey endorsed efforts to strengthen the nuclear non-proliferation regime and the verification mechanism of the International Atomic Energy Agency (IAEA). Turkey paid much attention to the proceedings of the “Programme 93+2” study as an attempt to make IAEA safeguards inspections more comprehensive. This culminated in the “Additional Protocol” in 1998, which Turkey signed and ratified in 2001. Above all, Turkey has been a “staunch ally” of the North Atlantic Treaty Organization (NATO) countries since 1952, and because of its position directly adjacent to the Soviet Union, it carried a greater portion of the burden of defending the West against the East. With such an outstanding record of observing its commitments to the nonproliferation regimes, the opposition posed by the United States, Canada, and Germany has long been effective in impeding Turkey’s attempts to benefit from peaceful uses of nuclear energy. It goes without saying that such attempts by Turkey were its unequivocal right under Article IV of the NPT.

Turkey is a rapidly growing country whose energy needs at present already extend well beyond its installed power generating capacity, and forecasts for the future paint a similar picture. Despite outstanding success in completing power generation projects in the 1970s and 1980s, Turkey suffered from frequent power outages in the 1990s that caused serious damage *inter alia* to its industrial output. In the 1990s, Turkey could not attain a similar pace of financing dozens of projects of various sizes that would further exploit its power generating potential. Even if Turkey could have done so, it would have only postponed the anticipated crisis unless it resorted to other energy sources. Turkey’s hydropower and thermal energy sources would not have been sufficient to meet the steady increase in its energy demands in the decades to come even if all were applied toward power generation. As of the year 2010, Turkey had a population of approximately 75 million, which is estimated to reach 100 million in 2030.

Turkey does not have significant reserves of oil or natural gas and therefore is dependent on foreign nations for power generation. Turkey has other sources of energy such as fresh water, coal, geothermal, wind and solar, as well as considerable reserves of uranium and thorium. Of all these, however, only water and coal have been properly exploited over the last decades to generate electricity. Overall installed capacity in 2008 reached 42 GWe, of which 14 GWe came from hydroelectric, and another 28 GWe from thermal plants fueled with both domestic and imported coal, natural gas, and oil. In terms of electricity production, the total capacity reached 262 TWh (hydro 53 TWh; thermal 307 TWh) with a net production of 194 TWh (hydro 36 TWh; thermal 156 TWh). Turkey’s main domestic energy sources, water and coal, have potentials of 125 TWh/year and 105 TWh/y, respectively. Hence, these figures indicate that even if all major domestic sources are somehow put into energy production, demand will still exceed domestic supply. Consequently, the peaceful exploitation of nuclear power came to the fore once again as a strategy for Turkey to diversify its primary sources of energy.

This chapter aims to give an account of Turkey’s serious efforts to benefit from peaceful uses of nuclear energy over the last five decades and to discuss how the skepticism of Western supplier countries (arising from fear of a connection to Pakistan) has had a negative effect on Turkey’s initiatives in the past. After nearly five

decades of sustained efforts to conclude deals with nuclear technology suppliers in the West, Turkey finally signed an intergovernmental agreement with Russia in May 2010 for the construction of its first nuclear power plant in southern Turkey. The deal, however, was considered by many analysts in Turkish scientific and technical circles as falling short of satisfying Turkey's initial aspirations to develop indigenous scientific and technological advancement in the nuclear field.

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## 8. *Israel and the Invention of Nuclear Opacity*

Avner Cohen

On March 6, 1963, the head of the Office of National Estimates at the CIA, Sherman Kent, issued an eight-page memorandum to CIA Director John McCone entitled “Consequences of Israeli Acquisition of Nuclear Capability.” The memo viewed the consequences of Israeli nuclearization as grave. “Israel’s policy towards its neighbors would become more rather than less tough... it would ... seek to exploit the psychological advantages of its nuclear capability to intimidate the Arabs and to prevent them from making trouble on the frontiers.” Furthermore, Kent continued, in dealing with the United States, Israel “would use all its means in its command to persuade the United States to acquiesce in and even to support, its possession of nuclear capability.” The Arab reaction would be “profound dismay and frustration,” and among principal targets of Arab resentment would be the United States. The Arabs’ recourse would be the Soviet Union which would “win friends and influence in the Arab world.”

Yet, Sherman Kent had no sense of how, and under what modality, Israel would acquire the bomb. In fact, in an asterisk footnote he notes that “for the purpose of this memorandum, Israeli “acquisition of nuclear capability” may mean either (a) Israeli detonation of a nuclear device, with or without the possession of nuclear weapons,” or (b) the announcement by Israel that it possessed nuclear weapons even though it had not detonated a nuclear device.”

