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Introduction to the Issue: Energy and International Relations

Mert BİLGİN*

Current issues in regional and global energy include a myriad of challenges and opportunities. This special issue on energy policy and international relations brings out academic findings on factors that affect various processes of energy business, energy diplomacy, and energy economics with reference to the theory and policy-making aspects of international relations. Normative, qualitative and quantitative methodological approaches are used by the authors, who have focused on various aspects of the link between energy and international relations with reference to "fossil fuels, nuclear and renewable energy", "oil prices", "energy investments", "legal and normative frameworks", "the impact of shale", "environmental restraints and challenges", "the rise of natural gas as a remarkable energy security parameter and yet with further geopolitical competition", "capabilities and restraints of natural resource-based economies and their power politics", "conventional and unconventional production", "energy cooperation at regional and global scales", and "energy transport and transit corridors".

Contributions from distinguished scholars elaborate on these fundamental and current issues within the following order based on topic:

My article, entitled "The Shale Revolution and Beyond: Has Turkey Faced the Consequences of US Energy Transition?" elaborates on Turkey's energy policy with regard to the intervening variables stemming from the energy transition in the USA. I compare the basic characteristics of the energy transitions in Turkey and the

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USA, and then intertwine particular restraints and goals with reference to contextual changes in selected regions and issues.

Hayriye Kahveci Özgür focuses on Eastern Mediterranean hydrocarbons from an international relations perspective in her article entitled "Eastern Mediterranean Hydrocarbons: Regional Potential, Challenges Ahead and the Hydrocarbon-ization of the Cyprus Problem". The article not only looks at issues of oil and gas with reference to political, economic and legal aspects, but also highlights how oil and gas intersect with the ongoing Cyprus issue.

Şebnem Udum's article, entitled "Nuclear Energy and International Relations: Outlook and Challenges for Newcomers," deals with diverse aspects of nuclear energy with a particular focus on the economic and technological features while drawing attention to the issue of nuclear weapons as a means of power in international relations. The article takes nuclear energy and nuclear weapons as important drivers of international relations that entail distinct features.

Nurşin Ateşoğlu Güney analyzes Turkey's nuclear energy initiative as a case study in her article entitled, "Where Does Turkey Stand in the Quest for Civilian Nuclear Energy in the Middle East?". The article explores the similarities and dissimilarities of Turkey's nuclear energy program with reference to selected countries in the region. It points out how the project models of particular countries lead to distinct paths within the diverse types of civilian use of nuclear energy, thereby affecting international relations.

Emre İşeri and Defne Günay bring out the significance of climate change within energy policies in their article entitled "Assessing Turkey's Climate Change Commitments: The Case of Turkey's Energy Policy". The article particularly deals with the case of Turkey, and yet its findings offer important highlights for other cases too. This is because it focuses on climate change as a security variable with regard to environmental, economic and political parameters.

Finally, Rovshan Ibrahimov compares Azerbaijan and Turkmenistan, by using the link between energy (oil and gas in particular) and power politics, in his article entitled "Energy and Power Politics in the Cases of Azerbaijan and Turkmenistan". The article

elaborates on issues of oil and gas in order to map the regional and global positions of Azerbaijan and Turkmenistan by benefitting from the power terminology of international relations.

This special issue on energy policy and international relations brings out academic findings on factors that affect various processes of energy business, energy diplomacy, and energy economics with reference to the theory and policy-making aspects of international relations.

These articles that have been brought together to constitute this special issue on energy and international relations channel significant findings in terms of theory, practice and policy-making.

I would, therefore, like to take this opportunity to thank the authors, referees and the editorial office, whose full commitment and common work to attain the best possible research on particular issues of energy and international relations, resulted in this very special issue; clearly reflecting the value of author expertise in energy and international relations…

The Shale Revolution and Beyond: Has Turkey Faced the Consequences of US Energy Transition?

Mert BİLGİN*

Abstract

This article differentiates substantial factors from circumstantial ones in order to map the degree of their significance for Turkey's energy policy with highlights concerning Turkey's foreign policy. It primarily focuses on the consequences of US energy transition, in which the shale revolution plays a dominant role, as one of the most significant sources of the substantial change with a direct influence on global energy, Turkey's energy strategy and, therefore, indirectly on Turkey's foreign relations. It is not meant to simply identify substantial changes with one independent variable as if they are mere consequences of the US energy transition. The article aims at bringing out the technological, economic and geopolitical features of US energy transition in order to point to their interactions with Turkey's international relations in general, and Turkey's energy strategy in particular. This problematic deserves a further, in-depth analysis, not only because there is a lack of research on the impact of the US shale revolution and US energy transition in terms of their consequences at the domestic, global and international levels, but also because it may highlight policy options concerning energy strategy and foreign relations in due course.

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Key Words

Shale revolution, US energy transition, Turkey, energy policy, foreign policy.

Introduction

Supply security is the main driver of Turkey's energy strategy. Turkey attributes a special priority to the availability of resources at affordable costs with the least possible environmental and socio-economic negative externalities.[1] This article, however, points out that some effective factors, leading to the actual characteristics of Turkey's energy supply security, have been changing at regional, national, international and global levels.[2] These factors are assumed to emerge as circumstantial and substantial changing variables that might help in pointing out to what extent Turkey's energy strategy is likely to be affected in terms of individual policy priorities. Since it is practically impossible to include all of the independent variables, and label them as being circumstantial or substantial

factors, this article will refer to the consequences of global energy supply-demand correlation with a particular focus on the concept of energy transition in the USA and Turkey.

In terms of hypothetization, the article refers to the consequences of the shale revolution, and the energy transition in the United States of America (USA), as a substantial factor, with direct effects on domestic priorities on the one hand, and global and international factors on the other. Some studies indicate that the expected increase in production from shale in the USA will result in a major shift in the global order.[3] This article acknowledges the significance of the shale revolution, and considers it as an important driver in the US energy transition that deserves a further look. The US energy transition, and the role played by shale within this transition, emerges as an important factor domestically and globally.[4] The energy challenge is definitely one of the most significant issues that made the USA take historically vital decisions with worldwide spillover effects.[5] Domestically, the USA has faced the necessity of attaining an energy mix to avoid the risk of an external dependence on oil and gas while coping with environmental risks.[6] Globally and internationally, the USA faced the political outcomes of great and rising powers fueled by energy revenues.[7] It was therefore indispensable for the USA to extract shale reserves, increase oil and gas production, accelerate its shale based energy transition, become a key player in global energy, and re-define its international relations with great and emerging powers in Latin America, Eurasia, Asia, the Middle East and Africa.

The article seeks to bring out the technological, economic and geopolitical features of the US energy transition, and their actual and contingent interactions with Turkey's energy security and foreign policy.

This article, however, does not intend to expose the US energy transition as if it is the only independent variable causing drastic changes at the domestic, global and international levels with direct influences on Turkey. Rather, it aims to explore the interactions between the energy transition in the USA, its domestic priorities, and in turn, relevant global and international structures, some of which are assumed to be effective on Turkey's energy security and international relations. In this way the article seeks to bring out the technological, economic

and geopolitical features of the US energy transition, and their actual and contingent interactions with Turkey's energy security and foreign policy.

Conceptually, the term 'Turkey's energy strategy', or policy, in this article, will be used as to identify the state's official energy viewpoint with reference to those relevant state and non-state actors that interact within liberal market rules and which are highly responsive to actual energy security factors such as the volume, time and money needed to secure the energy of the country.[8] The analysis will not be about the trend in energy mix or targets set by the government as in the case of Turkey's 2023 energy vision, which aims to supply 30% of electricity demand from renewable energy sources, establish two nuclear power plants (with 10,000 MW installed capacity), and increase the use of domestic coal to balance extreme dependence on the imports of fossil fuels.[9] It will be about the strategic priorities. The article assumes that the current and former energy security documents released by the Turkish Republic Ministry of Energy and Natural Resources (MENR, thereafter) consider state and non-state aspects of energy security within well-defined legal and market frameworks. It, therefore, identifies Turkey's energy strategy, or policy, not only with these documents, but also with the state and non-state actors, issues and priorities clustered, mentioned or referred by them. As to the US energy transition, the article assumes that, unlike Turkey, where long-term strategic outlook stems from actual market trends, the US energy transition proves to be more responsive to technological change so far as it contributes to supply security and cost efficiency, both to support manufacturing sectors and to increase the employment rate. Technology, from this perspective, appears to be the driving factor of US energy transition.[10] The role of technology in US energy transition fundamentally differs from Turkey, where appropriate technology is being sought for the desired energy mix or concerned projects.[11] This is why the article assumes that official energy strategy in the US has an extensive and a complicated web of interaction between state and non-state actors, which can be best reflected with reference to Congressional bills and acts.[12]

Methodologically, the article will identify Turkey's energy security with reference to strategic documents released as MENR 2010-2014[13] and MENR 2015-2019[14] strategic plans. These documents are selected because both not only stem from the energy supply security definition mentioned above but also include relevant non-state actors while attempting to

combine geographic factors within Turkey's energy strategy. As for the US case, the article examines the legal acts released by Congress from 1927 to nowadays, since they are the legal frameworks that define strategies and policies in due course and reflect the necessities emerging from technological developments or changing market dynamics. The article will therefore point out strategic pillars and priorities of Turkey's energy security from strategic official documents and match them with contextual factors in terms of circumstantial and substantial changing variables, for which the US energy transition is assumed to be one of the main inputs.

The US energy transition, from this perspective, proves highly applicable for the aim of this article because this transition has helped the US boost oil and gas production, increase the installed capacity of renewable resources, while managing the share of other fuel types with a great deal of significance attributed to nuclear. The US energy transition therefore, leads to a substantial impact on oil prices, gas spot prices, contractual terms of gas deals, LNG markets and electricity industry while supporting non-energy manufacturing sectors, sustaining a competitive advantage based on relatively low electricity prices, increasing oil and gas exports, and enabling the US to hold a diplomatic advantage in relations with big oil and gas producers around the globe. The impact of US energy transition on global energy and its indirect influence over Turkey's energy policy and foreign relations, therefore, deserves a further in-depth analysis.

Turkey's Energy Strategy and Foreign Relations

Energy Policy and Foreign Relations

Turkey's foreign relations entail a myriad of historical continuities each connected with a diplomatic issue.[15] The way Turkey can use energy, as a foreign policy tool, is extremely limited. Turkey definitely differs from energy exporting countries such as Saudi Arabia, Iran, Azerbaijan and Turkmenistan, whose foreign policies have been based on issues of energy production, transportation and marketing. Turkey's being a net energy importer, with extreme dependence on imported fossil fuels, appears as an important restraint that limits foreign policy building on energy. Turkey also differs from big powers such as the USA, Russia and China, which can directly affect global markets, build regional energy trade systems and relevant foreign relations in due course by virtue of their economic,

technological, military and political capacities along with their extensive ability to affect global energy supply and demand. Turkey, in the meantime, differs from its European counterparts, as in the case of the UK, France, Italy, Germany and the Netherlands, which have a more efficient energy mix with well established relations on the one hand, and more efficient energy trade relations in diverse forms, by virtue of their state and non-state energy companies on the other.[16] In short, energy is an important driver of the foreign policy processes of these and other countries, which, unlike Turkey, benefit from at least one of the following characteristics:

Turkey definitely differs from energy exporting countries such as Saudi Arabia, Iran, Azerbaijan and Turkmenistan, whose foreign policies have been based on issues of energy production, transportation and marketing.

i) Vast potential to export primary or secondary energy;

ii) State or non-state companies channeling at least one competitive advantage such as vertical integration, market capability, financial capacity or technological development into a foreign policy tool;

iii) A sound and diversified energy mix which produces desirable average costs and manageable environmental externalities.

How can we define Turkey's position in the link between energy strategy and foreign policy? Turkey lacks a vast potential to export fossil fuels or non-fossil fuels. Despite the fact that Turkey has a liberal energy market, and a remarkable industry with competitive state and non-state companies, it is less likely, in the case of Turkey, to talk about integrity between energy deals and foreign policy priorities--with a few exceptions. Turkey's success in energy diplomacy, alongside the corporate strategies of private and state energy companies, have resulted in long-term bilateral and multilateral relations with diverse parties, including the concerned states, companies, and non-state institutions.[17] Energy, within this structure, does not emerge as a foreign policy tool but as an economic means to foster foreign relations by keeping bilateral and multilateral relations functioning even in times of diplomatic crises.

What about Turkey's energy mix? Do flaws in energy supply security affect the link between energy strategy and foreign relations? They indeed do.

Turkey's energy mix, as with consumption, has been characterized by the dominance of fossil fuels (coal, oil and gas), growing shares of renewable sources (mainly hydro followed by wind, sun and geothermal), non-existence of nuclear power plants, and very limited share of biofuels.[18] Turkey's energy mix has been less diversified, to the detriment of nuclear and renewable, on behalf of oil and gas, when compared with many other countries as well as with OECD and European averages.[19] Turkey's energy mix, therefore, emerges as an important restraint in political terms, and causes a huge burden in economic and environmental terms, and yet the flaws also lead to paths for additional investments and international agreements. Turkey's dependence on Russia in the energy sector appears as another fact with positive and negative influences. On the one hand, dependence on Russia, and the characteristics of energy trade relations with Russia, define the scope of new agreements with other countries. From this perspective, one can easily conclude that Turkey's dependence on Russia is a factor that limits Turkey's capacity to benefit from the link between energy strategy and foreign relations. On the other hand, Russia proves to be a reliable supplier that has never halted energy flaw even during diplomatic crises.[20] From this perspective, Russia supports Turkey's energy supply security while energy relations *per se* appear as an insurance to sustain bilateral relations.

In short, Turkey's flaws in energy supply security are important. They define the characteristics of bilateral and multilateral foreign relations by limiting the policy capacity of the link between energy strategy and foreign relations. This does not, however, mean that Turkey undermines the characteristics of its actual energy mix. On the contrary, the official energy strategy acknowledges the lack of a vast energy potential as given, and aims at overcoming the flaws in the energy mix by state and non-state initiatives on behalf of supply and supplier diversification. This approach has its own limits since the flaws in the energy mix are not simple outcomes of former policy options, but rather occur as the result of Turkey's idiosyncratic economic and demographic features stemming from incessant growth, population increase, urbanization, and changes in consumption patterns.

Building Blocks of Turkey's Energy Strategy

The MENR Strategic Plan of 2010-2014 (SP 10-14) and 2015-2019 (SP 15-19) are similar in terms of structure, assumptions, priorities and policies.[21] The international context however has changed economically and geo-politically, leading to unforeseen developments in economic (e.g. oil and gas pricing) and geopolitical (the international political outcomes of regional and bilateral conflicts) terms.

Turkey's flaws in energy supply security are important. They define the characteristics of bilateral and multilateral foreign relations by limiting the policy capacity of the link between energy strategy and foreign relations.

Supply security concerns over Turkey's incessant growth of energy consumption appear as the main similarity between SP 10-14 and SP 15-19.[22] Supply security, therefore is the main driver of these strategic plans, just like in many other countries. In short; the plans and policy implications are very much concerned with diversification of supplies and suppliers, benefiting more from domestic resources, curbing carbon emissions, increasing efficiency and savings, decreasing intensity, and developing infrastructures and capacities such as reserve, liquefaction, transport, export and re-export of diverse fuels. Increasing the share of renewable sources in the energy mix is an indispensable feature of this target.[23] Policy tools developed for these goals are well designed and are comprised of a cooperation between state and non-state actors not only in terms of supportive legal frameworks for energy investments but also in terms of effective business models.

The second feature, shared by both of the strategic plans, diverges from many other national strategic plans based on the idea of supply security. SP 10-14 and SP 15-19 attribute a special significance to pipeline politics not simply to consolidate Turkey's supply security but also to build mutually beneficiary relations with major suppliers such as Russia, Azerbaijan, Iran, and Iraq, while trying to become an energy hub. This emphasis on the use of pipelines as a means of international politics seems to have a geopolitical aspect, and yet the main driver behind Turkey's energy policy for the past decade has proven to be supply security.

In short, SP 15-19 is the latest official document that defines Turkey's strategic priorities to diversify resources and suppliers, benefit more from domestic resources, increase efficiency and savings, decrease intensity, expand infrastructures and boost capacities such as reserve, liquefaction, transport, export and re-export of diverse fuels. It is similar to the previous one (2010-1014) in its general framework, yet builds upon it by emphasizing energy security flaws in detail as in the case of the need for resource and supplier diversification, the excessive share of natural gas in electricity generation, the inadequacy of savings and intensity, the need for more efficient and sustainable use of domestic resources (especially coal and hydro), and the necessity of further investments in infrastructures, networks and grids.

Turkey's Energy Strategy: Securing Supply in Uncertainty

Turkey's energy security can be analyzed through domestic, global and geopolitical factors.

Although the SP 15-19 does not mention it explicitly, it seems to be aware of growing flaws in energy security much more from an economic perspective as in the case of domestic factors:

i) Turkey's economic growth rate;

ii) Demographic changes (stemming from the rise in population, industrialization, and rapid urbanization);

iii) Changes in consumption patterns (replacement of concrete and stone buildings with energy consuming high towers covered by glass, greater use of electricity heating and cooling systems fueled by natural gas, greater use of individual gasoline and diesel vehicles despite the boost in public transport systems).

These economic factors lead to continuous high growth in energy consumption and happen to be a huge pressure on the MENR by imposing urgency as a primary concern over supply diversity, efficiency and intensity. This urgency is not as much as that of the 1990s, when Turkey was compelled to sign natural gas contracts at higher levels of price formulation when compared with European averages, since it suffered from air pollution in big cities and the risk energy shortage causing blackouts. It yet appears as an important factor that impedes long term planning destined to improve parameters of cost, capacity, efficiency, saving, and intensity while diversifying suppliers and fuel types. These domestic factors are intertwined with a myriad

of global factors, the most significant of which appears as oil price, since it emerges as a function of supply and demand embracing the actual and changing characteristics of energy at any one time. Socio-economic features of global consumption and characteristics of energy supply drive the features along with certain indirect factors, such as economic speculation, political manipulation, or unforeseen fluctuations due to other issues.

What about geopolitical tensions? Turkey's recent history has been characterized by a series of geopolitical tensions, which not only distorted the very foreign policy goal of sustaining regional stability, but also carried the potential to hamper its energy supply security.[24] Geopolitical tensions concerning energy supply security can be clustered in terms of oil and natural gas. Transport from Azerbaijan, Iran and Iraq entailed geopolitical risks of disruption of energy flow, while natural gas from Russia carried out the embedded risk of high dependence on one gas supplier.

Turkey's energy strategy in general, and energy sector in particular, are used to securing supply under an uncertainty that may lead to unexpected consequences, as in the case of fluctuation in oil prices on the one hand, and geopolitical risks and threats that affect Turkey's relations with oil and gas suppliers, on the other. In turn, Turkey has, thus far, managed to secure supply, regardless of the characteristics of geopolitical tensions, as in the case of, but not limited to, international sanctions on Iran and Russia, domestic turmoil in Iraq and Syria, problems between Azerbaijan and Armenia, and tensions between Turkey and Russia or between Turkey and Iran on issues concerning Syria. Turkey and its counterparts have considered energy trade within a distinct compartment, which is expected to sustain bilateral and multilateral relations regardless of the political consequences of geopolitical tensions. Although Turkey's domestic characteristics of energy supply and demand are significant, along with the geopolitical developments in the region, the global aspect of energy security deserves a further look, since it appears as a transcending variable with direct effects Turkey's energy security and foreign relations.

The Shale Revolution and the US Energy Transition

Making Sense of Shale in US Energy Transition

How did the US shale revolution occur? To what extent can a new energy

paradigm based on US priorities be possible?

These two questions deserve further elaboration from technological, economic and geopolitical aspects. The global economic consequences of the shale revolution have indeed turned into a significant issue of research much more from a trade or economic perspective since it leads to direct effects in global oil prices.[25] And yet, the plans and policy implications seem to skip the economic, strategic and geopolitical consequences led by the US shale revolution. Part of the problem stems from the fact that analyses identify US energy transition with the shale revolution, and the shale revolution with horizontal drilling and hydraulic fracturing.

There are two important issues to be clarified while talking about the US shale revolution:

The first one is that the US Shale revolution is a part of an energy mix that includes fossil fuels, renewable resources and nuclear energy.

The second one is that the technological development in the conventional and unconventional production of fossil fuels and renewable energy emerges as the main driver of the production increase in primary and secondary energy.

The technological development in the conventional and unconventional production of fossil fuels and renewable energy emerges as the main driver of the production increase in primary and secondary energy.

Horizontal drilling and hydro fracturing are, for sure, the main technological applications that sustain the boost in shale oil and shale gas production.[26] These techniques paved the way to boost the production in Barnett shale in Texas, Marcellus shale in the Appalachians, the Haynesville shale in Louisiana, and the Fayetteville shale in Arkansas, which together contain enough natural gas to serve all of the US' needs for 20 years or more.[27] Can the USA sustain the production increase from shale further and hold a major player's role in the global political economy of energy in the mid and long runs? This definitely will depend on legal and environmental regulations as much as on development and application of new technologies.

It is likely for the USA to include additional shale gas extraction sites. Further technological development seems possible in oil shale.

The Green River Formation straddling the borders of Colorado, Utah and Wyoming contains oil shale reserve of 1.5 to 1.8 trillion barrels of oil, of which 800 billion are recoverable with three times more than Saudi Arabia's proven reserves.[28] The results of oil shale development are not clearly foreseen yet.[29] The production from oil shale is possible by means of two technologies based on heating. Oil shale contains kerogen, the precursor of crude oil that would have turned into crude oil had it already passed through the geological formation time. Kerogen is a light rock that can be transformed into products such as jet fuel and natural gas liquids. The heat releases crude oil and gas from oil shale kerogen. The mining for surface retorting technology starts by the conventional mining of the shale, followed by heating until the kerogen liquefies. This technology is compatible with the actual standards in mining but due to its carbon intensity, is equally detrimental to the environment as the oil sands of Canada.[30] The in-situ retorting technology developed by Shell and some other companies avoids the hazards of conventional mining and hence fares better *vis-a-vis* the environmental stewardship interest.[31] It applies a ceramic composite material originally used for manufacturing electric cables, which resists high temperatures.[32] Developers drill bare holes and create electrical resistance by laying ceramic-composite cables into the shale. By heating and liquefying the kerogen, they finally extract it by pumping it onto the surface.[33] In the oil shale sector, the cost structure of the mining for surface retorting technology requires relatively high oil prices to make first-of-a-kind commercial complex profitable, whereas the in-situ retorting technology can be competitive at low oil prices above US$ 25 per barrel.[34] Although in-stu rotating, applying ceramic composite material, has not created considerable effects in production yet, the whole process proves to be compatible with the strategic priorities set by the US Department of Energy (USDOE) on the one hand and market characteristics on the other. Oil shale, in the meantime, may pave the way to increase production depending on the availability of resources, necessities of legal frameworks and environmental regulations, and finally low electricity costs.[35] In short, current in-stu rotating technology, which extracts oil shale by benefitting from composite cable technology to heat the kerogen in shale and release oil and gas, ensures the US' capacity to sustain or increase production from shale.[36]

The shale revolution, with reference to actual production of shale gas and the potential carried out by oil shale,

is of utmost significance for the US to increase oil and gas production, sustain an exporter position, became effective in global oil price mechanisms, and create new jobs. As to the technological implications, hydraulic fracturing to extract shale oil and shale gas necessitates a compromise between state and federal level on environmental standards, with the likelihood of granting more options to states, while deciding about individual environmental and ecological commitments. The USA, in turn, considers the energy transition from an integral perspective which attributes a special significance to shale revolution to increase oil and gas production; and to renewable and nuclear energy to balance the environmental externalities at national level in terms of averages, and the mix obtained out of actual fuels to keep electricity prices low, support manufacturing and create new jobs.

The in-situ retorting technology developed by Shell and some other companies avoids the hazards of conventional mining and hence fares better vis-a-vis the environmental stewardship interest.

Phases of US Energy Transition

What are the main characteristics of the US energy mix? First of all, the energy mix represents the actual responses to sustain supply security. Secondly, the energy mix is thought to be the generator of sustaining low electricity prices, creation of new jobs, increasing non-energy manufacturing and balancing environmental consequences. This strategy can be characterized in terms of supply security and low energy prices (and electricity prices in general) to support non-energy manufacturing sectors. The role of the energy sector in creating new jobs and securing more employment has been very effective in the rise of fossil fuels and renewable energy, whereas renewable energy in general (hydro, wind and sun in particular) have been considered as supportive of overall environmental quality along with nuclear energy. Nuclear energy, within this regard, has become an indispensable factor of the link between energy policy and foreign relations since the very beginning of the Atoms for Peace Project.[37]

The shift in the US energy mix, therefore, tells a lot about economic, political, environmental and foreign policy agendas in due course.

Nuclear energy has become an indispensable factor of the link between energy policy and foreign relations since the very beginning of the Atoms for Peace Project.

To start from the very beginning, one should acknowledge the significance of the legal acts from 1920 to 1970.[38] The legal frameworks of this period were mainly concerned with the support for hydropower, networks, oil and gas and nuclear energy. The Federal Water Power Act (1920) supported hydroelectric power; the Public Utility Holding Company Act (1935) defined the size and geographic spread of electric and gas utilities; the Rural Electrification Act (1936) granted loans to expand electrical transmission systems to rural zones by supporting distribution companies; the Natural Gas Act (1938) created a system to apply reasonable rates for transmission and sales of natural gas; and the Atomic Energy Act (1946) defined how nuclear energy and nuclear weapons for peaceful uses could be developed under the civil authority of the US Atomic Energy Commission. These legal acts help in building the main blocks of the US energy mix in terms of nuclear, fossil fuels and renewable resources with an explicit concern over infrastructures, electric transmission systems as well as safety and security.

The second period, from 1970 to 1980, was driven by the urgency of securing energy supply on the one hand, and the necessity to institutionalize environmental regulations over the energy sector under the United States Environmental Agency, on the other. Securing oil, managing prices and strengthening nuclear safety appeared to be the main concerns within this period. The Energy Reorganization Act (1974) detailed institutional responsibilities concerning nuclear power production, nuclear weapon development and nuclear safety. The Energy Policy and Conservation Act (1975) created the strategic petroleum reserve of the US and defined criteria for fuel economy and aimed at regulating oil prices. The Department of Energy Organization Act (1977) founded the Department of Energy in order to manage the duties and responsibilities set in the relevant acts. The National Energy Act (1978) described incentives to support alternative fuel types, energy efficiency, and other measures to avoid contingent outcomes of oil crises. Three legal acts authorized the US Environmental Protection Agency (EPA) in response to the need for institutionalization of environmental regulation in energy: The Clean Air Act (CAA, 1970)

started to regulate air emissions from stationary and mobile sources as federal law and established National Ambient Air Quality Standards (NAAQS) to regulate emissions. The Clean Water Act (CWA, 1972) started to regulate standards for surface waters and discharges of pollutants in the waters. The Toxic Substances Control Act (TSC, 1976) started to regulate chemical substances and/or mixtures, and would be updated by the Frank R. Lautenberg Chemical Safety for the 21st Century Act as of 22 June 2016 (EPA 2017).

The third period started in late 1980, and responded to concerns over supply diversification to include more renewable energy and benefit from technology to boost unconventional production of hydrocarbons and avoid negative externalities such as environmental degradation and hiking food prices. The Energy Security Act (1980) set principles to offer loans, incentives and support to Synthetic Fuels, Biomass, Alcohol Fuels, Renewable energy, Solar Energy and Geothermal Energy but also presumed the study of preventive measures to avoid acid precipitation, set the legal minimum for the Strategic Petroleum Reserve, and indicate clear targets for the production, consumption and import of energy concerning 1985, 1990, 1995 and 2000. The Ocean Thermal Energy Conversion Act (1980) and the Nuclear Waste Policy Act (1982) responded to ecological risks and safe management of nuclear wastes. The Energy Policy Act (1992) and Farm Security and Rural Investment Act (2002) aimed at improvements in issues already defined.

The fourth period refers to the era from 2005 to 2016. It was started by the Energy Policy Act of 2005, which considered energy security from a broad and integral perspective with an interaction between diverse resources. The Energy Policy Act (2005) appeared as a comprehensive legal document to support domestic production of energy and increase efficiency. It described general terms of oil shale extraction on the one hand, and support for nuclear and renewable energy on the other. And yet it did not address, in detail, features and criteria for a sustainable oil shale industry. The main concern of the act was to ensure jobs with secure, affordable, and reliable energy. The rise of the oil and gas industry stemming from the technological innovation in shale extraction created new jobs, contributed to employment while securing the supplies and attaining the capacity to export oil and gas. Nuclear and gas power plants did not only lead to low electricity prices but also contributed to further technological innovation in shale oil production, e.g. in-situ and surface retorting,

by completing a sort of life circle between shale technology, hydrocarbon production and electricity generation; a life circle that decreased electricity costs, gained a cost advantage to the manufacturing sector, thereby creating new jobs and making possible incentives given to renewable energy.

The Energy Policy Act (2005) appeared as a comprehensive legal document to support domestic production of energy and increase efficiency. It described general terms of oil shale extraction on the one hand, and support for nuclear and renewable energy on the other.

The Energy Independence and Security Act (2007) clearly defined standards and measures to build upon savings and efficiency as in the case of increasing the amount of domestic biomass to be used by federal fleet vehicles, increasing energy saving lighting, offering training for green jobs, and supporting business in energy efficiency applications. The Food, Conservation, and Energy Act (2008) supported biorefineries and biofuels with concern over securing food supplies. The American Recovery and Reinvestment Act of (2009) offered an US$ 800 billion economic stimulus package concerned with energy policy as in the case of creating new jobs in energy, granting tax credits to increasing energy efficiency in houses, reducing diesel emissions, and supporting research in conventional, unconventional and renewable energy. The Clean Power Plan (2015) did not only appear as a comprehensive document to manage carbon emissions nationally, but also granted states rights and flexibility to meet their reduction targets.[39] The Clean Power Plan (2015) will directly affect US energy transition by favoring nuclear and renewable gas power plants over fossil fuel-fired power plants that release 31 percent of US total greenhouse gas emissions. It would, indeed, be the first nationwide plan to curb emissions produced by power generators.

The plan, which aimed at making coal plants more efficient, using gas plants more effectively, increasing reliance on renewable and nuclear sources, and improving end use energy efficiency, is a good example of cooperative federalism since it grants the right to the states to formulate their own plans for reducing emissions.[40] The plan, if fully implemented, would lead to a 32% reduction of carbon pollution from the power sector, which will decrease emissions of sulfur dioxide

and nitrogen oxides from power plants by 90% and 72% respectively.[41] According to the EPA, the plan would prevent 3,600 premature deaths, 1,700 heart attacks, 90,000 asthma attacks, and 300,000 missed work and school days every year, while also resulting in climate benefits of $20 billion, health benefits of US$14- US$ 34 billion, and net benefits of US$ 26- US$ 45 billion.[42] The comprehensive plan leading to nationwide commitments has not, however, had the expected effect, since it became more likely for the US Federal Government to keep the traditional approach based on the particular policy choices made by the states rather than applying a top-down spillover effect. This does not necessarily mean that the US has given up on the environmental standards set in the plan. It will turn into a matter of authority of individual states to adopt the most contributive plan in terms of their idiosyncratic priorities and restraints.

As to the Clean Power Plan (2015) and other contingent commitments, it seems more likely for the US to sustain the legal tradition of attributing priority to individual states, rather than adopting a top-bottom environmental approach.

The fifth period, from this perspective, can be considered as 2017 and thereafter, since President Donald Trump's administration acknowledged the Clean Power Plan (2015), but practically dismissed it, by emphasizing the significance of supply security, employment and the rise in manufacturing sectors with reference to fossil fuels, shale in particular, along with other factors of the US energy mix including nuclear and renewable sources.[43] It is therefore possible to say that the US is likely to carry out the energy transition based on the shale revolution, and renewable sources, while sustaining the share of nuclear and other fuels. This transition is expected to contribute to increasing oil and gas production, creating new jobs, keeping electricity prices low and managing environmental consequences. Continuities from the fourth period in terms of the shale revolution, significance of nuclear to keep emissions and electricity costs low, the rise of renewable energy in general and wind and solar in particular at the detriment of coal, are likely to remain in the fifth period.

As to the Clean Power Plan (2015) and other contingent commitments, it seems more likely for the US to sustain the legal tradition of attributing priority to individual states, rather than adopting a top-bottom environmental approach.

The compromise between new jobs, increases in oil and gas production, low electricity costs, the rise of non-energy sector fueled by this structure, and the environmental impact are likely to be treated in general as an outcome of a desirable energy mix composed of conventional fossil fuels, oil and gas produced through conventional methods, hydraulic fracturing, renewable energy and nuclear. To what extent the USA will be able to sustain, and even increase, oil and gas production through conventional and unconventional techniques, will be highly linked to priorities related to environmental issues, creation of new jobs, significance of manufacturing sectors, electricity prices and availability of reserves.

Discussion: Has Turkey Faced the Consequences of US Energy Transition?

Turkey's energy strategy and foreign policy have been challenged by foreseen and unforeseen factors causing drastic effects on its bilateral and multilateral foreign relations. Some of these factors emerged as circumstantial independent variables, whereas, some others gained the characteristics of substantially intervening variables. Among the external variables; the US energy transition based on the shale revolution has played a significant role, and emerges as one of the most significant substantial variables with direct influences on global energy and international relations.

It is possible to highlight relevant intersections between US energy transition and some domestic, global and international factors:

i) Domestic: Electricity prices, job creation, environmental and ecological management;

ii) Global: Oil prices, spot markets and contractual terms;

iii) International: The role of domestic and global features on the US position with regard to Russia, China and the European Union, countries in the Middle East and Africa such as, but not limited to, Saudi Arabia, Qatar, Iran, Iraq, Israel, Egypt, (Greek) Cyprus and Libya, and finally in Latin America such as Brazil, Ecuador and Venezuela.

The interactions among US energy transition, domestic (electricity prices, job creation, environmental and ecological management) and global (oil prices, spot markets and contractual terms) factors prove to have had reciprocal effects, some of which have been mentioned in the previous section.

The structural correlation regarding the international aspect points to important policy issues, and necessitates a further elaboration to respond to the following questions:

Does US energy transition based on the shale revolution entail economic and geopolitical consequences at the global and international levels that may play the role of a substantial variable affecting Turkey's energy policy and position in the Middle East, Eurasia, Europe and Africa?

If so, as this section assumes, how will Turkey, in general, and Turkey's energy strategy in particular, will be affected from the consequences?

To answer these questions, it is necessary to cluster the main characteristics of US energy transition regarding their relationship with domestic, global and international structures, and then point out where and how Turkey's energy strategy and foreign relations with relevant actors take place within this picture. The most practical way of attaining this goal is to start from the most discernible interactions of the USA energy transition, which, in this case, are domestic and global factors, then transform them into a meaningful structure just to bring out the contingent international outcomes as a discussion point.

Domestically, and as discussed in the previous section, the characteristics of the energy mix will drive, or stem from, the economic, socio-economic and environmental priorities. An energy mix based on fossil fuels (coal, oil and gas), nuclear, and renewable energy will be of utmost significance where technological innovation in material sciences is expected to increase supply and efficiency in:

i) Production of fossil fuels (conventional oil and gas as well as unconventional shale oil and shale gas with the likelihood of oil shale);

ii) Renewable energy (wind and solar energy in particular with contingency of an increase in hydro and geothermal).

Characteristics of such an energy mix are expected to make it possible to consolidate the domestic and international policy priorities of the USA.

In terms of domestic priorities, US energy transition is likely to keep on carrying over the former features based on a desirable mix between fossil fuels, nuclear, and renewable energy where innovation in technology and material sciences may add up to the expected value as in the cases of actual production from shale and the contingency of further development of oil shale and offshore wind installations.

Regardless of the hypothetical breakthrough, the current energy mix seems to be potent enough to achieve some of the domestic priorities such as:

i) Creation of new jobs in the energy sector,

ii) Sustaining low electricity prices,

iii) Gaining an export-oriented competitive advantage to manufacturing sectors,

iv) Creation of additional jobs in non-energy manufacturing,

v) Managing environmental and ecological issues at state level with overall desirable consequences at the national level.

The energy mix, and the track of change in the energy transition with substantial structural effects, has been leading to significant consequences at the global level by enabling the USA to benefit from:

i) A global position of oil and gas exporter.

ii) The ability to directly affect the international political economy of global oil prices with secondary effects on spot markets and long-term oil and gas contracts.

From these structural aspects, which seem to be discernable and measurable, it may be possible to move on with strategic spillover effects with reference to priorities that have shaped US foreign policy within the same period:

i) An outsider position with capability to influence global energy. The most significant example of this type can be made with reference to actual limits on the corporate expansion of Russian firms in Europe, Africa and Latin America.

ii) Less dependence on oil imports from the Middle East. This has been resulting in a new approach towards the Middle East and North Africa. This type can be illustrated with reference to US attitudes towards the big oil and gas exporters such as Saudi Arabia, Qatar, Iran, Iraq and Libya and energy exporter incumbents such as Israel, Egypt and Cyprus.

iii) Relatively low electricity prices to support the country's non-energy exports that carry out the likelihood of a new trade relationship with China.

The combination of domestic, global and international features indicates that the shale-based US energy transition has been causing changes in international relations concerning the growing emphasis on the Asia-Pacific region with changing policy towards

Europe, Eurasia, the Middle East and Africa.

It is, therefore, worth mentioning that the policy shift stemming from the US energy transition highly concerns the region around Turkey with spillover effects in Eurasia, the Middle East, North Africa and Europe.

Turkey has established sound energy relations in these regions, in particular, with Russia, Azerbaijan, Iran, Iraq, and Turkmenistan as the main providers. Russia undoubtedly has a privileged position within Turkey's supply security since there is no other country where the share of Russian gas exceeds 50% in total consumption, 50% of which has been used in electricity generation. Turkey, in terms of supply security, tries to diversify supplies and suppliers. To this end, domestic resources, e.g., coal, has been attributed a special significance along with drastic increases in installed capacities of wind, solar, hydro and geo-thermal energy. In addition, Turkey has been trying to construct nuclear power plants in Akkuyu, Mersin in cooperation with Russia, and in Sinop in cooperation with a Japanese-French Consortium. Turkey, in the meantime has been looking for additional gas supplies and pipelines from the Caspian (Azerbaijan and Turkmenistan), the Middle East (Iran, Iraq and Qatar), the Eastern Mediterranean (Israel, Cyprus and Egypt), and Africa (Algeria and Libya), not only for supply security but also to support Turkey's transit capacity to European markets.

Turkey, in terms of supply security, tries to diversify supplies and suppliers. To this end, domestic resources, e.g., coal, has been attributed a special significance along with drastic increases in installed capacities of wind, solar, hydro and geo-thermal energy.

In short, the basic pillars of Turkey's energy strategy and the regional and global relations built upon it, have shown a certain degree of vulnerability to the global and international consequences of the US energy transition from energy supply security perspective, and a considerable degree of vulnerability to the political spillover effects of this transition from a foreign policy perspective.

Does Turkey's energy strategy display readiness for the actual and upcoming consequences of US energy transition? Not exactly, since Turkey needs much more time to overcome the flaws in its energy mix by sustaining an increase in

the share of domestic energy resources (mainly coal and renewable with a contingency of shale), constructing the nuclear power plants, and including new gas suppliers with its domestic energy grid. Turkey's energy strategy is likely to be affected by the global aspect of the US energy transition; which, in this case, will be about the spillover effects of global oil and gas prices on secondary energy. The direct effects of changes in oil prices and indirect effects of changes in spot and contractual oil and gas prices seem to be the most effective independent variables that are highly linked to the role of the US in global energy.

Does Turkey's foreign policy show proven readiness for the actual and upcoming consequences of US energy transition? It can barely be possible to talk about this issue within Turkey's foreign policy, which has been overwhelmingly busy with regional and international problems. It is nevertheless possible to draw attention to some of the changes in bilateral and multilateral relations, since they have shown a definite responsiveness to the global and international consequences of US energy transition.

Conclusion

This article differentiated substantial factors from circumstantial and intervening ones in order to map the degree of their significance for Turkey's energy policy with highlights concerning Turkey's foreign policy. It made a distinction between circumstantial, intervening, and substantial variables by benefitting from a comparative analysis of the roles played by energy transitions in the USA and Turkey.

The article drew attention to the consequences of the US energy transition that has been resulting in significant consequences at the domestic, global and international levels. The US energy transition entailed a continuing significance of nuclear energy with a growing importance of oil, gas and renewable energy, to the partial detriment of coal.

This energy transition was found to be highly effective in the US':

i) Domestic structures (the rise of shale and renewable sectors and their role in the creation of new jobs, the need for keeping electricity prices low to support manufacturing so as to sustain a competitive advantage and contribute to employment);

ii) Global affairs (the willingness and ability of the USA to remain a major oil and gas producer with an influence on global supply, and therefore prices);

iii) International relations (the influence and spillover effects of domestic and global shifts on the US' international relations with countries such as Saudi Arabia, Qatar, Iran, Iraq and Libya and energy exporter incumbents such as Israel, Egypt and Cyprus.