Israel did acquire nuclear weapons capability in the late 1960s, but it did so in a very different way from what Kent had assumed. In contrast with the way Kent had conceived the emergence of the Israeli bomb—open, declared, public—Israel developed, acquired, and ultimately possessed nuclear weapons through a very different model that Kent conceptualized; the model of *nuclear opacity*. Israel followed neither of Kent’s two modalities. In fact, Israel was able to maintain opaque regional nuclear monopoly by deliberately defying the conventional modes of joining the nuclear club—that is, without testing or even acknowledging its nuclear status.

Opacity, ambiguity, vagueness and secrecy were intrinsic to the making of Israel’s nuclear posture. This pattern, of course, was not utterly unique to Israel, but in no other country’s case did it ultimately become the nation’s trademark. Israel is the only nuclear weapons state, among all of today’s nine nuclear weapons state which is firmly committed to a policy and posture (not shared even by North Korea), of opacity—total non-acknowledgement and secrecy.

More than half a century after the initiation of the Israeli nuclear program, and more than four decades after Israel crossed the nuclear threshold, it is worthwhile to revisit Kent’s forecast. Specifically, there are two sets of questions that are worth exploring. First, how did Israel invent nuclear opacity? Second, what was the regional impact of Israel reaching nuclear monopoly?

That is, what has been the impact of Israel’s regional nuclear monopoly on the dynamics of the Arab-Israeli conflict, in particular on the dynamics of war and peace in the region over nearly a half a century?

This chapter is divided to two basic parts. First, it narrates historically the formation of Israel’s unique posture of opacity, to be contrasted against the “standard” model by which other states acquired nuclear weapons. Second, it carefully examines the impact of Israel’s opaque nuclear monopoly on the dynamics of the Arab-Israeli conflict, and in particular on issues of war and peace in a regional context. More than half a century after the initiation

of Israel's nuclear program, and more than forty years after Israel crossed the nuclear threshold, our historical understanding of the impact of Israel's nuclear weapons program on the region is still murky, if not fundamentally lacking.

Israel, as noted, is the only nuclear weapons state committed to a policy of opacity. Even if all the primary historical sources were available to us, it would still be difficult to construe a fair—let alone complete—account of those decisions, due to the veiled and opaque decision-making style. But, of course, almost all the primary sources for Israel's nuclear history—documents and human experience—are still unavailable; they are lacking, silent, or at best incomplete.

Still, there are reasons to think that a few key junctions had an extraordinary impact on the entire evolution of Israel's nuclear posture and style. Those early decisions—each could be viewed as a response to a certain nuclear dilemma—generated legacies that shaped the way Israel acts and thinks on nuclear matters to this day. The story of those decisions is the tale of how Israel created itself as a different kind of proliferator. These were critical points in the making of Israel's special bargain with the bomb. From the start, Israel's nuclear development was ambivalent in nature. As much as Israel's nuclear pursuit was characterized by resolve in the technological arena, it was typified by political caution. Israel's technological commitment was vigorous, but its politics was hesitant, tentative, and non-explicit. The pattern by which Israel made its most fundamental decisions in the nuclear field highlights this schizophrenic calibration between these two opposing forces, technological resolve and political caution.

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## 9. *Iran's Nuclear Program*

Kayhan Barzegar

Since the beginning of the Iranian nuclear standoff in 2002, the conflicting views between Iran and the West over the advance of Iran's nuclear program have taken the issue beyond national policies, including related peaceful energy demands, and connected it to regional and international security issues at large. The main challenge facing Iran and the West in the nuclear standoff is how to strike the appropriate balance between Iran's right to the peaceful use of nuclear energy, guaranteed under the Non-Proliferation Treaty (NPT), and the possibility of weaponization.

The Iran-West standoff can be divided into three periods. First, the period of ambiguity and distrust (2002–2006): it was in 2002 that the West revealed concerns regarding the advance of the Iranian nuclear program. In this period, the two sides engaged in nuclear negotiations aimed at distinguishing each other's goals and wishes and reaching a solution. The turning point in this period is related to the voluntary suspension of uranium enrichment by Iran during the period 2004–2006. In this respect, the EU's failure to solve the Iran nuclear question finally led to the suspension of negotiations and the resumption of Iran's enrichment process.