An analysis of Turkey's energy security and relevant foreign policy priorities showed how they might intersect with the consequences of US energy transition in terms of *domestic*, *global* and *international* structures.

i) Domestically, Turkey's official energy strategy has been constructed on security pillars, and yet with continuing flaws that arise from the mismatch between incessant growth in energy consumption and the lack of sufficient domestic resources and inadequate supply diversification. Turkey's energy supply security suffers from the awkward characteristic of its energy mix (dominated by imported fossil fuels and domestically produced renewable energy but not nuclear). The extreme share of imported gas in electricity generation emerges as an important flaw in terms of electricity costs. It is not possible to talk about the role of Turkey's energy transition in creating new jobs or in sustaining a competitive advantage in manufacturing sectors by keeping electricity prices low, which is in contrast to US energy transition.

ii) Globally, Turkey's energy mix results in high vulnerability to short term fluctuations in oil prices and long term changes in contractual prices, not only because of its excessive use of natural gas in electricity generation but also due to insufficient shares of renewable energy and the lack of nuclear energy.

An analysis of Turkey's energy security and relevant foreign policy priorities showed how they might intersect with the consequences of US energy transition in terms of domestic, global and international structures.

iii) Internationally, Turkey's bilateral and multilateral relations with a myriad of energy exporters seem to be affected by the characteristics of the US energy transition and the growing role of the USA in global energy markets and its spillover effects in foreign policy, for at least

the USA has turned into a major oil and gas producer with newly defined interest relations in Europe, Eurasia, the Middle East, Africa, Asia-Pacific and South America.

As to policy findings, not only short-term oil prices, and their effects on spot markets, but also the consequences of the US energy transition on mid-term and long-term pricing of primary and secondary energy, are found to be significant in understanding the capacities of Turkey's energy strategy and relevant foreign policy initiatives in due course. Turkey, therefore, seems to be in need of increasing the economic priorities and conventional criteria of energy supply security so as to better cope with the circumstantial, intervening and substantial independent variables that have been analyzed in this article.

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Eastern Mediterranean Hydrocarbons: Regional Potential, Challenges Ahead, and the 'Hydrocarbon-ization' of the Cyprus Problem

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Abstract

Natural gas discoveries in the offshore Eastern Mediterranean have been the source of regional geopolitical reshuffling. The purpose of this paper is to provide an analysis of implications of those changes on the Cyprus problem. The paper is composed of two main parts. The first part provides an exploration of historical development of hydrocarbon exploration activities in the offshore Eastern Mediterranean. While doing so, a special emphasis has been given on the cases of Israel and South Cyprus. Furthermore, an analysis of the possible export options for the regional potential is provided. The second part of the paper dwells on the implications of all these developments on the negotiation process towards the resolution of the Cyprus problem. It is argued that during the last decade hydrocarbon exploration activities by the Greek Cypriot Administration have had a negative effect at the negotiation table.

Key Words

Eastern Mediterranean, Cyprus Problem, Natural gas, Pipelines, Hydrocarbons.

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Introduction

The discoveries of hydrocarbon resources in the Eastern Mediterranean have raised the question of whether it will be a game changer in the region or not. According to the United States Geological Survey (USGS), the region could hold up to a total of 122 Tcf natural gas.[1] According to BP's 2015 data, global proven gas reserves are approximately 186.9 Tcm.[2] When compared at the global scale, on the one hand it can be seen that the region has a limited global impact. On the other hand, for the regional countries such as North and South Cyprus and Lebanon, which are primarily dependent on imported hydrocarbons for their energy production, regional discoveries will have a game changing impact. The Israeli experience of the past decade in terms of how increased natural gas production decreased Israel's dependence on imported hydrocarbons provides hints of what kind of a regional, geopolitical, economic and diplomatic game changing impact regional resources could have.

There are several challenges standing in the way of the development of regional hydrocarbon potential. In addition to the need for further exploration and discoveries in the region, lack of a clear-cut understanding on the delimitation of the maritime boundaries, an established export mechanism to international markets, and uneasy regional relations can only be listed as some of the challenges that may keep the Eastern Mediterranean from reaching its full potential.

Due to its geopolitical position, hydrocarbon potential, and existing and potential conflicts, the island of Cyprus is located at the very heart of various monetization scenarios being proposed for the development of an Eastern Mediterranean export mechanism.

Due to its geopolitical position, hydrocarbon potential, and existing and potential conflicts, the island of Cyprus is located at the very heart of various monetization scenarios being proposed for the development of an Eastern Mediterranean export mechanism. That is why not only Turkish and Greek Cypriots but international circles as well have tied the resuming of the talks to the recent hydrocarbon findings in the region.[3] Nevertheless, only eight months after the restart of the talks, the slowly progressing negotiations came to an end as a result of heightening tensions stemming from an offshore hydrocarbon exploration duel between the two sides. The purpose of this paper is to focus on how the hydrocarbon exploration activities of the Greek Cypriot Administration have evolved as a political tool to gain leverage over the negotiations of the Cyprus problem. For this purpose the article will particularly focus on the sixth round of Cyprus negotiations, which resumed on 11 February 2014, and will try to show how at various stages of the negotiations the hydrocarbons issue has been used as a game breaker at the negotiation table.

Eastern Mediterranean Hydrocarbon Potential and Possible Export Options

As of April 2017 the only proven reserves of the Eastern Mediterranean region were those of Syria and Israel. Syria has 2.5 billion barrels of oil and 8.5 Tcf of proven onshore natural gas reserves.[4] On the other hand, since 2009, Israel has made successful discoveries in its offshore space. Its proven oil reserves are 11.5 million barrels and natural gas reserves are 10.1 trillion cubic feet.[5] Reserve estimates

Table 1: Off Shore Natural Gas Discoveries in the Eastern Mediterranean

Country	Discovery date	Field name	Estimated reserves (Tcf)	First volumes
Cyprus	2011	Aphrodite	4,5	2017
Israel	1999	Noa	0.04	2012
	2000	Mari-B	1.5	2004
	2009	Dalit	0.5	2013
	2009	Tamar	10	2013
	2010	Leviathan	18	2016
	2011	Dolphin	0.08	Unknown
	2012	Shimshon	0.3	Unknown
	2012	Tanin	1.2	Unknown
	2013	Karish	1.8	Unknown
Palestinian Territories	2000	Gaza Marine	1	Unknown

Sources: EIA estimates, IHS, Oxford Institute for Energy Studies, *Oil & Gas Journal*, company reports, trade press.

for the Israeli discovered nine offshore fields suggest that total estimated recoverable reserves are around 30Tcf [6](see Table 1 below).

Although the full reserve potential of the Eastern Mediterranean region is still ambiguous, existing Israeli discoveries, together with the Cypriot discovery of the Aphrodite field, have triggered a debate over potential export routes for the region. After a decade of exploration activities in the region three main options have been developed: Pipelines, LNG Terminals, and Compressed Natural Gas Terminals.

Over the last decade three pipeline scenarios were proposed (see Figure 1): the Israel-Cyprus-Greece (also known as EastMed) Pipeline; the Israel-Turkey Pipeline; and the Israel to Neighboring Arab Countries (namely Egypt, Palestine and Jordan) Pipeline.[7] Raised by the Greek Cypriot Administration and Greece in order to eliminate any possible Turkish involvement in the Eastern Mediterranean energy, the Israel-Cyprus-Greece Pipeline is the longest and most challenging in terms of finances and technological requirements. For the time being,

although the project is listed among the projects of common interest to the European Union, it is argued to be the least possible pipeline option.[8]

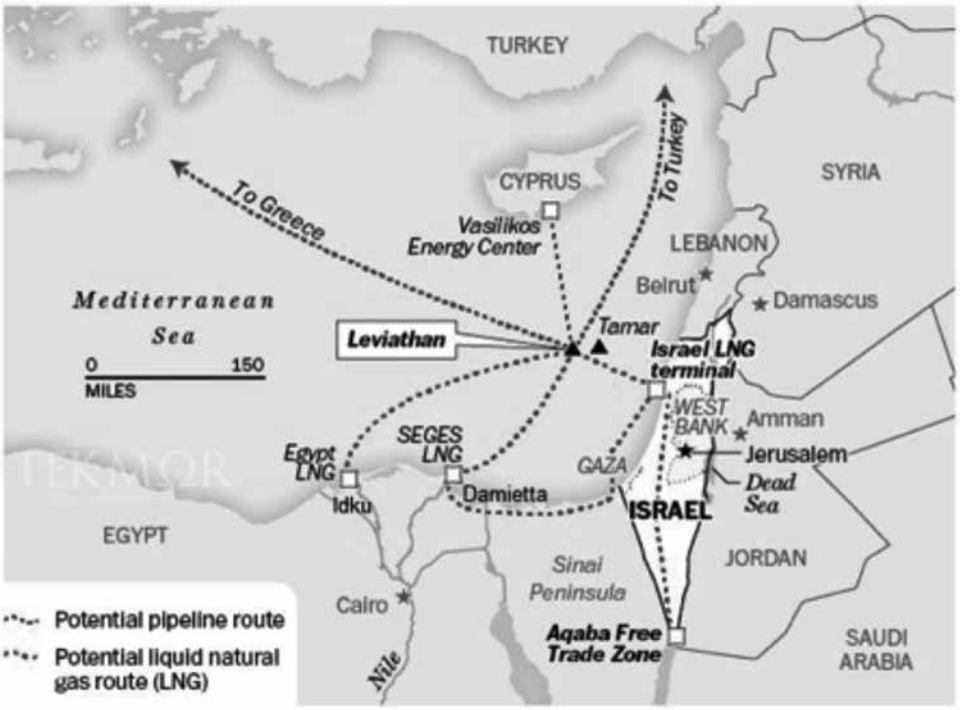
The second one is the Israel-Turkey pipeline. This pipeline is shorter and argued to be most feasible export option for the regional potential[9]. Continuation of the Cyprus Problem, given that a possible pipeline could either pass through the island or its offshore, presents a serious obstacle. Furthermore, for the last decade, damaged relations between Turkey and Israel, especially after the Mavi Marmara Crisis of May 2010, present another serious geopolitical barrier facing this project[10]. Improving relations between Israel and Turkey since June 2016 have increased the chances for realization of this project as long as the market conditions are ripe and a peaceful deal could be reached with the Greek Cypriot[11] administration.[12]

The first two options were developed in such a way as to incorporate the Cypriot potential. Despite the fact that Cyprus and Israel had parallelisms in the Eastern Mediterranean hydrocarbon game, as time passed it seems that due to numerous reasons, Greek Cypriots are lagging behind Israel in terms of taking the lead in determining the export regime for the region. It is possible to list low appraisal results, severe economic crises, inability to attract investors for its grand Vasilikos LNG Terminal project, and lack of improvements regarding the resolution of the Cyprus problem as being only some of the reasons pushing the GCs to the sidelines in terms of pioneering the East Med export regime.[13]

The third pipeline option is the one which does not directly require Cypriot involvement.[14] It involves development of Israeli potential and an export regime independent of developments regarding the Cyprus Problem and exploration activities. It is planned that Israeli natural gas could be exported to Egypt through already existing pipeline infrastructure, namely the Arish-Askhelon pipeline, where new sections could be built to supply Jordanian and Palestinian demand.[15] Nevertheless, bearing in mind the nature of Israel-Egypt relations as well as the new 30Tcf Zohr discovery of ENI on the Egyptian offshore, this option cannot be counted on as the sole export regime for Israel.[16]

In addition to pipelines there are various scenarios being discussed regarding the use of LNG terminals for the export of regional potential. Especially due to increased demand in the Asian markets as a result of the Fukushima explosion, experts and policy makers quickly suggested that the best early export strategy for the region could be

Figure 1: Pipeline Scenarios for Eastern Mediterranean Hydrocarbons



Source: Tekmor Monitor, at http://tekmormonitor.blogspot.com.cy/2016_10_02_archive.html (last visited 29 June 2017).

through LNG terminals. However, in a region like the Eastern Mediterranean, it was not possible to proceed as quickly as global markets demanded. The main problem revolved around the issue of where to build the LNG terminal. Several suggestions evolved over time, ranging from the onshore to offshore LNG terminals either in Israel or Cyprus. Building a LNG terminal offshore or onshore Israel was felt by many to be too risky.[17] While the onshore LNG terminal in Vasilikos Cyprus seems to be the most discussed and highly promoted option on behalf of the Greek Cypriot Administration and Greece, for the time being it seems to be a distant option. Reasons for this have much to do with the geopolitical conditions and low outcomes of the Aphrodite appraisals.

In terms of the LNG option, Israel has been testing the possibility of following an independent route that

does not necessarily require Cyprus involvement. In this regard, instead of an onshore LNG terminal, an offshore LNG terminal (FLNG- Floating LNG Terminal) was put out for discussion. Nevertheless, failure in early 2014 of the longstanding negotiations between Australian LNG giant Woodside and the Israeli government, decreased natural gas prices in the market, and inability of the Israeli leadership to establish a clear consensus on what to do with Leviathan field, postponed the FLNG option to a further date.[18]

Especially due to increased demand in the Asian markets as a result of the Fukushima explosion, experts and policy makers quickly suggested that the best early export strategy for the region could be through LNG terminals.

The last option discussed is Compressed Natural Gas (CNG). This is an untested and expensive option.[19] Although discussed during several international workshops, currently none of the parties are opting for a CNG choice for real. For the time being all of the above options are bound to the development plans of the Israeli Leviathan field and further possible discoveries in the region.

Cyprus Exploration Adventure

Israeli discoveries have been encouraging in terms of the GC administration's decision to dwell more on hydrocarbon exploration activities in its claimed Exclusive Economic Zone. Until April 2007, the hydrocarbon exploration adventure of the GC administration evolved as a series of actions. While on the one hand a legal framework was developed, on the other hand technical seismological dossiers were prepared in order to set the stage for opening up of the hydrocarbon explorations tenders. Up until April 2017 three exploration licensing rounds have been implemented. Throughout the process an extensive publicity campaign has also been launched in order to attract international attention to the Cypriot offshore.[20] This section aims to provide a brief historical sketch of the activities taken by the GC administration's hydrocarbon exploration activities.

The initial step taken by GC leadership was the establishment of a necessary legal framework for hydrocarbon exploration activities both at the international and domestic levels. The

Eastern Mediterranean region was a Pandora's Box in terms of maritime boundaries. Mainly because of its geographical as well as geopolitical conditions, there was no clear-cut Exclusive Economic Zone delimitation agreement between the regional countries.[21]

At the international level, the GC administration initially engaged in a series of Exclusive Economic Zone (EEZ) delimitation agreements with Egypt (2003), Lebanon (2007), and Israel (2010). This was coupled with the division of the so called GC EEZ into 13 exploration blocks. At the domestic level a legal framework was established with the passing of the Hydrocarbon (Prospection, Exploration and Exploitation) Law in 2007 (No. 4 (1)/ 2007) where the relevant regulations were completed in 2007 and 2009 (No.51/2007 and No. 113/2009). [22]

While preparing the legal frameworks, a two dimensional (2D) seismic study was conducted between March-May 2006 and a three dimensional (3D) seismic study was conducted between January-March 2007, which paved the way for the opening of the First Exploration Licensing Round. The first round was opened for the periods of February- August 2007. Among the 13 identified exploration blocks, Blocks 3 and 13 were excluded from this round (see Figure 2). Only one exploration license was granted at the end of the period, to Noble Energy International, as of 24 October 2008 for exploration of Block 12.

A series of 2D (August 2008-March 2009) and 3D (October 2009) seismic studies were subsequently conducted after the completion of the license agreement with Noble Energy. The turning point in terms of the enhancement of hydrocarbon exploration activities in Cypriot offshore came after the signing of the EEZ agreement with Israel in December 2010. Almost a year after the signing of the EEZ agreement with Israel, Noble Energy conducted its first exploratory drilling in Block 12 (at a very close point to the Israeli EEZ where the discovery of the giant Leviathan Field was made) and in December 2011 Noble announced the discovery of the Aphrodite field with a mean potential of 3-6 Tcf.[23] However, after the second exploratory drilling, it was announced that the potential of the field could be up to 5 Tcf. The field's potential has not been proven yet and there is more exploration that needs to be done to confirm the actual potential of the field.

Figure 2: Off Shore Hydrocarbon Exploration Blocks Claimed by the Greek Cypriot Administration

Source: Greek Cypriot Ministry of Energy, Commerce Industry and Tourism, at http://www.mcit.gov.cy/mcit/mcit.nsf/All/FE3EB5707ADA0E6EC225771B0035B0D2?OpenDocument (last visited 29 June 2017).

Discovery of Aphrodite emboldened the exploration attempts of the GC leadership, which paved the way for the launch of the Second Exploration Licensing Round in February 2012 for all of the exploration blocks except Block 12, which was licensed to Noble previously. Fifteen companies showed interest in the Second Licensing Round[24] and after negotiations, license agreements were granted for Blocks 2, 3, and 9 to ENI Cyprus Ltd. and KOGAS Cyprus Ltd Consortium. For Blocks 10 and 11, TOTAL E&P Cyprus B.V. acquired the exploration licenses.[25]

In October 2014, exploratory drilling by the ENI-KOGAS consortium started in Block 9 of the Cypriot

offshore, ending without success.[26] It was suggested that the ENI-KOGAS consortium was contracted to conduct four exploratory drillings, but after the unsuccessful second exploratory drilling that came soon after the first one, implementation of further drillings in Block 9 was halted. The ENI-KOGAS failure combined with the low market prices decreased the attractiveness of the region for the companies. TOTAL, which was supposed to be the next to conduct exploratory drilling in Cyprus offshore, decided not to. This led to a slowdown in the GC administration's exploration activities.

The Third Exploration Licensing Round was announced on 24 March 2016 only for Blocks 6, 8 and 10. On 27 July 2016, the GC administration announced the applicants,[27] and on 21 December 2016 the GC Council of Ministers announced the names of the selected applicants to be invited for the negotiation of the exploration licenses. According to that decision, for Block 6, ENI Cyprus Ltd. /Total E&P Cyprus B.V.; for Block 8 ENI Cyprus Ltd.; and for Block 10 Exxon Mobil Exploration and Production Cyprus (Offshore) Ltd. Qatar Petroleum International Upstream O.P.C., were selected. After the completion of the negotiations, the GC administration signed a license agreement with the companies on the 5 and 6 of April 2017.

'Hydrocarbon-izing' the Cyprus Problem

The last round of the Cyprus negotiation process started on 11 February 2014. Leaders of the two communities, Nicos Anastasiades and Derviş Eroğlu, came in front of the media declaring a long discussed joint communique announcing the parameters of negotiations and declaring the resuming of the talks.[28] For this round of negotiations there was a kind of public consensus on the catalyzing role played by the presence of hydrocarbons in the Eastern Mediterranean. An analysis of the past decade of the GC leadership's hydrocarbon exploration activities reveals that at various stages of the negotiations hydrocarbon exploration has been used as a tool for increasing tensions, gaining leverage on the negotiation table and acquiring support of the international community.

The Hydrocarbon-ization of the Cyprus Problem started as early as the Annan Plan negotiation process. Only three months after the submission of a comprehensive peace plan by UN Secretary General Kofi Annan in November 2003, the GC administration signed the EEZ delimitation agreement with Egypt, which led to reactions from the Turkish Cypriots[29] and Turkey. This was one of

the first attempts to increase tensions at the negotiation table by using natural gas leverage and delaying a possible referendum on the Annan Plan to a date after the completion of the GC's full membership process to European Union. On 1 May 2004 Cyprus became a full member of the European Union, whereupon the application of the *acquis communautaire* was suspended for the northern part of the island until the resolution of the Cyprus Problem.

The Annan Plan was put to a referendum on 24 April 2004. Despite attempts for a solution, the result was a 64% "yes" vote by the TC and a 75% "no" vote by the GC. Two years after the failure of the Annan Plan, UN Secretary General Kofi Annan appointed Ibrahim Gambari, who was Under-Secretary General for Political Affairs, to broker an agreement between the leaders of the two communities. The "Gambari Process", which can be called the fifth round of negotiations, started on 8 July 2006, when Turkish Cypriot leader Mehmet Ali Talat and GC Leader Tassos Papadopulos signed an agreement to restart the negotiations.[30]

In the post 8 July period there has been an extensive effort by the UN, pushing parties for formal reopening of negotiations. In January 2007 the GC administration signed an EEZ delimitation agreement with Lebanon, conducted 3D seismic surveys, and announced the opening up of the first licensing round for the exploration of offshore Cyprus. Not surprisingly those actions by the GC administration were opposed by the TC leadership and Turkey, and a new process of reciprocal actions regarding the hydrocarbon exploration activities started. Over the following decade TC and Turkey have followed a reactionary approach to the actions taken by the GC administration. In official letters to the UN and in press statements, TC and Turkish authorities have tried to emphasize the risks that can be caused to Cyprus negotiations by the unilateral EEZ delimitation and hydrocarbon exploration actions of the GC administration.

On 2 February 2007 (A/61/727-S/2007/54) the Turkish Republic of Northern Cyprus (TRNC) President Mehmet Ali Talat wrote a letter to the UN Security Council in reaction to the signing of the EEZ agreement with Lebanon, listing TC objections to taking such unilateral actions. At the same time, the Turkish Government formally requested from the Lebanese government to not to ratify the agreement with GC leadership. Once again these events led to increasing tensions between the parties and halting of the UN efforts to restart the negotiations.

The February 2008 Presidential election on the southern part of the island was another dynamic, making it difficult for the parties to progress towards opening up of the negotiations. At the end of the elections Demetris Christofias was elected as the new leader of the GC administration.[31] Following the election of Christofias, who was known to be a pro-solution leader, in March 2008 Talat and Christofias met for the first time officially as the leaders of the two communities. This opened the way for the establishment of Technical Committees and Working Groups towards the formal reopening of negotiations on the island.[32] These developments were considered as the beginning of an increased momentum towards progress where both leaders met once again on 1 July 2008 confirming their commitment towards a bi-zonal, bi-communal federal solution based on political equality and citizenship.

The leaders' official meetings and commitment were followed by the appointment of former Australian Foreign Minister Alexander Downer as the new Special Advisor on Cyprus to the Secretary General on 11 July 2008. Soon after Downer's appointment, full-fledged negotiations between Talat and Christofias were launched in September 2008. Nevertheless only a couple of weeks after the launching of negotiations was announced, in October 2008, the GC administration's decision regarding the granting of the exploration license to Texas-based Noble Energy for Block 12 changed the momentum. Once again at a critical juncture of the negotiations, natural gas exploration attempts served as a tension raiser between the two parties. The GC announcement of granting a license to Noble energy resulted in a second letter written by TC leader Talat to the UN Security Council on 26 November 2008 (A/63/574-S/2008/741) addressing the TC's objections.

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Contrary to the hopes of pro-peace groups on the island and despite the presence of 33 convergence papers, the process stagnated once again with the presidential elections of 2010 in the northern part of the island. As a result of the elections on 18 April 2010, a hardliner who defended a two state solution during the Annan referendum,

Derviş Eroğlu, replaced Mehmet Ali Talat as the new president of the TRNC. As soon as he was elected, Eroğlu wrote a letter to UN Secretary General Ban Ki Moon stating that he would continue the negotiations from where Talat and Christofias had left off.[33]

2010 witnessed an important milestone in GC hydrocarbon exploration activities. The Mavi Marmara Flotilla incident, which resulted in a diplomatic crisis between Turkey and Israel, gave the GC administration a long waited momentum to proceed with the EEZ delimitation agreement with Israel, which was concluded on 17 December 2010. On 29 December 2010 Noble announced the discovery of Leviathan in Israeli offshore at a very close location to Block 12 of the GC offshore.[34] The discovery of the Leviathan Field was an important development motivating the GC leadership to push further on hydrocarbon exploration activities in the GC offshore.

On 19 September 2011 Noble Energy commenced exploratory drilling in Block 12. Whilst Noble's activities were closely followed with excitement on the southern part of the island, the unilateral actions of the GC administration were of great concern in the north. Only three days after the commencement of Noble drilling, Turkey and the TRNC signed a continental shelf delimitation agreement, which was followed by the signing of an exploration license granting agreement between the TRNC and Turkish Petroleum (TPAO *Türkiye Petrolleri Anonim Ortaklığı*). In the meantime, the Turkish seismographic Vessel Piri Reis started a seismic survey in the TC offshore and Turkish Naval vessels began patrolling the area. Those actions were a demonstration of TC and Turkish policies aiming to postpone developments regarding the hydrocarbon exploration until after a solution on the island, upon which Turkish Cypriots would also be able to exercise their say regarding the development of the island's hydrocarbons.

After a tense September, on 30-31 October 2011, UN Secretary General Ban Ki Moon invited Eroğlu and Christofias to New York for a summit at Green Tree, where the two leaders discussed four core issues of the Cyprus Problem namely: governance and power sharing; property; territory; and citizenship. One month after the Green Tree meeting, on 28 December 2011, Noble Energy announced the discovery of the Aphrodite Field in Block 12. Motivated by the discovery of the Aphrodite field, the GC administration launched the Second Exploration Licensing Round on 11 February 2012 which was opposed by TC and Turkish authorities.

In February 2012 Turkey announced that companies who took part in the second licensing round of the GC administration would not be allowed to operate in Turkey and in 2013 decided to stop ENI activities in Turkey, as one of the companies submitting applications for the second round.[35] In addition to press statements, based on the previously signed oil and gas exploration agreement between TRNC and TPAO, onshore exploratory drilling was initiated in the northern part of Cyprus, and named the Turkyurdu 1 Well.

On 29 September 2012 TC President Eroğlu made a four point proposal to the UN Secretary General demanding suspension of the exploration efforts until a solution was reached. The proposal also stated that if postponement was not a possibility then at least there should be the establishment of a bi-communal committee on hydrocarbon exploration activities and an agreement to not use any revenue acquired from hydrocarbons for militarization purposes, but instead for the reconstruction of peace on the island.[36] The proposal received no acceptance by the GC administration, which stated that hydrocarbon exploration activities were within their sovereign rights and they were not willing to discuss the issue at the negotiation table.[37]

Despite the fact that Eroğlu and Christofias met 76 times between 2010-2012 it was not possible to proceed further. Negotiations came to a halt when Cyprus acquired the EU Presidency, followed by the Presidential elections in the southern part of the island replacing Christofias with Nicos Anastasiades in February 2012.[38] After being elected, Anastasiades made it very clear that his priority would not be the Cyprus Problem but the economic crisis his country was suffering from.[39] For the 20 months between July 2012 and 11 February 2014, all efforts to restart the negotiations between the parties failed.

The long awaited joint communique came on 11 February 2014, opening the sixth round of Cyprus negotiations. In addition to efforts at the UN level and by the Turkish Ministry of Foreign Affairs, the joint communiqué presented by the two leaders also came out as a result of active US diplomatic involvement. US Assistant Secretary of State Victoria Nuland's visit to Cyprus on 4 February 2014 as part of a wider diplomatic tour played a key role in establishing the international pressure for the opening of the last negotiation round. This was followed by the visit of US Vice President Joe Biden on 22 May declaring his support for the two leaders and reassuring that all parties would benefit from the solution of the Cyprus Problem.[40]

On 21 August 2014 Espen Barth Eide was appointed as the new Special Advisor to the Secretary General on Cyprus.[41] After his appointment, Eide had a very busy agenda, meeting with leaders, negotiators, representatives of the political parties on the island and diplomatic circles in the respective motherlands of the two communities.[42] On 17 September, negotiations were resumed with the agreement to move to the next stage in negotiations.

Once again, only a week after resumption of the talks, at a moment which was considered to be a critical step towards a solution for the Cyprus Problem, the natural gas issue entered the scene as a game breaker on the negotiation table. On 25 September 2014, ENI commenced drilling operations at the Onasagoras well in Block 9.[43] This attempt was followed by the dispatch of the Turkish seismic research vessel Barbaros Hayrettin Paşa and naval vessels to the Turkish Cypriot offshore on 3 October 2014. On 7 October 2014 GC leader Anastasiades announced that he had suspended his participation in negotiations unilaterally. This announcement came as a reaction to a Navigational Telex (NAVTEX) by Turkey dated 3 October, declaring the seismic survey route in the TRNC's continental shelf. The incident came to be known as the NAVTEX Crisis, which is the most obvious demonstration of the hydrocarbon exploration activities becoming a tool for challenging the Cyprus negotiations.

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Despite the fact that similar navigational telexes were declared for Turkish seismic vessels in previous exploration activities and had not received reactions from the GC administration to this extent, Anastasiades' decision to suspend his participation in negotiations escalated the tension to such a degree that it risked the continuation of the negotiation process.[44] Parties to the negotiation table soon declared their position towards those developments, while Nicos Anastasiades was making it very clear that he would not return to negotiations unless the Barbaros Hayreddin Paşa seismic survey ship left the region, the Turkish side was emphasizing that so long as the GC leadership continued exploration

activities unilaterally, the Turkish side would continue exploration too.

The October 2014 hydrocarbon exploration bottleneck was the first round of the "NAVTEX Crisis". Trying to return the attention back to the negotiation table that had been overshadowed by the natural gas barrier, Special Adviser Eide came up with a new proposal for the establishment of an advisory panel responsible for the management of the technical aspects of natural gas exploration activities. It was argued that this panel would act as a twin track process parallel to the peace negotiations.[45] Before even giving a formal answer to Eide, the proposal came to daylight through media coverage stating that the GC leadership would not accept to discuss the hydrocarbon exploration issue as part of the negotiation process.[46]

Efforts to bypass the crisis were not successful. In December 2014, as the tension from both parties' NAVTEX declarations was ending and everybody's expectation was a normalization, a second round of the "NAVTEX crisis" broke out. In January 2015, the GC leadership announced that ENI-KOGAS would continue its exploration activities until 18 March 2015 in Block 9 with the drilling of another well named Amathusa.[47] After this declaration the Turkish side waited for six days before declaring another NAVTEX for seismic surveying and continued diplomatic contacts at the level of the United Nations and the Turkish Ministry of Foreign Affairs. Diplomatic efforts by the TC side were fruitless in terms of cancelling the Greek Cypriot Administration's decision for a second round of drilling, and the second NAVTEX for Barbaros Hayreddin Paşa came in January 6, which continued until 6 June. Despite the fact that there was a NAVTEX declaration, as a sign of good will, the Barbaros Hayreddin Paşa Ship never left the Famagusta port. Following TC and Turkish actions, the GC leadership and ENI-KOGAS consortium announced that there wouldn't be another drilling because the SAIPEM 100000 drilling platform needed maintenance. For the diplomatic representatives on the island, the crisis had been peacefully managed without anyone losing face and this was a sign that negotiations would start again soon. Two unsuccessful drillings by ENI in Block 9 had a curbing effect on other companies who were planning to commence drilling. In January 2015 TOTAL announced that it was planning to pull out of its licenses in Blocks 10 and 11.[48]

On 18 March 2015, Eide visited the island and held meetings with the leaders of both sides assuring that negotiations would resume right

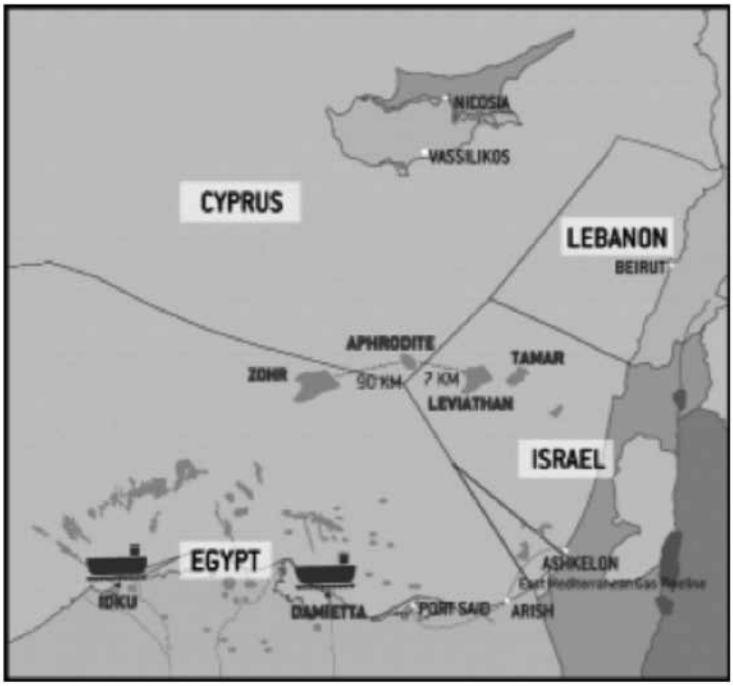
after the presidential elections on the northern part of the island. GC President Anastasiades and newly elected TC President Mustafa Akıncı met on 15 May 2015 for the first time, marking the reopening of negotiations. The rest of 2015 and 2016 witnessed an extensive period of negotiations between the two leaders and their technical committees. On numerous occasions UN representatives stated that UN good offices could not go on forever and this was a very important stage for the Cyprus Problem where by the end of 2016 there were to be serious developments towards a solution.[49]

While all these statements were being made, on the one hand the GC leadership was actively taking part in the negotiations, but on the other hand preparing for the opening of the third hydrocarbon exploration round, which was announced in March 2016.[50] In the post NAVTEX Crisis environment, coupled with the unsuccessful ENI-KOGAS drillings and with TOTAL getting cold feet regarding its exploration plans, from May 2015 to March 2016, the GC administration kept a low profile in hydrocarbon exploration activities.

In addition to increasing pressure at the negotiation table, two developments in the Eastern Mediterranean region made the GC leadership utilize the natural gas card once again. The first development was the discovery of the Zohr field in the Egyptian offshore, which was geographically close to Block 11 on the GC offshore (see Figure 3). The geographical proximity of the giant Zohr field not only motivated the GC leadership regarding the regional potential but also increased the interest of international companies in the region. The second important turning point that motivated the GC leadership was the increasing diplomatic contacts and energy cooperation signals from the Turkish and Israeli authorities after the summer of 2016. This rapprochement was perceived as a threat to the hydrocarbon leverage policy that the GC had been trying to build since 2003.

The announcement of the third licensing round can be considered as a security valve on behalf of the GC leadership towards the negotiation table since it automatically introduced a legal timeline. The legal notice announcing the third licensing round stated that the companies were required to submit an expression of interest within 120 days after the publication of the announcement.[51] This set July as the deadline for submission of the bids, and meant the GC administration had to announce the names of the companies chosen for negotiations by around October and the negotiations

Figure 3: Egypt's Zohr Field



Source: Lebanon Gas News, "Eni sells 30% stake in Egypt's Zohr gas field to Rosneft", at http://lebanongasnews.com/wp/eni-sells-30-stake-in-egypts-zohr-gas-field-to-rosneft/ (last visited 25 February 2017).

with selected companies had to start by the end of 2016 or early 2017. According to this timeline, the Greek Cypriot Administration would grant exploration licenses to the selected companies at the latest by March or April 2017. This approximate schedule regarding the progress of the Third Exploration Licensing round was setting the stage for how the Cyprus negotiations would proceed by as early as March 2016. The opening of the third licensing round raised concerns on the southern part of the island, where many claimed that the timing was the outcome of an ill-advised political decision bearing in mind the approaching negotiation agenda.[52] Right after the announcement of the Third Licensing Round, the TC and Turkish authorities made statements that this was again against the rights of Turkey and the TC, and necessary actions would be taken if the process continued.[53]

It was obvious to leaders of both communities that the last three months of 2016 would be a period in which Cyprus negotiations would escalate. As expected, the UN Secretary General invited the two Cypriot leaders to New York on 25 September 2016 to discuss organizing a meeting outside of Cyprus and possibly an international conference where the guarantor powers (Turkey, Greece and the UK) would participate as well. After New York, it was agreed that the two leaders would meet again in Switzerland under the auspices of UN Secretary General's Special Adviser on Cyprus Espen Barth Eide to discuss the unresolved issues of the Cyprus problem during the negotiations in Cyprus. The territory chapter, which is one of the most complicated issues of the Cyprus Problem, was at the top of the agenda. Between 7-11 November 2016, the two leaders went to Mont Pelerin, Switzerland. This meeting came to be known as the first Mont Pelerin meeting, and ended with a declaration that GC leader Anastasiades needed more time to think about the issues discussed. The two leaders left Switzerland with an agreement that they would come back a week later. The second Mont Pelerin meeting was held on 20-21 November 2016 and ended with Eide's statement declaring that the leaders could not achieve convergences on territorial adjustment.[54] In between the two Mont Pelerin meetings, the GC administration announced that the technical committee had completed its evaluations for the assessment of the bidders for the third round and that the results would be announced soon.[55] This announcement, coming right in between the two Mont Pelerin meetings, signaled that the GC administration was poising the natural gas card once again towards the negotiation table. On 21 December 2016, the GC administration announced the names of the companies that they would start negotiating with.[56]

The two leaders came back to the island empty handed on any decision to continue negotiations in Nicosia. After a series of meetings, Eide announced that the leaders agreed to go back to Switzerland on 9 January, and to present their respective maps on 11 January. January 12 would be the date of the long awaited international conference in which the leaders of the TC and GC, as well as the representatives of the Guarantor Powers, would meet.[57] Yet again however, the meetings and international conference in Geneva did not bring about any improvement, and the parties returned empty handed with the agreement that negotiations would continue on the island.[58] This was the beginning of a stall in terms of negotiations despite the agreement

that negotiations would continue. The deadlock came when Anastasiades left the negotiation table on 17 February 2017 after Akıncı asked for cancellation of the GC parliamentary decision regarding the commemoration of the ENOSIS in GC public schools to be reconsidered.[59] In the meantime GC Minister of Energy Giorgos Lakkotrypis kept giving press statements stressing that a solution was not a precondition of the development of the island's hydrocarbons.[60]

March 2017 was marked by extensive efforts from Eide to bring the parties back to the negotiation table, though these were overshadowed by the continuation of the GC administration's hydrocarbon efforts in line with the timeline of the Third Licensing Round.

March 2017 was marked by extensive efforts from Eide to bring the parties back to the negotiation table, though these were overshadowed by the continuation of the GC administration's hydrocarbon efforts in line with the timeline of the Third Licensing Round. On March 7, the GC administration announced that they had completed the negotiations with the bidding companies.[61] After the GC parliament's decision regarding postponing the commemoration of ENOSIS in public schools, the two leaders came together at an informal dinner on April 1, 2017 agreeing to resume the stalled negotiations on 11 April 2017. Only five days after the informal leader dinner, the GC administration signed contracts with selected companies on 5-6 April 2017, setting summer of 2017 as a possible date for the start of further explorations and drilling in Cypriot offshore.[62] The leaders came together on 10 April, resuming the talks once again. More than the talks themselves, the press statement given by Akıncı after the meeting, regarding the dangers of the unilateral natural gas exploration actions by the GC administration and Anastasiades' statements denying natural gas discussed as part of the meeting, marked the beginning of a new process.[63]

Conclusion

From the very beginning, GC actions in offshore Cyprus could be perceived as a political tool through which negotiations could be achieved via an upper hand. In addition to being utilized as a tool at the negotiation table, the natural gas issue has been

used to assure the GC administration's regional role as an EU member state. Although Cyprus became an EU member in May 2004, inability to reach a solution on the island through the Annan Referendum held in April 2004, during which a "No" vote came from the southern part of the island, made Cyprus somehow an odd member. Right after the referendum the UN secretary general defined the process as a lost opportunity, and the EU Commissioner responsible for expansion, Verheugen, made remarks about the EU having been betrayed or cheated by the GC.[64] Despite the political victory, this was a serious prestige loss on behalf of the Greek Cypriots and their international image, where Turkey's and the TC' longstanding negative image as negotiators was reversed.

From the very beginning, GC actions in offshore Cyprus could be perceived as a political tool through which negotiations could be achieved via an upper hand.

Furthermore, through the hydrocarbon exploration activities, the GC leadership tried to bring back long lost international interest to the Cyprus problem while at the same time it was clear that Turkey would react aggressively to such an initiative. Such a tension could help the GC in two ways. On the one hand, it could reverse the negative international image and could bring the support of international actors such as the EU, US and UN back into the picture. On the other hand, this could challenge Turkey in terms of her increasing her role as an energy transit country in the post-Cold War era.

Furthermore, especially after the economic crisis of 2005, the GC experienced a serious trauma, as citizens waited in long ATM queues to withdraw 100 euros per day and serious amounts were trimmed from accounts.[65] The hope that hydrocarbon exploration and the prize that it could bring served as an important psychological tool for domestic political consumption that worked in two ways. One, the GC leadership was trying to rebuild domestic economic confidence. Two, the presence of hydrocarbon potential presented another leverage at the negotiation table.