Second, the confrontation period (since 2006): in this period, the two sides attempted to carry out their respective objectives, a trend which has since continued as Iran insists on its right to enrichment. Iran's enrichment activity is centered on enriching uranium to the level of 3.5 percent, but uranium enrichment reached only 20 percent after the country was denied access to fuel for its Tehran Research Reactor (TRR). The West stepped up its political and economic pressures, bringing along the adoption of more sanctions, including Resolution 1929 of the UN Security Council. The main challenge during this period was the prevailing distrust between the two sides. Iran's concern was based on the assumption that the goal sought by the West, particularly the United States, through negotiations was the complete cessation of the Iranian nuclear program. For its part, the West was worried that Iran's ultimate goal was indeed access to nuclear weapons. Despite varying initiatives by both parties in the form of negotiating packages, neither side was able to bridge the divide and therefore negotiations yielded no results.

Third, and most recent, was the confrontation and interaction period, starting in October 2009 with the discussion regarding the swap of Iranian enriched uranium for the Tehran Research Reactor (TRR) in Turkey, and continuing to the present (March 2011). Iran has insisted that in addition to the nuclear issue, the negotiations should be widened and include other related strategic issues between the two sides. Iran's readiness to negotiate with the West is based on acquiring nuclear "capability" and reaching the point of no return. The leverage used by the two—Iran's continuing enrichment and the West's persisting adoption of international sanctions against Iran—compels both sides to interact with each other. At this stage, both sides are attempting to enhance their bargaining positions in order to maximize their advantages in the nuclear negotiations.

This chapter examines how a long precedent of nuclear activities—simultaneously attaining different economic, technological, development, identity, and political goals—turned the Iranian nuclear program into a national and strategic issue for the country. It also discusses how there is correlation and interdependence between different aspects of domestic, regional, and international politics dimensions of Iran's nuclear program. Domestically, the most important principal in the Iranian nuclear program, "uranium enrichment" on Iranian soil, has created a near political consensus among the security-political elites toward direct and comprehensive talks

with the US in the regional and international spheres and toward prioritizing the strategic and national security issues of the country's foreign policy.

At the regional level also, the Iranian nuclear program is interdependent with regional politics. This is due to the nature of the Iranian nuclear program, which is connected to the economic, security and political issues in the region and, as a consequence, to the relations with the regional and trans-regional players. From this perspective, the Iranian nuclear program has increased the desire of regional states to make use of peaceful nuclear energy for the purposes of sustainable development and economic growth. Meanwhile, the Iranian nuclear program stands in direct relation to deceleration or acceleration of the arms race and to the preservation of the traditional regional balance imposed by foreign powers. The second subject at the regional level is the regionalization of Iran's nuclear program. This Iranian policy is aimed at tying its security to that of the Middle East, and the world at large, through the nuclear issue. It attempts this by creating "strategic political parity" in the nuclear talks with the West, legitimizing peaceful nuclear activities at the regional level by supporting the expansion of the nuclear activities of other regional states, and proposing collective and comprehensive security measures in regional issues.

At the international level, the interdependence between the policies of trans-regional actors in world issues and the NPT, and their approaches in dealing with the Iranian nuclear program, is also examined. The US is introduced as a state that views the Iranian nuclear program based on deterrence and as a threat to its national security. The US has also become the main proponent of bringing Iran's nuclear program to a halt. The EU (Germany, France, and the UK), which mainly views the Iranian nuclear program through the prism of non-proliferation, is considered by Iran as an intermediary actor with a view to strengthening the diplomatic approach. Russia and China, which rely on strengthening the legal status of the IAEA on the Iranian nuclear issue, are considered balancing actors in promoting the Iranian nuclear program. Finally, Turkey and Brazil are taken by Iran to be new actors in the field of diplomacy, which stress the legitimacy of peaceful Iranian nuclear activities.

In conclusion, the main challenge facing Iran and the West in the nuclear standoff is how to strike the appropriate balance between Iran's right to the peaceful use of nuclear energy guaranteed under the NPT and the possibility of nuclear weaponization. This standoff will only be settled through a win-win strategy: recognition of the right to enrichment on Iranian soil by the West (a win for Iran) and provision of the necessary assurances on the side of Iran for non-diversion (a win for the West).

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10. *A Nuclear Weapons Free Zone in the Middle East*  
Gawdat Bahgat

Since the late 1960s Israel has been widely considered to be the only nuclear power in the Middle East. Israeli nuclear monopoly has left the Iranians and Arabs with a deep sense of inferiority and vulnerability. They see Israel's nuclear arsenal as a threat to their national security and a symbol of Jerusalem's technological superiority. Little wonder, some of the Jewish state's neighbors have pursued a two-fold strategy—acquire their own nuclear weapons or pressure Israel to dismantle its nuclear-weapons capability. Despite substantial human and financial investments, none of Israel's adversaries has succeeded in developing or acquiring such capability. On the other hand, the voices calling on Israel to dismantle its presumed nuclear weapons program and join the Non-Proliferation Treaty have become more vocal in the last several years.