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- MEPEX/GEO Conference & Exhibition
- American Association of Petroleum Geologists (AAPG) Energy Convention & Exhibition
- Geological Society of London
- APPEX Conference & Exhibition

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- Total E&P Activities Petrolieres (France);
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- Eni Cyprus Limited Eni Cyprus Limited

Blok 10
- Eni Cyprus Limited / Total E&P Cyprus B.V. konsorsiyumu
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Nuclear Energy and International Relations: Outlook and Challenges for Newcomers

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Abstract

Nuclear energy differs from other sources of energy with its military application resting at the core of international relations, that is, nuclear weapons. Under the international nuclear nonproliferation regime, non-nuclear weapon states have the right to use nuclear energy for peaceful purposes under the obligation to apply safeguards, so that the technology is not diverted to military use. This article aims to show that in the new millennium, countries aspiring to generate nuclear energy need to consider their policy from a broader context than energy security. It starts with an overview of nuclear technology and its relationship to proliferation, how its use is regulated, and the expected behavior from states using nuclear energy. It presents the challenges facing nuclear power projects: the Iran nuclear issue; nuclear terrorism becoming a more pressing issue than state-level proliferation; and safety and public acceptance.

Key Words

Nuclear Energy, Nuclear Nonproliferation, Nuclear Security, Public Acceptance of Nuclear Energy.

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Introduction

One of the most pressing issues that the international community is facing in the new millennium is energy security. The demand for fossil fuels is expected to increase because of development projects and the changing socio-economic structures in emerging markets. In addition, long-term energy contracts decrease their availability in the market. The industrialized/developed countries have embarked on projects and energy strategies to decrease the use of fossil fuels and to diversify their providers in order to reduce dependence. Their medium-term strategy is to increase the share of renewables and/or low-carbon energy sources, such as nuclear energy.

Nuclear energy has become popular in the last two decades, which has led to the notion of "nuclear renaissance." Countries at all levels developed a renewed interest in nuclear since it largely addressed political, economic and environmental goals in their energy security policies. Most states

considered nuclear energy as a viable alternative within the debate on climate change, which started a tendency to use low-carbon sources while meeting energy needs.[1] Emerging markets and developing countries leaned on nuclear energy projects (in Asia and the Middle East in particular) to meet their need for development, but at the same time with low energy prices for a competitive edge in international trade. They also tried to reduce energy dependence and to achieve environmental sustainability. Although the 2011 Fukushima accident slowed down some projects, the willingness of the emerging markets has not waned.

States planning to use nuclear energy are faced with some unique challenges.

However, nuclear energy is not like other sources of energy. States planning to use nuclear energy are faced with some unique challenges. They need to consider their policy within the broader international relations and international security context. Generating nuclear energy in a power plant is what is called the "peaceful use of nuclear energy" under the international regime on the prevention of the spread of nuclear weapons, and is subject to various rules and regulations different from other sources of energy.

Nuclear technology was used first for military purposes, that is, the atomic bomb. States with nuclear weapons have political and military advantage over their rivals. Some see it also as an instrument of prestige and status, hence power. The nuclear non-proliferation regime distinguishes between those countries with nuclear weapons and those without. The latter group enjoys the right to use nuclear energy for peaceful purposes on the condition that they accept International Atomic Energy Agency (IAEA) safeguards, which serve to detect any diversion or misuse of technology and nuclear material for military purposes.

Currently, three main challenges await states contemplating nuclear energy generation. These operate at the international and domestic policy-making levels. The first is the political question over the use of sensitive technologies by non-nuclear-weapon states, which were worked through during the Iran nuclear issue. The resolution of the issue by diplomatic means strengthened the nonproliferation regime while contributing to regional security. However, the Iran nuclear deal must still be handled with care and the new US administration's view on it is critical

both for the regime and the region.

The second challenge is the changing international security agenda: Concerns about a terrorist attack using nuclear and radiological material occupy the international security agenda more than state-level proliferation of nuclear weapons. International terrorist groups and their intentions pose a direct threat via nuclear and radiological material both in use and in transport. With more nuclear power plants, and nuclear material trade in place, the material and facilities are becoming vulnerable and constitute new targets for terrorist groups. The international response to this threat is "nuclear security," that is, preventing the theft of nuclear material, sabotage or unauthorized access to facilities or transporting vessels. However, the nuclear security culture and the nuclear security norm are yet to develop.

The third challenge is the growing public sensitivity to the risks and dangers of nuclear energy generation. The high perception of risk and social movements against nuclear energy confront policymakers, particularly regarding nuclear safety. At the domestic level, policymakers need to pursue a strategy of informing the public with sound evidence while being open about energy policy in general. The issue is also related with a new socio-economic era that is marked by the adverse effects of industrialization and modernity. To meet the challenge, policymakers need to have a full grasp of the sources of public concern.

To analyze these challenges, the article will introduce a brief overview of the technological aspect of nuclear energy and sensitive technologies for nuclear proliferation. Then, it will provide the main international rules and norms regulating their use, and what behavior is expected from states using- or planning- to use nuclear energy. It also puts forward energy security concerns in the new millennium and shows the rise in demand for nuclear energy. Next, it will look at the previously mentioned three challenges in detail, and will conclude with recommendations for policymakers.

Background

The first use of nuclear fission technology was for military purposes, that is, nuclear weapons. Its application in agriculture, industry, medicine, research and most notably in the generation of electricity followed later. The peaceful use of nuclear technology was made conditional upon its being subject to safeguard inspections of an international atomic energy agency to ensure that no diversion or misuse

takes place. International regulations for peaceful use are covered under the broader concept and the regime of nuclear nonproliferation, that is, the efforts to prevent the spread of nuclear weapons.

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This section will introduce the significance of nuclear weapons in international relations by looking at the theory of Realism, basic concepts and phases of war, and why and how nuclear weapons rest at the core of state power. It will also provide the basics of nuclear fission and its dual-sided nature. Next, it will provide a brief history of the nuclear nonproliferation regime and the development of the regulations for peaceful use of nuclear energy as an important principle of the regime.

The main problematique of the discipline of International Relations is "how to survive in anarchy." The Realist theory of International Relations assumes that the international system is anarchical, that is, there is no higher authority over states, which are the main actors. The theory assumes that states are rational and unitary, and humans are essentially selfish. Just as they pursue their interests, in an anarchical system, states pursue national interests, the primary of which is to survive. In the face of scarce resources, war and conflict are inevitable between states. They rely on their own power, and to prevail in war, states accumulate power, which is military power.[2]

In a Realist environment, war is one of the instruments which states use to reach their political ends. By waging war, states seek a decisive victory that would substantially decrease or eliminate the negotiating power of the adversary, which in turn, would provide a fast and smooth process of political settlement.[3] For such a victory, it is logical that one would pursue a weapon that would render the adversary without enough power to retaliate. In other words, states seek strategic military capabilities as instruments to reach their political goals. The advent of nuclear weapons, with their enormous destructive capacity, have in the contemporary era provided states with such a strategic military capability. It should be noted that when referring to states, Realists are of course implying the great powers. What makes them 'great' is the quality and quantity of their military capabilities.[4] It is no coincidence that

the permanent members of the UN Security Council are granted the status of Nuclear Weapon States (NWS) under the Nuclear Nonproliferation Treaty (NPT). Corroborating Realist theory, nuclear weapons conferred status to their possessors and helped to form the two-tier structure of the international community via international organizations and international treaties.

Nuclear Technology and Peaceful Use

To understand the military and civilian uses of nuclear technology, it is necessary to explain nuclear fission. Fission means the splitting of an atom. When a fissile isotope absorbs a neutron, it splits into two and yields at least two neutrons. This makes it possible to have a fission chain reaction and releases an enormous amount of energy. The first application of this technology was the nuclear weapon, which was developed by the United States during World War II and was used against Japan in 1945, ending the war.

Apart from military uses, nuclear technology can be used for civilian purposes. A basic knowledge of the nuclear fuel cycle, nuclear reactor types, and critical technologies would help to understand the issues surrounding nuclear energy in the context of international relations. Uranium and plutonium are fissile material. The uranium metal found in nature is composed of mainly Uranium-238 (U238) and Uranium-235 (U235) isotopes. The fissile isotope is U235. Plutonium is not found in nature, but is obtained from Uranium. Its fissile isotopes are Pu-239 and Pu-241.[5] When they absorb a neutron, they undergo a fission chain reaction.

A basic knowledge of the nuclear fuel cycle, nuclear reactor types, and critical technologies would help to understand the issues surrounding nuclear energy in the context of international relations.

The ratio of U235 isotope in natural uranium is only 0.72%. In order to be used in electricity generation, the ratio of U235 is increased to sustain a chain reaction, which is a process known as "enrichment." The widely used nuclear reactors in the world are light-water reactors, which use 3-5% enriched uranium as fuel. Various enrichment techniques are employed, such as gas centrifuge or gaseous diffusion.

Some research reactors require 20% enrichment level. If U235 is enriched above 90%, it becomes weapon-grade, that is, it can be used to make a nuclear weapon,[6] which is why the technology of uranium enrichment is proliferation-sensitive. Technically, it takes much more effort to obtain 20% enriched uranium from 0.72% than to reach 90% enriched uranium from 20%.[7] Accordingly, the IAEA determines 20% enrichment level as the threshold;[8] that is, in no circumstances can a non-nuclear-weapon state enrich uranium over 20%.

After the fuel is used in a nuclear reactor, it is called "spent fuel" or "used fuel." This product contains U235 and Pu239 and waste elements. The U235 and Pu239 can be recycled and used to make new fuel. Plutonium is not found in nature. It is obtained when U238 absorbs a neutron. Heavy water reactors (using heavy water as neutron moderator) use natural uranium as fuel, and its spent fuel contains weapon-grade Pu-239 (because of low burn-up, Pu239 in the spent fuel of heavy-water reactors is more suitable for a nuclear weapon compared to Pu239 in the spent fuel of a light-water reactor, which has high fuel burn-up). Plutonium in this spent fuel can be recovered in a plutonium reprocessing facility and can be re-used to make a mixed-oxide fuel (MOX) to be used in a light-water reactor. Uncontrolled (without safeguards) and with political will, it can be used to make a nuclear weapon, making it the second sensitive technology for nuclear proliferation. Thus, uranium enrichment technology, enrichment at 20%, heavy-water reactors, and plutonium reprocessing facilities would raise suspicions if safeguards are not applied or are insufficient.

After the use of the atomic bomb in 1945, international efforts to prevent the proliferation of such weapons started in 1946. In the United Nations, both the United States and the Soviet Union proposed plans to curb each other from gaining military-strategic advantage. Yet, after four years, the Soviet Union acquired its first nuclear weapon, and in 1952, the United Kingdom followed. In 1960, France and in 1964, China got their nuclear weapons. In 1953, the US President D. Eisenhower carried out the "Atoms for Peace" speech in which he called for using nuclear technology for peaceful uses, which would be put under the safeguards of an international atomic energy agency.[9] As a result, in 1957, the IAEA was established.[10] This principle of peaceful use along with IAEA safeguards became one of the main principles of the Nuclear Nonproliferation Treaty (NPT). The Cuban missile crisis of 1962 resulted in international efforts for a treaty to stop

nuclear weapons proliferation. The text of the NPT was opened for signature in 1968 and the Treaty entered into force in 1970.

The NPT sets two categories for parties to the treaty, and rests on three main principles. It distinguishes between nuclear-weapon states (NWS) and non-nuclear-weapon states (NNWS). In the first group, are states which had detonated a nuclear device prior to January 1, 1967: China, France, the Soviet Union, the United Kingdom and the United States. The rest of the signatories are NNWS, and pledge not to seek nuclear weapons. The first principle of the NPT is nuclear nonproliferation, and accordingly, NWS agree not to transfer nuclear weapons or related material to NNWS, and the latter agree not to receive them (Articles I and II). The second principle is nuclear disarmament, as enshrined in Article VI. According to the third principle of peaceful use of nuclear energy, NNWS have the right to use nuclear energy for peaceful purposes (Article IV) with the obligation that they put their nuclear facilities and activities under IAEA safeguards (Article III).[11]

The safeguard system of the IAEA has rested on the principle of "verification of the compliance" of NNWS with their Treaty obligations.[12] However, the safeguards system later evolved, mainly after the revelation that Iraq was able to develop a clandestine nuclear weapons program even while it was a party to the NPT and had safeguards agreement with the IAEA. With the introduction of the Additional Protocol to the comprehensive safeguards agreements, the new system enhanced safeguards to detect undeclared nuclear material and activities.[13] Adherence to the Additional Protocol is not a legal but a political necessity: It was introduced out of necessity to fulfill the aim of IAEA safeguards. While the text of the Treaty does not mention it, it is the spirit of the NPT and the norm of nuclear nonproliferation that make Additional Protocol the symbol of a NNWS' transparency of its nuclear activities and its commitment to the nuclear nonproliferation regime.

An international regime is a set "… of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations."[14] It means that states cooperate and form international institutions focusing on an issue that is of common concern, and continue to work for or adopt new rules, build norms and form new institutions which structure their behavior and make it predictable. The issue of nuclear proliferation and the dangers associated with it led states

to work towards and establish its parts of global governance, that is, treaties, international organizations, agreements and most notably, norms.

The cornerstone of the nuclear nonproliferation regime is the NPT, setting the rules, and specifying states' expected form of behavior.

The cornerstone of the nuclear nonproliferation regime is the NPT, setting the rules, and specifying states' expected form of behavior. The main principles of the NPT are mutually reinforcing, therefore, the peaceful use of nuclear energy and safeguards are contemplated in the broader framework of nuclear nonproliferation. This renders nuclear energy a special status: It is regulated internationally under the nuclear nonproliferation regime, and all parties are expected to obey its rules and norms on nuclear nonproliferation. In this context, NNWS must not pursue nuclear weapons and must implement IAEA safeguards.

Basics of Nuclear Safeguards

The role of the IAEA is verification, that is, to ensure that nuclear material and facilities are used only for peaceful purposes. According to Article IV of the NPT, NNWS are obliged to place their nuclear facilities under IAEA safeguards, which help in early detection of any misuse of nuclear material or technology, thereby deterring the spread of nuclear weapons.[15]

> IAEA safeguards are a set of technical measures that allow the IAEA to independently verify a state's legal commitment not to divert nuclear material from peaceful nuclear activities to nuclear weapons or other nuclear explosive devices.[16]

Diversion refers to the moving of nuclear material from civilian to military use. The IAEA determines two kinds of diversion: abrupt (involving a large amount of nuclear material); and protracted (nuclear material collected over a period of time).[17] Misuse means the use of nuclear technology, facilities or material originally acquired for civilian purposes, in order to acquire nuclear weapons.[18]

Article III.A.5 of the IAEA Statute grants the IAEA the authority for safeguards, through which it can conclude agreements with states or regional safeguards authorities.[19] Comprehensive safeguards agreements (CSAs), item-specific safeguards agreements and voluntary offer

agreements are the types of these agreements.[20] Accordingly, non-nuclear-weapon states conclude CSAs and accept IAEA safeguards.

The IAEA safeguards system serves as not only a confidence-building measure, but also an early warning mechanism and trigger for international response.[21] The safeguards system evolved as a result of technological change and developments that required its effectiveness. Key events that carried the safeguards to their current level are the incorporation of CSAs as part of the NPT and the Treaty of Tlatelolco, and the experience with Iraq and North Korea. Iraq's exploitation of the loopholes in the system was the main reason behind strengthening IAEA safeguards.[22]

The basis of safeguards is to determine whether a state's declared nuclear material and nuclear-related activities are correct and complete. These aims are achieved through verification measures such as on-site inspections, visits, monitoring and evaluation. There are two categories of measures. The first set of measures involves the verification of declared nuclear material and activities authorized under the CSAs.[23] However, when it was seen that Iraq could pursue a covert nuclear weapons program despite being party to the NPT and subject to safeguards, the focus of the safeguards system shifted to undeclared material and activities. The Additional Protocol was introduced in 1997 to strengthen the Agency's inspection capabilities, and thus to complement the CSAs. Thereby, the IAEA is enabled to verify the non-diversion of declared nuclear material, and to ensure the absence of undeclared nuclear material and activities.

Current Challenges to the Peaceful Use of Nuclear Energy

Energy Security and Nuclear Energy Demand

According to the International Energy Agency (IEA) and the US Energy Information Administration (EIA) estimates for 2040, energy demand will be on rise in upcoming years.[24] States determine their energy policies and energy security views according to their natural resources, needs, geographical location, development level and political criteria, such as keeping dependence on foreign suppliers at a minimum and relying on indigenous resources. In this sense, interest in nuclear energy has continued to grow. In addition to the 450 nuclear reactors in operation worldwide, there are planned nuclear

units and those currently under construction. The latter are mainly in Asia and the Middle East, including China, India, Iran, Japan, Pakistan, Russia, the United States, the UAE and Vietnam.[25] The highest number of reactors under construction is in China and Russia.

A prevalent definition of energy security is based on three criteria: reliability, affordability, and environment-friendliness.[26] The link between energy and state power has been established since the Industrial Revolution, and securing the energy supply became a critical issue with the 1973 oil crisis, as the interruption in the flow of oil and subsequent price fluctuations dramatically affected state security at various levels, including, military, economic and societal. After the end of the Cold War, the adverse impacts of industrialization were felt globally, and the environmental criterion was added.

Energy policies and energy security views differ according to countries' endowments, security cultures, and the level of development.

The energy security definitions of the developed/industrialized countries, such as, the United States, the EU, Canada, South Korea and Japan overlap with the above-mentioned definition of energy security, with an emphasis on reducing dependence, preparing for supply shortages, and focusing on alternatives that are environment-friendly. In their energy policies and strategies, the aim is to lower the share of fossil fuels in order to decrease dependence and CO2 emissions, while increasing the share of low-carbon sources, such as nuclear energy and renewables.[27] The United States, Canada, Japan and South Korea are not only benefitting from nuclear energy, but also providing equipment for nuclear power plants. Despite Fukushima, Japan still relies on a considerable share of nuclear in generating electricity.[28] The EU's dependence on Russian natural gas has resulted in a new approach to increase investment on renewables, diversification of natural gas suppliers and decreasing the share of gas in the energy basket. Brussels also values nuclear energy as an important base-load supply with a caution on nuclear fuel supplied by Russia.[29]

Energy policies and energy security views differ according to countries' endowments, security cultures, and the level of development. In this sense, Russia, China and India deserve attention. Russia's energy security

perspective has been shaped primarily by its vast hydrocarbon reserves, the quest to restore its political and economic power, and its security culture.[30] Russia ranks first in the production of crude oil and second in that of natural gas. Its energy revenues constitute almost half of the country's budget.[31] Russia's energy security view has been shaped in large part by President Vladimir Putin's view of Russia's security, economy and its international position. He saw energy as the instrument for Russia's economic development and to make it a leading power.[32] Accordingly, the extraction, processing and export of the hydrocarbon resources had to be under the control of the state. The industry should be delivered to an equal status with that of the West.[33] Russia pursued a foreign policy under which energy agreements and pipelines forged dependence, which could be utilized as an instrument to wield power. Regarding nuclear energy, Moscow approved plans for several new reactors in 2010. In addition, Russia aspires to become a major exporter of nuclear commodities.[34]

For China and India, the criteria of reduced dependence and long-term availability of supply are the defining features of their energy security understanding. After the end of the Cold War, these two giant economies started growing rapidly, resulting in a rise in energy demand. Their energy security strategy foresees long-term investments with developing countries, rich in energy sources and receptive to foreign investment.[35] China has about 20 nuclear reactors under construction and plans to build more as part of Beijing's plans to increase the share of nuclear energy in order to address air-pollution problems stemming from coal-fired power plants.[36] India is also expanding its nuclear power generation capacity, particularly to use indigenous thorium resources.[37] It aims at supplying a quarter of its electricity generation out of nuclear by 2050.[38]

In addition to rising economies, several countries in the developing world, or which are emerging markets, have opted for nuclear energy, including Bangladesh, Belarus, Egypt, Indonesia, Jordan, Kazakhstan, Thailand, Turkey, Vietnam,[39] and the UAE.[40] Most of them seek to reconcile their need for a sufficient energy supply for development, and at the same time to observe environmental protection and to reduce CO2 emissions. The majority of them are dependent on fossil fuels, and chose diversification in their energy basket by pursuing alternative sources of energy. As Rajiv Nayan observes, "having an energy *mix* has become an international norm."[41] Also, economic development follows as a result of the development in nuclear-

related industries.[42] In countries using hydrocarbons to generate electricity, the cost of production has risen, particularly in the first decade of the 2000s.[43] In the arid Middle East, desalination and air conditioning are essential for urban life. As population rises, so follows the demand for energy.[44] Furthermore, investing in nuclear energy and technology procurement has a political aspect: Nuclear energy generation is seen as a symbol of prestige and status.[45]

The Limits to Peaceful Use: The Iran Nuclear Issue

Under the NPT, non-nuclear-weapon states enjoy the right to use nuclear energy in return for accepting IAEA safeguards. They are required not only to allow IAEA inspections in existing facilities, but also to report their planned nuclear activities. Iran's failure on its reporting requirements to the IAEA in the early 2000s resulted in concerns about Tehran's intentions with its nuclear program. Coupled with the post-9/11 threat assessments and unsupportive political environment in key capitals, a comprehensive agreement on its nuclear program could not take shape until 2015. The bone of contention was Iran's uranium enrichment activities along with other proliferation-sensitive facilities. Negotiations ended with an agreement (the Joint Comprehensive Plans of Action-JCPOA) after political concerns were alleviated with technical measures to prevent proliferation while at the same time allowing Iran to continue enrichment.

The negotiations between Iran and the EU3+3 (or P-5+1, referring to the permanent five members of the United Nations Security Council and Germany) were critical for several reasons: First, in case diplomacy failed, a military option was on the table during the George W. Bush administration.[46] That, and the "Axis of Evil" speech, led the Iranian public to perceive the nuclear program as a symbol of pride and protection against the West, hence making it harder for Tehran to give concessions. The public also assessed that while it is Iran's right to possess civilian nuclear technology, the nuclear program made Iran a target.[47] Second, if the issue was left unresolved, the risk was a NNWS choosing to withdraw from the NPT to go down the path to acquire nuclear weapons. That would send a dangerous signal to other non-nuclear-weapon states, especially those in the region, and also would undermine the norm of the nuclear nonproliferation regime. It was thought that Iran's regional rivals were embarking on nuclear energy projects to keep their nuclear option should Iran go nuclear.[48] Third, how

the international community handled the issue was critical, because the main problem was political: It was distrust mainly between the United States and Iran. It could be ameliorated thanks to the existence of Iranian and American officials with technical expertise and common academic backgrounds favorable for a diplomatic solution resting on technical measures. The JCPOA is the result of hard work for more than a decade, and it hinges on a delicate balance supported with careful rhetoric particularly in Tehran and Washington, D.C.

Article IV of the NPT acknowledges the right of non-nuclear-weapon states to the use of nuclear energy for peaceful purposes, but it does not specify nor does it limit the use of sensitive technologies by non-nuclear-weapon states.[49] However, the nuclear issue with Iran was rather a political problem combined with regional dynamics and United States-Iran-Israel relations and threat perceptions, considering that Iran enriched uranium close to 20%, expanded its enrichment capacity, and did not implement the Additional Protocol. The most important conclusion of the Iran experience was limiting enrichment at 5% (which is the level for making fuel in power generation reactors), hence acknowledging the right for enrichment to Iran, and other NNWS that use nuclear energy. In other words, it allowed indigenous production up to reactor level and under enhanced safeguards. Also, during the talks, G.W. Bush and Mohamed ElBaradei, former Director General of the IAEA, made proposals to deny sensitive technologies to newcomers,[50] which would create a new dichotomy of haves vs. have-nots. For the newcomers, it would also mean that fuel dependence will continue albeit less risky than that on natural gas.

The statements of US President Donald Trump and of his team on the Iran deal,[51] throughout the Presidency campaign and since his election do not bode well for the nonproliferation regime: President Trump's dissatisfaction and decertification of the JCPOA) carry the risk to reverse the achievements, which would severely damage regional balances and may trigger proliferation trends. In this case, the nuclear energy projects in the region may be delayed due to political "risks."

Nuclear Terrorism and Nuclear Security

International terrorism ranks first on the security agenda since the September 11, 2001 attacks in the United States. Post-9/11 threat assessments were shaped by increasing concerns on non-

state actors seeking CBRN capabilities to carry out attacks resulting in mass casualties.[52] The threat perception during the G.W. Bush administration was that states that are against the United States might support these terrorist groups by providing them with such materials and agents.[53] As a matter of fact, the UN Security Council Resolution (UNSCR) 1540 (2004) contains provisions to discourage such support and to take measures for their implementation.[54] During the Obama administration, the threat assessment was rather focused on the intention of non-state actors to carry out an attack with nuclear or radiological material. President Obama's Prague speech in 2009 was an important call for efforts to prevent nuclear terrorism.[55]

Nuclear terrorism refers to terrorist activity to inflict damage with the use of nuclear or radiological material. It includes theft, sabotage or unauthorized access to these materials when they are in use in a facility or while they are transported.[56] Terrorists may try to either steal them to make an improvised nuclear or radiological device (dirty bomb), or may treat the facility or the transportation vehicle as a potential weapon to cause radioactive dispersal. In either case, the consequences would be lethal and enormous.

Traditionally, the measures to secure these materials were referred to as "physical protection." After 9/11, the Convention on the Physical Protection of Nuclear Material (CPPNM) was amended to strengthen its provisions. The 2005 Amendment added the phrase "and Nuclear Facilities" to the title of the Convention. Thus, the Convention would apply not only to nuclear material in domestic use, storage and transport but also to nuclear facilities used for peaceful purposes. The preamble of the Amendment underlined the threat of international terrorism and organized crime, and added emphasis on updated physical protection measures.[57] The IAEA defines nuclear security as "[t]he prevention and detection of and response to, theft, sabotage, unauthorized access, illegal transfer or other malicious acts involving nuclear material, other radioactive substances or their associated facilities."[58] The IAEA Glossary adds that the meaning of nuclear security "…includes 'physical protection', as that term is understood from consideration of the Physical Protection Objectives and Fundamental Principles, the CPPNM and the Amendment to the CPPNM."[59]

The concept is rather new for both the newcomers and some old users. An international regime on nuclear security is still developing and drawing substantial organizational governance

support from the existing nuclear nonproliferation regime. The legal basis of nuclear security rests on UN Security Council Resolutions 1373 (2001) and 1540 (2004), the International Convention on the Suppression of Acts of Nuclear Terrorism (ICSANT) and the Convention on the Physical Protection of Nuclear Material (CPPNM) and its 2005 Amendment. Supplementary legal instruments are the Convention on Early Notification of a Nuclear Accident; the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency; and the Code of Conduct on the Safety and Security of Radioactive Sources and the Supplementary Guidance on the Import and Export of Radioactive Sources.[60] Other elements include the Global Initiative to Combat Nuclear Terrorism (GICNT), Nuclear Security Summits, and the IAEA, which pioneered a network for education activities (the International Nuclear Security Education Network-INSEN) and coordinates the link between INSEN and the national nuclear security support centers (NSSC). One of the aims of nuclear security efforts is to produce a national culture on physical protection, material accounting, and to develop the norm of nuclear security. It includes a new set of tasks that require national level regulations, including legal and technical frameworks, education and training activities.

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For the newcomers, nuclear security seems rather an unfamiliar concept regarding the definition and perception of threat, terrorist attack scenarios, response measures and even terminology. This translates itself to a lack or insufficiency of national regulations to cope with the threat in facilities, transportation, borders and international cooperation to prevent the threat.

For an effective nuclear security policy, this article recommends that both newcomers and traditional users engage in cooperation and coordination efforts with relevant departments in public administration as well as those in industry and academia to work on a comprehensive plan of action. These departments include ministries of foreign affairs and energy, atomic energy authorities, civil defense agencies, CBRN departments in the military and civilian authorities, and the intelligence community. The academic community can contribute

through research in international relations, nuclear and physics engineering, psychology, sociology and communication, particularly to make simulation exercises to understand public reactions and for developing crisis scenarios. For effective communication and raising awareness, media and scriptwriters could play an important role to develop thrillers and movies regarding the threat and the response. The industry can engage in manufacturing relevant material for physical protection and civil defense. Last but not least, companies giving training to special security forces can provide special training programs on the security of nuclear power plants.

Nuclear Safety and Public Acceptance of Nuclear Energy

The concepts of nuclear safety and nuclear security usually cause confusion. Particularly, if they do not have a clear line between them in a specific language, it poses a problem in terminology. To make the concepts clearer, one can determine the referent in each term. Nuclear safety means protection of the workers, public and the environment from the risks of radiation by ensuring proper operating conditions, preventing accidents and mitigation of the consequences of accidents.[61] The relevant authorities take precautions to ensure safety, but there still may remain a risk. Nuclear security, on the other hand, involves the element of threat. It is a threat emanating from malicious intent to get hold of nuclear material, or to sabotage the facility or carrier of such material to inflict damage. In this case, the referent is the nuclear material itself.

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Public concerns and debates have usually revolved around the issue of nuclear safety. There have been three major reactor accidents that sustained high public perception of risk from nuclear energy and "anti-nuclearism" as a social movement: Three Mile Island (1979), Chernobyl (1986), and Fukushima (2011). The flip side of coin is that social movements like environmentalism and anti-nuclearism may also be exploited as tools to spread information in order to put pressure on national governments towards a certain "policy choice," particularly in

matters of energy. A sociological and psychological analysis would reveal why the public reactions to nuclear power plants/nuclear energy are usually negative.

At the sociological level, Ulrich Beck, a critical sociologist, explains that societies have reached the era in which they experience the adverse effects of development, industrialization and modernity. In the simple modernity era, they enjoyed its benefits. Right now, they are in what Beck calls the "reflexive modernity" period, meaning that modernity has become a problem in itself: Societies are faced with more pollution and environmental disasters as they grow and develop.[62] They also believe that policymakers are not capable of controlling ecological risks.[63] Thus, Beck introduces the concept of "risk society" based on the concern that dangers and hazards may become predictable but unpreventable, especially within the ecological context. This is applicable to nuclear technologies drawing from Beck's argument that "the injured of Chernobyl… are not born yet."[64] In this period, establishment of big-size projects, including energy projects, are no longer creating excitement, but rather anxiousness and fear. Thus, societies tend to prioritize the environment and to demand local and smaller projects, as part of a new life-style in harmony with the environment.[65]

At the psychological level, audiences are prone to listen and hear messages of "fear" as it is an extension of our drive to survive. They would be ready to receive negative scenarios on nuclear energy because of the impact of nuclear accidents which had massive impacts on their perception of risk. A nuclear power plant failure like the one in Chernobyl is not a possibility in today's world, but nuclear power plant projects can easily trigger its trauma. The failure in Fukushima was not due to an accident, but due its design. In several countries, it resulted in calls to reduce reliance on nuclear energy.[66] After Fukushima, Pew Research Center surveys found that the Japanese public opinion towards reducing the use of nuclear power rose from 44% in 2011 to 70% in 2012.[67] Still, the Japanese government decided in 2014 that nuclear energy would continue to be a key source for energy, and Japan's energy security as a stable and affordable supply and a means to combat global warming.[68] On the other hand, domestic politics, economics and safety culture have determined the German nuclear energy policy and that of nuclear phase-out.[69] Also, Switzerland has decided for nuclear phase-out as it could turn to renewables as alternative energy sources.[70]

A study on the public perception of nuclear energy in the EU countries found that the perception is mainly

determined by fear that is related to safety, terrorism, misuse of radioactive materials, and the eventual disposal of nuclear waste. It underlines that the precondition to gaining public acceptance is to ensure nuclear safety.[71] According to the Eurobarometer 2010 survey on the public perception of safety, more than half of Europeans think that nuclear energy is risky.[72] It also found that although it had been decades since the Chernobyl accident, Europeans expressed resistance and distrust to and perceived threat from nuclear energy, which reflected itself in their perceptions of risk. Also a considerable percentage thinks that the risk is underestimated.[73]

According to the Eurobarometer 2008 survey, 93% of Europeans demand an urgent solution to radioactive waste disposal.[74] The survey also measures the accuracy of Europeans' knowledge about nuclear waste, and finds that most of them know about other sources producing radioactive waste than nuclear power plants, such as research centers and hospitals. However, while 13% of the respondents know that nuclear waste is not always very dangerous, 78% believe that all radioactive waste is very dangerous.[75]

Europeans do not think they are well-informed about safety issues regarding NPPs.[76] EU citizens report receiving information on nuclear energy mainly through the media, but they did not think it was enough to form their opinion on nuclear issues.[77] Instead, they trust scientists the most for information on nuclear energy. This is followed by national nuclear authorities and then the IAEA.[78] The Eurobarometer survey also finds that the nuclear industry is not seen as a reliable source of information regarding issues of nuclear energy.[79]

The Globescan poll conducted in June and September 2011, interviewed people from 23 countries- those which have nuclear power plants in operation, which plan to have NPPs, and those without them. Examples of countries surveyed were Brazil, Indonesia, Japan, Mexico, Russia, Peru and Turkey. The results of the poll, based on an average of 12 countries surveyed, reveal that 30% of the respondents think that nuclear energy is dangerous and that all operating NPPs should be closed down as soon as possible. In countries planning to have NPPs, around 40% of respondents in Chile, Egypt and Turkey gave the same answer, surpassing the supporting view of nuclear energy.[80]

The threat of terrorism and nuclear security became an issue following 9/11 and further influenced public opinion. Europeans consider lack of security in NPPs against terrorist attacks, the

misuse of radioactive materials and the disposal of radioactive waste as the highest risks to nuclear safety. More than half of them think that NPPs are not sufficiently secured against terrorist attacks and 45% disagree with the statement that "nuclear materials are sufficiently protected against malevolent use."[81] An earlier Globescan poll was conducted for the IAEA in May and August 2005 in 18 countries: Argentina, Australia, Cameroon, Canada, France, Germany, Great Britain, Hungary, India, Indonesia, Japan, Jordan, Mexico, Morocco, Russia, Saudi Arabia, South Korea, and the United States. Views on nuclear security in these countries reflect the perception of the high risk of terrorist acts involving nuclear facilities and radioactive materials due to insufficient protection.[82] The plurality of the respondents thinks that there is a high risk of nuclear terrorist acts.[83]

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The Nuclear Energy Agency (NEA)'s Forum on Stakeholder Confidence (FSC) focusing on radioactive waste management, recommends some confidence factors to develop and enhance feelings of familiarity and control. These are openness, transparency, technical competence and procedural equality.[84] As a result of the FSC meetings in Finland, Canada, Belgium, Germany, Spain and Hungary, the OECD/NEA has found that the involvement of stakeholders in the management of radioactive waste has served to incorporate public values into decisions, build trust in institutions and educate and inform the public in these countries.[85] If the public will participate in nuclear decision-making, it needs to be equipped with knowledge on the issue. Therefore, to improve understanding of the benefits of nuclear energy, education and communication are crucial.[86]

In domestic policy-making, communication is underutilized. The public is generally receptive to messages involving fear, anxiety or panic, exposing them to manipulation in terms of the perception of risk. In nuclear energy debates, knowledge is often "constructed" rather than fact-based. The majority of civil society organizations participating in nuclear energy debates originate from the environmentalist tradition. From a broader perspective, the conflict between environmentalist

and anti-nuclear movements with the proponents of nuclear energy belong to two rival discourses of mainstream and critical worldviews. Put differently, while the mainstream worldview focuses on "solving the problem of energy" in the framework of meeting the rising demand, the critical view favors a new life-style that focuses on reducing energy demand for the sake of protecting the environment.[87] The latter view is expressed by campaigns, protests, demonstrations and concerts which appeal to the youth and sustain public perceptions of risk. Policymakers should consider domestic concerns, the role of civil society, and information politics in their endeavor.

Conclusion

This article provided an outlook of the relationship between nuclear energy and international relations. The peaceful use of nuclear energy is one of the three main principles of the nuclear nonproliferation regime, and states embarking on nuclear power generation are subject to far more extensive rules and regulations compared to other sources of energy. The demand for nuclear energy is rising following the increase in overall demand for energy, and state concerns to limit dependence on fossil fuels and CO2 emissions. However, states are also faced with new challenges in terms of nuclear energy. First, there will be constraints on the nuclear fuel cycle as the settlement on the Iran nuclear issue has limited indigenous production of nuclear fuel and the access of NNWS to sensitive technologies. Second, states are expected to take measures to prevent nuclear terrorism, requiring additional expenditures for security, training and bureaucratic adjustment. Third, they will have to cope with rising concerns on nuclear safety and anti-nuclear movements at the domestic level.

The article has made some recommendations for policymakers on the planning, decision-making and implementation phases of the pursuit of nuclear energy in line with the requirements at the international and domestic levels. First of all, NNWS under the NPT have the right to use nuclear energy for peaceful purposes, and according to the updated norm of safeguards, they are expected to accept and implement the Additional Protocol as a demonstration of transparency. Second, although the estimates of domestic energy need and the number of planned nuclear reactors may make the acquisition of a full nuclear fuel cycle feasible, newcomers should be ready for a denial of sensitive technologies and to depend on fuel suppliers. Third, all states using or planning to use nuclear energy for peaceful purposes are under

the obligation to provide for protection of nuclear materials in order to prevent them from terrorist access. Particularly, in the developing countries, which are new to nuclear energy, training and education programs for nuclear safety and security are essential. These programs should go beyond the narrow energy bureaucracy and cover relevant government agencies, universities and industry. They must also be multidisciplinary to have an accurate understanding of the threat and to be able to formulate an effective response. Fourth, public acceptance of nuclear energy is low almost worldwide. The energy and security bureaucracy could reach out to social communication experts and the movie industry for effective communication tools to spread accurate information on nuclear safety and nuclear terrorism without creating panic.

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Where Does Turkey Stand in the Quest for Civilian Nuclear Energy in the Middle East?

Nurşin ATEŞOĞLU GÜNEY*

Abstract

Some Middle Eastern states have proposed massive projects for building nuclear power plants (NPP) as part of their energy security plans to cut down reliance on electricity production from gas or hydro resources. The gold standard of attaining nuclear energy was introduced to the region by the UAE's experience and then Turkey came up with the BOO model of acquisition for its first NPP. The attraction of the BOO model is not only the financial relief that it brings for the aspirant country, but also the non-proliferation characteristics it carries. Turkey's second attempt at a BOT model nuclear plant is also in line with its aim of developing civilian nuclear energy, along with international non-proliferation frameworks. This paper examines why and how Turkey launched its civilian nuclear project as part of its energy supply security trajectory and where it currently stands in the Middle East from the perspective of nuclear non-proliferation.

Key Words

Akkuyu, ATMEA1, Russian Federation, Turkey, Japan, BOO, BOT.

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Introduction

This paper analyzes Turkey's agenda to build nuclear power plants not only in terms of its domestic energy profile but also with reference to the rising interest in Middle Eastern countries to benefit from nuclear energy. It aims to point out similarities and dissimilarities between Turkey and selected countries in the Middle East that have proven a certain degree of commitment to building nuclear power plants as to increase the share of nuclear in their energy mix. Its main concern is to conclude to what extent Turkey's nuclear energy agenda entails similar and dissimilar characteristics from its counterparts and fits with nuclear non-proliferation rules.

The interest of aspirant countries for civilian nuclear power plants in the Middle East is not a new phenomenon. It was in 2006 when 14 states from both the Middle East and Asia opted to acquire nuclear technology. This new demand for civilian nuclear technology in the Middle East led to

a growing concern among Western countries on issues related to nuclear non-proliferation. The main question was whether the growing demand for nuclear technology was about nuclear renaissance or could it channel means to acquire weapons. Since then the international community's efforts have focused on the development of precautions that could strengthen international measures for nuclear non-proliferation.

Political consequences of the Arab Spring and the rise of doubts towards nuclear energy following the Fukushima nuclear power plant meltdown affected projects in a number of countries interested in developing nuclear power reactors. These effects were supported by the decisions of countries with established nuclear programs on diversifying their investment plans towards non-nuclear technology. For instance, both Germany and Switzerland decided to phase out their nuclear programs. However, despite the negative effects of the Arab Spring and Fukushima, most of the Middle Eastern countries that had nuclear power plant projects did not halt their programs. On the contrary, many, as in the case of Saudi Arabia and the United Arab Emirates (UAE), secured financial capacity to erect plants, and approved civilian nuclear energy as part of the diversification of their national energy programs. The Turkish government, in the meantime, appeared determined to build nuclear power plants so as to sustain energy supply security for two significant reasons: First, to reduce its heavy dependence on coal, oil and gas imports; and second, to balance the environmental consequences of the extensive use of hydrocarbons by decreasing overall carbon emissions. Turkey's extreme dependence on coal, oil and gas imports differs from that of many other Middle Eastern countries, which have launched nuclear energy programs despite their being leading oil and gas exporters with no import dependence.

Political consequences of the Arab Spring and the rise of doubts towards nuclear energy following the Fukushima nuclear power plant meltdown affected projects in a number of countries interested in developing nuclear power reactors.