In the last few decades, five nuclear weapons free zones (NWFZ) have been established covering a large proportion of the world and expanding from Africa to Latin America. Naturally, policymakers and security analysts have sought to reach a similar arrangement in the Middle East. As early as 1974, Egypt and Iran called on making the entire region a nuclear weapons free zone. In 1990, then President Mubarak of Egypt expanded the call to include all weapons of mass destruction. The United Nations General Assembly issued several resolutions along these lines and an international conference is scheduled for 2012 to pursue this goal.

This chapter examines the concept of a nuclear weapons free zone and the regional and international efforts to create such a zone. Briefly, the chapter discusses the five nuclear weapons free zones: the Latin and Caribbean NWFZ (the 1967 Treaty of Tlatelolco), South Pacific NWFZ (the 1985 Treaty of Rarotonga), the Southeast Asian NWFZ (the 1995 Treaty of Bangkok), the African NWFZ (the 1995 Treaty of Pelindaba), and the Central Asian NWFZ (the 1997 Treaty of Semipalatinsk). The chapter also analyzes the role of global powers in providing positive and negative security assurances.

Despite the relative success of these five NWFZs and the sincere efforts to establish a similar one in the Middle East, reaching this goal is not likely in the foreseeable future. Simply stated, the gap between the Israelis' perception of their national security and that of the Arabs and Iranians seems quite large and probably unbridgeable in the current strategic landscape.

Israel has always adopted a skeptical view of global arms control and disarmament treaties, and its leaders have always stressed that the proliferation of Weapons of Mass Destruction (WMDs) in the Middle East will have to be handled within a regional framework. They present their country's presumed nuclear capability as a deterrent, helping to stabilize the Middle East. Furthermore, Israeli leaders argue that their nuclear arsenal, along with conventional weapons superiority, has reinforced the notion that Israel has become an indispensable part of the Middle East landscape and reduced the incentives for all-out war against the Jewish state.

Against this background, Israeli leaders have repeatedly made a comprehensive peace between Israel and all Arab states and Iran a prerequisite to joining a NWFZ in the Middle East. Israel, they insist, would only cede its nuclear option if all its neighbors recognized and engaged in diplomatic and commercial ties with it. In other words, peace treaties would not be sufficient. Israelis require complete normalization of relations to ensure full acceptance from their neighbors.

On the other hand, although there is no single united Arab-Iranian approach to a NWFZ in the Middle

East, most Arab states share similar sentiments. They do not see the Israeli nuclear arsenal as a “weapon of last resort” or an “insurance policy” ensuring Israel’s survival. Military asymmetry, and particularly Jerusalem’s nuclear capability, is seen in Tehran and most Arab capitals as enforcing the occupation of Palestinian and other Arab territories and a threat to regional security and stability. Again, the fact that Israel is the region’s only presumed nuclear power underscores and feeds a sense of Arab and Iranian technological and military inferiority.

Iranian and Arab governments accuse Western powers of applying a double standard regarding Middle Eastern nuclear proliferation. From Arab and Iranian perspectives, the United States and major European powers have allowed—even assisted—Israel in acquiring nuclear weapons, but have strongly resisted Arab and Iranian attempts to develop similar capability. Many Arab officials have argued that so long as Israel maintains its nuclear option, Iran and other regional powers will have incentives to seek similar capabilities. Accordingly, the most effective way to deal with Iran’s nuclear ambition, some Arabs argue, is to pressure Israel to dismantle its nuclear weapons and join the Non-Proliferation Treaty (NPT).

In recent years, three more inter-related developments have added more uncertainty to this delicate security environment. First, Iran has made steady progress in both indigenous uranium enriching and missile production. Targeting Iranian nuclear scientists, cyber attacks against Iranian nuclear facilities, and economic and diplomatic sanctions seem to have slowed, but not stopped, Iran’s nuclear program. Second, several Arab countries have expressed interest in developing peaceful nuclear power. The lines separating civilian and military uses of nuclear power are blurred.

It is too early to provide any accurate assessment of the so-called “Arab Spring,” but it is probably fair to assume that several Arab countries are currently more concerned about domestic stability than the nuclear issue. On the Israeli side, faced with growing uncertainties in Egypt, Libya, and Syria, Israeli leaders are likely to choose a “wait and see” approach rather than engaging in serious discussion about nuclear proliferation in the Middle East.

To conclude, addressing these uncertainties and creating the right environment for a comprehensive and durable peace will take a long time. In the short- and medium- terms, Middle Eastern states need to implement confidence-building and arms control measures that would reduce the underlying causes of violence and war. They need to engage in mutually beneficial economic and cultural relations. A slow down or containment of conventional arms-races would enhance prospects for regional peace.

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