Despite this difference there are important similarities shared by these countries in trying to build nuclear power plants. Concerns over carbon emissions have resulted in efforts to decrease them, and these countries' plans to limit carbon emissions constitute an

important shared argument. In other words, they perceive nuclear power as a necessary part of acquiring vital technology for transitioning to a low carbon economy. The second rational is to decrease domestic use of oil and gas so as to save more hydrocarbons to export and sustain state revenues. Most of the countries in the Middle East in the last decade have been motivated more or less for these reasons along with the following specificities: Countries like the UAE, Saudi Arabia, Egypt, Jordan, Kuwait and Turkey have all found themselves facing a sharp increase in demand either for electricity or water. This has led to them facing the risk of being heavily reliant on natural gas for electricity generation. In some of these Middle Eastern countries, when the need for gas has outstripped the locally available supply, they have naturally been inclined to allocate increasing amounts of valuable liquid fuels to domestic power generation with a commensurate increase in economic and environmental costs. Hence, for Turkey the energy supply security naturally becomes a major priority, as it is for other energy dependent countries in the same geography. It is true that countries like Turkey felt the need to emphasize the diversification of sources of energy supply needed for their current demands for electricity power generation.

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What about the actual status of nuclear power plants in the Middle East? Iran constructed its first reactor despite long running problems and sanctions applied by the international community to increase the transparency of its nuclear program. The UAE is on the way to constructing its first reactor soon. The UAE's case, from the perspective of nuclear non-proliferation, has been introduced as the *gold standard,* whereby the Abu Dhabi government, by signing the "123" agreement with the U.S., has made clear that it is not going to enrich uranium on its territory despite its natural right to do so according to Article 4 of the Non-Proliferation Treaty (NPT). So, the UAE case has been introduced - especially by the West and particularly by the U.S.-as the most secure way of attaining civilian nuclear energy by the non-nuclear signatories to the NPT. However, this path of development for civilian energy has not been adopted by other countries, since Article 4 did not necessitate them to do so. But this dual track effort of opting

for civilian nuclear power reactors has not prevented the rise of a second wave of debates in the West about whether some of the states in the Middle East can hedge, and hence has led to the rise of a new tide of nuclear renaissance.

Turkey's attempt to acquire three nuclear power reactors came to the fore within these debates. It launched a new start in 2010 by signing an agreement with Russia on constructing a nuclear power plant in Mersin Akkuyu (by the Mediterranean) and later with a Japan-French consortium to construct a second plant in Sinop (by the Black Sea). In short, Turkey rationalizes its nuclear energy agenda by claiming the flaws in its supply security based on oil and gas imports on the one hand and the need for lower carbon emissions on the other. Reactors built by the Middle Eastern countries do not directly affect Turkey's nuclear agenda, and yet lead to another factor that supports construction of reactors in Turkey like anywhere else in Europe, Eurasia and the Middle East. Turkey's energy agenda, therefore, proves a certain degree of commitment to nuclear energy that is based on supply security and environmental concerns stemming from the continued priorities in government policy. This paper will first focus on Turkey's energy supply security strategy and then analyze Turkey's nuclear power plant deals from the perspective of how appropriate they are within the main contours of nuclear non-proliferation rules.

The Energy Supply Security Issue and the Turkish Case

Global energy security is composed of supply and demand side countries, although a few of them totally benefit from domestic resources. In its most general sense, there are energy producers that determine the supply side of the story on the one side. The demand side seems to be more complicated and yet those countries that are dependent on imports are distinct with their own priorities, as in the case of high prices versus low prices. While the fuel producing, countries are trying to secure the demand for their resources at profitable prices, the consuming countries are leaning towards different methods of cost minimization as much as they are diversification of resources, routes, and technologies as well as energy efficiency, as the crucial tools of bettering and securing their energy supply security.

Turkey, within this structure, appears as a good case of an import dependent country that is in urgent need of supply and supplier diversification and cost minimization. Turkey geographically is located between the fossil fuel

producing countries to its east and hydro carbon consuming European countries to its west. This geographic feature partially explains why Turkey has been trying to become an efficient energy transit and if possible hub country with the purpose of channeling some of the oil and gas to its domestic markets. That is why Ankara has mostly focused on increasing the passage of the number of pipelines- either from east to west or from north to south--thus connecting itself between producing countries and consuming ones. However, Turkey's high rate of economic growth and urbanization has resulted in a continued increase of energy consumption, making the country's dependence on oil and gas imports reach 70 %.

Turkey does not have nuclear power plants and fossil reserves are extremely limited. At the same time, primary and secondary energy demand is growing rapidly for various reasons, among which economic growth, urbanization, and population increase take important shares. Turkey's electricity demand almost doubled in the ten years after 2004, reaching 207 terawatt-hours (TWh) in 2015. In addition, the country's gas demand has grown even faster, increasing from 22 billion cubic metres (bcm) to 49 bcm.[1]

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On the one hand, this incessant growth has led to an increase in imports of coal, oil and gas. On the other hand, it has supported the rise of renewable energy and evoked the necessity of nuclear energy. The increase in consumption has also forced the country to liberalize its energy markets. The IEA's in-depth review of 2009 is noteworthy as it shows how Turkey, in that year, managed to introduce liberalization and privatization of the country's electricity generation and distribution. This report stated that by reforming the energy (electricity) sector, Ankara had specifically helped to trigger a private investment boom.[2] This was indispensable to increasing the number of electricity power plants fueled by coal, gas, hydro, sun and wind.

Turkey's energy trajectory would be followed in subsequent IEA reports. The IEA's in-depth review in 2016 welcomed Turkey's efforts to achieve sustainable economic growth, which aims to meet the country's energy targets for 2023.[3] Both of these objectives were presented in Turkey's

Energy's Strategic Plan (2010-2014)[4] and (2015-2019)[5] alongside Ankara's new 2030 climate pledge that was submitted to the Paris 21st Conference of the Parties (COP21) in 2015.[6] As mentioned by IEA, Turkey has been aiming to develop and achieve a new energy development target specifically for 2023 (the 100th anniversary of the Republic of Turkey). Ankara, in this regard, wants to prioritize the development of Turkey's domestic resources. Among them lignite coal takes a special place with its ability to support employment and reduce costs. Renewable energy has been attributed considerable significance with a 30 % share in the energy mix. Reduction of energy intensity by 20 % below 2010 levels is aimed at through attaining improved efficiency. Turkey, even in a best-case scenario, which denotes full achievement of goals set for domestic coal and renewable resources while decreasing intensity and increasing savings, would face a vulnerability in supply security. Turkey, in this case will either increase its dependence on coal, oil and gas imports, or build nuclear power plants to prevent a further reliance on fossil fuels. This flaw in energy supply security appears as the most significant factor that rationalizes Turkey's interest in building nuclear power plants.[7]

Currently, half of Turkey's electricity comes from natural gas, a quarter from coal and marginally less from hydroelectric.[8] Two-thirds of its natural gas comes from Russia via pipelines, with most of the remainder coming from Iran, and a small amount of gas in the form of LNG from Algeria and Nigeria. Turkey, currently imports more than 89 % of all natural gas that it consumes, which is why Ankara feels obliged to take into account the challenges that can affect and disrupt the stable conditions of geopolitics around Turkey that may directly and negatively affect the country's energy supply security.[9] Hence, Turkey, like other countries in the region, is evaluating nuclear power, alongside renewables, as a serious means of reducing its dependence on imported energy.[10] In this regard, Akkuyu on the Mediterranean coastal area of southern Turkey and Sinop on the Black Sea coast in the north of the country have been chosen as possible sites for nuclear power projects.

Turkey's Quest for Nuclear Power Plants

Background

Turkey does not have any commercial nuclear reactors, even though its efforts of acquiring one date back to 1956.

Turkey's quest for nuclear energy has failed thus far for a number of political, diplomatic and economic reasons. Nevertheless, it resulted in the establishment of institutions and legal frameworks which would be supportive of recent plans to build Akkuyu and Sinop nuclear power plants. The establishment of the Turkish Atomic Energy Authority (TAEK) in 1956 was a significant breakthrough that would result in the educating of energy experts with specialization in nuclear energy technology. It should however be underlined that Turkey's nuclear capabilities have been consistently stalled at the research and development stage. Turkey conducted sophisticated nuclear fuel cycle research at the Çekmece Nuclear Research and Training Centre (CNRTC) near İstanbul and also at İstanbul Technical University. Ankara today only possesses a small research reactor, known as TR-2 with 5MWt nominal power, which is located at the CNRTC.[11] Even though the researchers in Turkey are familiar with the Purex process for separating plutonium from spent fuel, Ankara has made it clear that they are not interested in opting for either uranium enrichment or reprocessing capabilities from the nuclear power reactors planned for the future. Consequently, the CNRTC has remained as a small nuclear fuel fabrication pilot plant.[12]

Turkey's commitment to building nuclear power plants has been characterized by its urgent need for primary resources to secure the incessant growth in domestic consumption. Every failure, within this process, has taken place with the growing share of fossil fuels in industrial, commercial, and individual consumption as well as in electricity generation.

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The first formal civilian nuclear-energy program was launched in 1968 as part of a five-year national development plan. The project was shelved shortly after due to a lack of funds. Nearly fifteen years later, in 1983, Prime Minister Turgut Özal revived the project to build a 600MWe nuclear power plant at Akkuyu Bay. However, this project would also fail because of similar recurring technical and financial problems that faced Turkey at the time (high inflation, budget deficits, increasing international debts and instability of macroeconomic

parameters). It was in the late 1990s, when Turkey confronted the risk of energy shortages or a boost in imports of fossil fuels that it decided to revitalize its nuclear energy agenda. In turn the government acknowledged the urgent need for nuclear energy to fuel the expected economic growth. Turkey initiated a comprehensive nuclear-energy program, and hence invited bids for the construction of a power plant at Akkuyu.[13] It was not until the start of 2000 that Ankara received various bids for its Akkuyu nuclear plant project but again because of recurring financial difficulties Turkey had to stop and postpone its nuclear project until 2008. The period after that differed from previous attempts. Turkey not only ended hyperinflation, it also managed to construct a reliable macro-economic environment with manageable international debts compared with other epochs of its nuclear initiatives. This was predominantly due to the rule of one party whose investment projects would be less vulnerable to political and economic dynamics, with the partial exception of negative consequences of the Syrian civil war.

The Akkuyu Nuclear Power Plant Project

The AK Party government first announced in 2006 that it was planning to build three nuclear power reactors in Akkuyu reaching a total capacity of 4500 MWe, to become operational by 2012-15. Ankara made public that the port city of Sinop on the Black Sea was chosen to be the host of Turkey's second commercial nuclear reactor. While the government in Turkey was busy with issuing license procedures, in November 2007, a new law that was associated with the Construction and Operation of Nuclear Power Plants and Sale of Energy produced by them was passed by the Turkish parliament and subsequently approved by the president. This new bill authorized TAEK the right to set the criteria for building and operating the plants. Under this bill the Turkish Electricity Trade and Contract Corporation (TETAŞ) was authorized to buy all the power under a 15-year contract[14]. These newly published regulations have helped the determination of criteria for investors who are ready to construct and operate nuclear power plants in Turkey. IAEA safety rules were also made compulsory to be applied along with the on-going legal processes. Additionally, a civil nuclear cooperation agreement between Ankara and Washington, signed in May 2008, has also entered into force.[15]

Turkey had to wait until 2008 to find a new way of transcending the financial burden of opening up new bids for the

Akkuyu power plant. Ankara previously has, in its attempt to initiate a nuclear-reactor project, several times faced the difficulty of providing the financial means and so has been obliged to shelve the project. Turkey first proposed 100 percent vendor financing in 1977, but could not succeed in codifying this approach into law until 1983. Prime Minister Turgut Özal introduced a new kind of financing arrangement for the nuclear power plant by securing the much-needed foreign direct investment without spending the limited capital of the country. The Build, Operate and Own (BOO) model is in fact an evolutionary financing approach to the Build, Operate and Transfer (BOT) financing model in itself. This BOT[16] model, which the Turkish Prime Minister came up with in the early 1980s, became an inspiration for and brought the possibility of nuclear energy to many other developing countries.[17] In this way Turkey solved the problem of finding investment for the Akkuyu project and in the aftermath of the introduction of new Law No: 3096. TETAŞ finally called for tenders. Soon after, in 2008, the Ankara government went on to pass another nuclear Law called Law No: 5710,[18] which helped TETAŞ oversee the bidding process and select the most competitive contender. At the end of this bidding process, which included 14 interested bodies, only one bid, by Atomstroyexport in conjunction with Inter RAO (both from the Russian Federation) and Park Teknik (Turkey) was received/acknowledged for an AED-2006 power plant with four 1200 MWe reactors.[19]

Turkey, from the very inception of its bid for the Akkuyu power plant, has insisted on deferring the financing issue to the vendor. At the same time, Ankara has made it clear that they do not want to store the nuclear waste either. Therefore, from the perspective of nuclear non-proliferation, the Akkuyu BOO model itself can be considered as a non-proliferation proof plant similar to the gold standard of the UAE's nuclear project, since Ankara has already let suppliers know that it wants potential vendors to take back the spent fuel that would otherwise increase doubts about whether further technical processes could be used to develop nuclear weapons. This is clear evidence that demonstrates how Ankara does not have any plans, nor will in the future, for the reprocessing process at the Akkuyu project.

Technically speaking, most nuclear countries do not want to take back the waste fuel. Instead they prefer it to be stored in the host country. That is why, because of the general lack of interest from the majority of nuclear tender

companies- either because of the financing issue or take-back condition of spent-fuel- it soon became clear that most companies preferred to abstain from the bidding process. For instance, Westinghouse, in this regard, expressed that it had no interest in the bid and AECL insisted that Turkey should put money into the financing of the project. Eventually, on 10th of April 2008 only four companies decided to purchase the tender documents and at the end of the bidding process it became evident that only one firm, Russia's Atomstroyexport (ASE) in partnership with Ciner Holding, had opted to submit a bid for the tender. TAEK, after reviewing the Russian proposal in December 2008, approved it. However, since the price of electricity per kilowatt-hour was found to be a bit high, the Turkish government then focused on means of assuring that the Russian firm reached a rational electricity unit price. In fact, the Energy Minister at the time, Mr. Taner Yıldız, made clear in late September 2009 that the two sides needed to come to an agreement on a reasonable price. These efforts by Turkey finally succeeded and the Russians agreed to drop their previous bid of 21.16 US cents per kilowatt-hour (US cts/kWh) to 12.35 US cts/kWh. This paved the way for Ankara and Moscow to reach an agreement for Rosatom to build, operate and own VVER-1200 nuclear reactors at the Akkuyu site.[20]

According to the BOO deal on the Akkuyu power plant, TETAŞ would buy a fixed proportion of the power at a fixed price of 12.35 US cts/kWh for 15 years or until 2030. The proportion would be 70 % of the output of the first two units and 30 % of that from units 3 and 4 for 15 years of commercial operation of each. Hence, the remainder of the power would be sold by the project company at market prices. In addition, since the cost of building the plant was expected to be paid off after 15 years, the project company was then expected to pay 20 % of the profits to the Turkish government.[21]

Turkey's energy relations with Russia were not affected by the jet incident although extensive sanctions hampered Turkey's economic revenues in non-energy sectors.

Some debates in the media and concerns of public opinion have come into the fore about the Akkuyu plant deal following its being ratified at the Russian and Turkish parliaments. They concentrated on whether or not the

BOO agreement brings any advantages for Turkey. Consequences of the civil war in Syria, that started to increase their negative impact on Turkey and Turkey's relations with third parties, would make the nuclear deal between Russia and Turkey confront important political issues related to the developments in Syria. The downing of the Russian jet on 24 November 2015 by Turkey can be exemplified as having had the greatest impact. Bilateral relations between Russia and Turkey would be suspended for about seven months between Ankara and Moscow. Russia declared economic sanctions against Turkey. It was not clear whether or not the sanctions, imposed by Russia on Ankara following the jet incidence, would negatively affect the Akkuyu project. However, it soon became clear that Russia had no such plans to include the Akkuyu project in the content of the various sanctions that were forwarded to Turkey. In short, Turkey's energy relations with Russia were not affected by the jet incident although extensive sanctions hampered Turkey's economic revenues in non-energy sectors. The timetable concerning the construction phases of the Akkuyu nuclear power plant would stay behind the schedule not due to political factors, but because of, allegedly, the expressed difficulty of Russia and Russian firms to secure a financial scheme due to international sanctions against Russia following its rising problems with Ukraine, the European Union and the USA on the Crimea issue.

Operational delays in the project were in fact mostly associated with Russia's and Rosatom's difficulty of raising loans from the commercial banks: a result of the rapid drawdown of capital in the Russian Reserve Fund from previous years. Moscow and Ankara searched for alternative means of finance that were needed for the Akkuyu plant. Russia and Turkey agreed in August 2016 to give Akkuyu a "strategic investment status."[22] With this new assigned status, it was expected that there would be special terms and conditions facilitating effective and rapid engagement of financial institutions and authorities within the investment funding of the project.[23] The other crucial impediment that stopped either side from terminating or denouncing the Akkuyu BOO agreement during the time of the "jet crisis" was associated with the fact that neither side wanted to take the risk of becoming exposed to sizeable compensation requests emanating from the conditions of the deal.[24] The BOO model and its likely success was crucial for Turkey's energy diversification objectives that have been made clear in Ankara's energy supply security strategic plans. On the other hand, the successful completion

of the Akkuyu plant was also essential for Russia, especially for assuring and increasing the credibility of Moscow's nuclear reactors within the existing competitive reactor market conditions, and to sustain beneficiary relations with Turkey with whom it shared occasional, yet vital, disagreements on the Syrian civil war.

Turkey's occasional problems with Russia, along with significant incidents most of which were somehow linked with the Syrian issue, raised further doubts about Turkey's increasing dependence on Russia for its energy supply security.

The public and political critiques emphasized that Turkey's extreme dependence on Russia would be even further exacerbated by the nuclear deal since Ankara was only diversifying the source but not the supplier. This approach has validity when the nuclear agreement is considered along with Turkey's fossil fuel imports from Russia. Although Turkey is the most dependent country on Russian gas in terms of electricity generation, the nuclear deal on its own seems to differ from this general picture. The characteristics of the BOO model make both Russia and Ankara mutually dependent on each another. Again, if Turkey's nuclear energy sector initiative is analyzed with no reference to its high dependence on fossil fuel imports from Russia, other projects promise to balance Russia's role in nuclear power generation for Turkey. Turkey's choice of a Japanese-French consortium for the second nuclear power plant in Sinop supports this argument. Another counter argument against the public concern over Turkey's increasing dependence on Russia is about the unique characteristics of the nuclear energy sector, which show a minimal interaction with issues other than nuclear. Russia attributes a strategic importance to expanding the geography on which it is building nuclear power plants. In turn, Russia has become the leader of the US$ 500 billion global nuclear energy market by attempting to build 37 % of all new reactors in the world.[25] In actuality, the Kremlin's new strategy goes back to 2006, when Russia first resolved to become one of the top suppliers of the global nuclear energy industry. Strategically, Russia would not be interested in damaging energy relations with countries that import its technology. As for technology, in 2006 Russian nuclear companies introduced a new edition of the VVER nuclear reactor that can generate power and desalinate water at the same time,[26] which has appealed especially to customers that are in water-stressed countries.[27] The marketing success of this technology is likely to be linked

to Russia's ability to establish reliable relations in the nuclear power sector. Rosatom is not only aware of this necessity but also very careful about offering the necessary service to maintain and manage processes within and outside of the nuclear chain, for which most of the importer countries lack the skill and know-how, as in the case of Turkey. Furthermore, the attractiveness of Moscow's nuclear reactor industry, in terms of confidence building, stems from Rosatom's new marketing method, which is called the BOO service, wherein Russia provides uranium fuel, manages the reactors, and disposes of the nuclear waste in different parts of the world. This Russian BOO service is appealing to energy hungry and dependent countries, as it cuts out many of the difficulties involved in attaining a nuclear reactor thus helping them to reach their objective faster and relatively easily. In fact, these features are those that a country would look for while building its first nuclear power plant. In short, it is not only about political relations between Russia and Turkey or Turkey's increasing dependence on Russia and Russian technology, but also about the terms of the Russian BOO model, which fits with Ankara's concerns and demands in this regard since support for production and post-production phases are crucial factors.[28]

The Sinop Nuclear Power Plant Project

Turkey plans to construct a second nuclear power plant in Sinop, in the northern part of the country, by the Black Sea coast. Japan's Prime Minister Abe and Turkish President Erdoğan, with the aim of assuring parties tracking the international standoff at that time between the West and Iran over its suspected nuclear arms, found it necessary in 2013 to sign a deal covering the peaceful use of atomic energy. In doing so they made it clear that the intention of building a reactor in Sinop had nothing to do with proliferation objectives, rather it was purely associated with Ankara's overall diversification efforts of its current energy mix so that Turkey could reduce its energy dependence on sources from abroad.[29]

The Sinop nuclear power plant project is a very important project not just for Turkey but also for "Mitsubishi Heavy Industries" MHI because it will be introducing the most advanced, latest, and safest technology, as noted by the CEO of Mitsubishi Heavy Industries MHI.

In 2015 the Turkish Parliament ratified an intergovernmental agreement with Japan to construct a nuclear power plant at Sinop-Inceburun.[30] The legal terms of the Sinop nuclear power plant fundamentally differ from the Akkuyu project since it will be operated on a Build-Operate-Transfer (BOT) basis. Atmea, a joint venture consortium of Japanese Mitsubishi Heavy Industries and French Areva, will carry out the project.

The Sinop nuclear power plant project is a very important project not just for Turkey but also for "Mitsubishi Heavy Industries" MHI because it will be introducing the most advanced, latest, and safest technology, as noted by the CEO of Mitsubishi Heavy Industries MHI. The CEO of ATMEA, Andreas Goebel, in the meantime clarified that, "the reactor would be based on third generation pressurized water reactors developed using French and Japanese nuclear technology. This means that, the ATMEA1 reactor has been designed [in such a way] to resist the expected exceptional incidents and [by this way it aims] to prevent [anticipated] damages to the environment."[31] These characteristics are crucial especially at a time when the nuclear safety standards of reactors constitute the growing concerns of the locals in the region. That is why the CEO of ATMEA1 very confidently asserts that with the new reactor in Sinop, "even in a severe accident, there will be no need for long-term relocation of people in the proximity of the plant."[32]

Where Does Turkey Stand in the Face of the Debate on Proliferation?

Civilian nuclear programs, under the umbrella of the NPT, entail the possibility of covertly attaining nuclear military capability. A country with a nuclear power plant might be able to develop and so own nuclear weapons by either using uranium enrichment or spent fuel reprocessing if it acquires the technology. In fact, that is exactly how North Korea acquired nuclear weapons, thus increasing the concerns of the international community on the link between nuclear energy and nuclear weapons. In this respect, the likelihood of the Iranian civil energy program leading to a military nuclear capability has been slightly stalled by the signature of the Joint Comprehensive Plan of Action (JCPA) treaty in July 2015.

Even before the signature of the Iranian nuclear deal between Tehran and the P5+1, speculation began that some states in the Middle East might have felt obliged to pursue a nuclear program because of Iran's newly gained status. However, immediately following

the signature of the JCPOA, a number of eminent nuclear experts expressed their belief that this was not going to be the case. According to these experts,[33] international doubts on the likelihood of nuclear proliferation were outcomes of overestimation, since most of the countries in the Middle East had serious constraints and limitations to becoming a nuclear power. Some other experts,[34] however, pointed out that the quest for nuclear power plants had the very potential to trigger a nuclear weapons cascade in the region, and in turn they immediately called for limiting the spread of civilian nuclear power plants in the Middle East. Legally, the NPT has no prohibition on non-nuclear countries that are interested in development of a domestic nuclear fuel cycle. Technologically speaking, to acquire a domestic fuel cycle does not appear as an attainable goal unless a nuclear power supports them. As Dina Esfandiary asserts, the development of a nuclear bomb is not an easy task even for those countries which have nuclear power plants, since it necessitates further technological knowledge and equipment.[35] In this regard Esfandiary reminds us that it took nearly six years for the US to attain nuclear power despite Washington's vast resources and advanced know-how,[36] whereas it took China roughly 10 years and two decades for Pakistan.[37] As was mentioned earlier, a country that aims to develop a nuclear bomb has either to go through the uranium enrichment process or will try to extract plutonium from the used waste fuel. Yet, as Esfandiary[38] and other experts believe, since both of these processes involve complicated technologies that are certainly subject to strict international controls, it is not easy to achieve. Hence, the aspirant countries for nuclear energy, by being signatories to the NPT and members of the non-proliferation community, have already agreed to forego the enrichment or reprocessing process and put their civilian nuclear programs under strict controls. Those who have enough financial means to overcome these technical constraints will definitely face political constraints as long as they pursue illicit ways of acquiring military nuclear capability. Thus, after examining the above-mentioned status of the aspirant states for nuclear reactors, one can easily repudiate the debate that states like Saudi Arabia, Egypt or Turkey may feel the need to "go nuclear" due to the newly attained position of Tehran in the aftermath of the CJPOA deal- namely Tehran's legitimate right for 3.65 % of uranium enrichment.

After having explained why experts in general do not expect a new wave of nuclear cascade in the aftermath of the Iranian nuclear deal in the Middle

East, it would be very beneficial to explain at this point Turkey's choices of nuclear power plants and how they are compliant with the aims of nuclear non-proliferation objectives. This situation of course stems from Ankara's transparent non-proliferation record where Turkey up to now has signed all the crucial international agreements that are related to and compatible with regional and global nuclear aims of the non-proliferation community.

Turkey has proven full commitment to the necessities of the NPT since 1979, being a member of the IAEA since 1957. It furthermore has supported all non-proliferation initiatives regardless of the political concerns. In turn, Turkey not only signed and ratified the international agreements but became one of the actors that pursued the full commitment of the parties so as to avoid nuclear weapon proliferation.

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Ankara's trajectory can be followed from the legal milestones signed and ratified by the governments at the time:

(i) In 1981 acceptance of the IAEA Comprehensive Safeguards Agreement; (ii) in 2001 acceptance of the IAEA Additional Program to its Safeguards program; (iii) in 1986 acceptance of the IAEA Convention on the Physical Protection of Nuclear Material; (iv) in 2000 acceptance of the UN Comprehensive Test Ban Treaty; (v) acceptance of the Convention on Early Notification of a Nuclear Accident; (vi) in 1995 acceptance of the Convention on Nuclear Safety, and finally; (vii) in 2009 acceptance and signing of the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Management.[39]

In addition to these multilateral agreements at the international level, Turkey engaged in bilateral agreements with the purpose of sustaining reliable management of power plants and avoiding proliferation of nuclear weapons. To this end, Turkey signed a technical agreement in place with Ukraine and early notification agreements in place with Bulgaria, Russia, and Romania. In addition to these countries that had nuclear power plants in its vicinity, Turkey engaged in cooperation and agreements with countries further afield- signing various

bilateral agreements with Canada, Argentina, South Korea, the United States, Ukraine, Russia, France, Jordan and Germany.[40] Ankara, since the beginning of its first attempt to obtain a nuclear reactor and later during its renewed quest for nuclear power plants, cooperated with international institutions especially throughout the policy development and legal processes. Turkey, within this perspective, has given its utmost attention to working and cooperating with the IAEA and the OECD's Nuclear Energy Agency. Turkey's full commitment to international standards and agreements can be summarized with reference to a remark made by the Turkish ambassador to the United Nations, Tomur Bayer. "Bayer [made a pledge that was witnessed back] in September 2010 [where he] said Turkey [would be] committed to the goal of ensuring safe, secure and peaceful utilization of nuclear energy and would continue to work closely with the IAEA [is clearly meant to recognize and acknowledge Ankara's path to civilian nuclear energy]".[41] This remark still continues to reflect Turkey's priorities of acquiring nuclear power plants as in the cases of Akkuyu as well as Sinop.

Turkey, when pursuing the two nuclear power plants at Akkuyu-Mersin and Sinop, made clear that it was not planning to use either enrichment or reprocessing processes at these projects. Since the Akkuyu project is based on the BOO model, Ankara would in no way be able to conduct either uranium enrichment or reprocessing processes at the plant. This legal requirement was added by Turkey to assure the international community about transparency on the one hand and a call on other countries at different phases of their nuclear energy programs to follow the example of BOOs terms at Akkuyu or agree with additional commitments made by Turkey as in the BOT model at Sinop. Regarding the BOT model of the Sinop Power Plant, Ankara accepted to store the spent fuel at the end of the nuclear process, and yet declared that this would be subject to full transparency to increase safeguards on the one hand and avoid any reprocessing process on the other. This does not mean however that Turkey- as with other non-nuclear NPT countries--is withdrawing from its right of maintaining all potential fuel cycle technological opportunities.[42] Turkey underlined that the re-use of waste from the Sinop Power Plant would be treated as a matter of cost reduction and safety management rather than for military purposes.

After Turkey signed an agreement with Russia to build its first NPP this decision was criticized by environmentalists and some nuclear experts on the grounds

that Russian technology is old and has safety concerns. After the meltdown of the Japanese Fukishima reactor there was an increase in opposition to the plan. However, Ankara is quite confident about its first NPP nuclear safety standards especially since it has implemented its stress test activities based on European Nuclear Safety Regulators Group (ENSREG) specifications and preliminary design information provided by the utility.

Conclusion

Turkey is in need of nuclear power plants because of its growing energy demand, lack of domestic fossil fuels, high reliance on energy imports, and plans to decrease carbon emissions.

Turkey is in need of nuclear power plants because of its growing energy demand, lack of domestic fossil fuels, high reliance on energy imports, and plans to decrease carbon emissions.

Turkey, as a non-nuclear member of the NPT, has been attempting to construct nuclear power plants in accordance with international non-proliferation frameworks to which it is a party. Turkey's full commitment to international bilateral agreements, with other states and international institutions and organizations, characterize the general framework of its nuclear power plant projects to be constructed in Akkuyu and Sinop. Despite their similarities, in terms of full commitment to international transparency and safety measures, there are certain differences between the Akkuyu and Sinop nuclear power plants because of different counterparts (Russia in Akkuyu, a Japanese-French consortium in Sinop) and different legal terms (BOO in Akkuyu, BOT in Sinop). Differences between these two projects are primarily in economic and managerial terms. The most significant difference arises from the peculiarities of the BOO model of Akkuyu and the BOT model of the Sinop Power Plant. Turkey, according to the BOO model of Akkuyu, will not store the used fuel. The BOT model of Sinop, in the meantime, obliges Turkey to take care of the used fuel for which the government voluntarily adopted full transparency safeguards. Both of the cases proved important compatibility with Turkey's international agreements at the state, institutional and organizational levels to sustain transparency and international auditing for peaceful and safe management of nuclear

power plants. These terms arising from nuclear power plant agreements and Turkey's international commitments are significant since it seems likely for Turkey to launch a third nuclear power plant project to be constructed in İğneada in Kırklareli province on the Black Sea. It is likely for Turkey to sustain transparency and reliability from this general framework regardless of the BOO, BOT or a third model to be adopted if this project comes to fruition.

As to the political and financial climate, Turkey, with its transparent and perfect non-proliferation record, and its modest built-up capacity in the nuclear sector, is able to operate research reactors with a pool of nuclear professionals and newly launched nuclear education programs.

As to the political and financial climate, Turkey, with its transparent and perfect non-proliferation record, and its modest built-up capacity in the nuclear sector, is able to operate research reactors with a pool of nuclear professionals and newly launched nuclear education programs. Together with a determined political commitment it is now trying to adapt itself to the existing/present civilian nuclear energy realm by arranging and making its legal framework and institutional infrastructure compatible with this objective.[43] Ankara in this regard, has been adopting new regulations since 2010 to shift from a private investment model for nuclear generation to a public-private-partnership model. In effect, Turkey has been trying to minimize the government's financial risks by targeting state-to-state cooperation for the construction and operation of nuclear facilities, thus overcoming what used to be one of the crucial impediments in Ankara's quest for nuclear power.

Today, after having experienced a short stalemate in the Akkuyu project in 2015-2016, with the positive effect of newly reset Turkish-Russian relations, Turkey is confidently expecting to have the reactor units online in Akkuyu by 2023. Success in this first project would give Ankara a leverage for the completion of the second and possibly third civilian nuclear power plants.

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Assessing Turkey's Climate Change Commitments: The Case of Turkey's Energy Policy

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Abstract

Climate change is increasingly recognized worldwide as a growing threat. The UN's sustainable development goals and the Paris Conference (COP 21) attest to this. Countries confront the challenge of managing the trade-off between energy-intensive growth and climate change effects. In this historical juncture, a renewable energy- based third industrial revolution is underway. In the post-COP 21 period, it is now imperative to analyze the (non)-compliance of signatories to their commitments towards climate action. Turkey is no exception to this trend. In this light, this paper examines the credibility of Turkey's compliance with its commitments at the COP 21 with special focus on the public attitudes in Turkey towards climate change and the government's (non)-adoption of climate action as a norm in its energy strategy documents and its energy policy practices. It concludes that regardless of Turkey's COP 21 commitments and public perceptions on climate change, Turkish policy makers prioritize availability in its energy policy to foster economic growth.

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Key Words

Sustainable Development, Climate Change, Energy Policy, Public Opinion, Turkey.

"A more immediate danger [than asteroids and nuclear war] is runaway climate change. A rise in ocean temperature would melt the ice-caps, and cause a release of large amounts of carbon dioxide from the ocean floor. Both effects could make our climate like that of Venus, with a temperature of 250 degrees."[1] *Prof. Stephen Hawking*

Introduction

As the globe confronts a "trilemma of energy challenges" [2] (fossil fuel based energy systems, soaring energy consumption, and energy availability concerns), countries confront the daunting task of ensuring their "energy securities"[3] by carefully managing the trade-off existing between energy-intensive growth and its environmental degradation effects (i.e. climate change).[4] Actually, many scholars evaluate this debate on sustainable energy under

the topic of "the third industrial revolution".[5] In this parallel, renewable energy supplies and technological advancements in efficiency (i.e. smart grids) in energy systems have been offering prospects for countries to decouple economic growth and carbon emissions.[6] It should be noted that strategies to decarbonize economic growth do not solely address energy usage (e.g. coal consumption, energy efficiency, etc.), but also sustainability problems directly/indirectly related with carbon emission levels such as industrialization,[7] urbanization,[8] transportation,[9] agriculture,[10] and live animal stocks.[11] For sure, a cross-country comparison of those factors' changing emission levels through a longitudinal perspective would be meaningful, but due to the scope of this special issue and objectives, this paper mainly focuses on energy (particularly coal as the largest emitter) policy.

Renewable energy supplies and technological advancements in efficiency (i.e. smart grids) in energy systems have been offering prospects for countries to decouple economic growth and carbon emissions.

Sustainable energy related debates and policies at the domestic level have increasingly been embedded within the international energy agenda.[12] Indeed, a paradigm shift has been taking place among domestic actors towards a sustainable energy future. Particularly domestic actors in advanced democracies (e.g. Germany, Australia, etc.) have been enquiring sustainability of energy sources and they have been deliberatively requesting future energy alternatives to fossil fuels from their governments. Mainly due to governments' difficulty to come up with economically acceptable policies for the whole society, those public preferences for low-carbon economy have been translated into policy outcomes with different levels of success.[13] Germany is one of the success stories in this regard. In December 1985, it was *Science* that introduced climate change into the public (media) discourse, and after its media coverage "success", the issue has been translated in German politics, culminating in the phasing-out from nuclear and "*Energiewende*" (energy transition) policy aims to accelerate the country's energy transition to a low carbon economy.[14]

In this context, the credibility of Turkey's commitment to fighting climate change in its energy policy is the focus

of our critical approach in this paper. We assess the credibility of Turkey's COP21 commitment with reference to public opinion on climate change and the adoption of climate action as a norm in Turkey's energy policy strategy documents and practices.[15] Although historically the impact of public opinion on foreign policy has been dismissed in the International Relations literature, recent studies point out that public opinion has significant influence on foreign policy, although political elites also influence public opinion.[16] At a minimum, the public is considered as a constraining factor for the government during international negotiations.[17] From a rational choice perspective on compliance, one can argue that in a regime with regular elections, the incumbent government complies with international norms if there is public support for that particular international norm to get re-elected.[18] Hence, the expectation is that the more the public and constituency support for compliance with Turkey's COP-21 commitments, the higher the compliance of the government to be re-elected. In what follows we assess Turkey's case in this light and argue that public opinion does not lead to compliance as evidenced by Turkey's energy policy strategy and practices.

In this context, it can be argued that if the public views climate change as a security threat it may enable the issue to gain political salience, or in some cases allow the government to take military or non-military measures against climate change.[19] Notwithstanding emerging international academic literature on assessing the social impacts of energy policies,[20] there are few academic studies on Turkish public attitudes towards climate change and their implications for Turkey's energy policies.[21] In this regard, this paper aims to contribute to the scant literature by examining the credibility of Turkey's climate change commitments with reference to its energy policy. The paper hinges on the expectation that public acceptance of climate change as a security threat would lead to a higher potential of compliance with the COP 21 commitments by Turkey.

Sustainable energy related debates and policies at the domestic level have increasingly been embedded within the international energy agenda.

On the other hand, in order to come up with coherent domestic sustainable

energy policies to address serious risks not only for current but also future generations, it is obligatory to consult all domestic stakeholders, thereby, reach a consensus on energy politics. Otherwise, it will not only create "legitimacy deficit",[22] but also, problems associated with implementation as revealed in the context of China's "authoritarian environmentalism".[23] Indeed, environmental sustainability and gaining public consent have become criteria for successful energy policies. Hence, as the focal actor in energy policies, public opinion and preferences, just like the sectors' other players, have gained prominence in the decision-making process.[24]

To this end, the paper first briefly overviews Turkey's energy policy. Secondly, it gives an account of how the emerging international norm of climate action is putting pressure on countries all around the world, Turkey is not an exception, while formulating their energy policies. Then we survey public opinion on climate security in Turkey, followed by an analysis of the energy strategy papers as well as Turkey's energy policy practices to understand whether they comply with climate norms. It concludes that regardless of the Turkish public's preference for environmental stewardship on climate change and Turkish policy-makers' COP 21 commitments, those have not been transformed into credible energy policy outputs by Turkey, which continues to prioritize energy availability in order to foster the country's high carbon-intensive growth.

Turkey's Energy Policy at a Crossroads

In terms of primary energy, Turkey heavily relies on hydrocarbons (about 70-75%) to meet the country's increasing energy needs. As of September 2016, in the electricity sector, Turkey's generation mix is as follows: 32,44% coal (lignite and hard coal), 32,40 % natural gas and liquefied natural gas (LNG), 26,20% hydro, and 8,96 % renewables (primarily wind 5,56%).[25] Together with its pipeline politics,[26] Turkey has prioritized the exploitation of all types of energy resources (nuclear,[27] coal,[28] and hydro[29]).

Energy policies in Turkey have been largely shaped by concerns related to supply component of energy security, mainly due to paramount importance attributed to economic growth.[30] Despite the fact that Turkey has set an energy efficiency target of 20% energy intensity reduction in electricity

generation by 2023,[31] compared to the attention paid to energy supply policies, energy efficiency for sustainable growth has received relatively less attention.[32] Based on the report prepared by the Energy Charter Secretariat, Turkey's energy intensity is higher than the OECD and the EU average implying that Turkey is not doing well with regard to efficient use of energy resources.[33] Concretely, the same report, using World Bank 2013 statistics, illustrates that whereas Turkey's energy intensity is 0.18 koe (kg of oil equivalent) per unit of GDP, the EU and OECD have 0.11 and 0.14 respectively. Such energy intensity based on hydrocarbons is challenged by the emerging climate change regime, which is briefly explained next.

Climate Change as a Security Threat

Since the industrial revolution, global fossil fuel related carbon dioxide emissions (CO_2)- the largest of anthropogenic (human-made) greenhouse gas (GHG) emissions- have been incrementally increasing in the atmosphere.[34] Among those fossil fuels, meeting 29% of the world's primary energy needs, coal is responsible for 46% of CO_2 emissions in 2013. According to the International Energy Agency (IEA), coal combustion is responsible for the 70% of CO_2 emission increase in the period of 2012-2013.[35] A strong scientific consensus has been reached that unless humanity can restrict warming of the climate system to 2 degrees Celsius above pre-industrial levels, this will have detrimental implications for our environment and humanity.[36]

Guided by this authoritative evidence, there has been a burgeoning literature exploring climate change as a new security threat, namely "human security," defined by Ogata and Sen as the protection of "the vital core of all human lives in ways that enhance human freedoms and fulfilment."[37] Meanwhile, an international norm concerning climate change has emerged and become consolidated as the norm building process occurred, due to three elements: the 1992 United Nations Framework Convention on Climate Change (UNFCCC); its 1997 Kyoto Protocol and its ratification by most states; and the 2009 Copenhagen Accord setting out a political framework.[38]

On the other hand, there is a correlation between energy availability and economic growth. This is particularly important for 1.2 billion people - 17% of the global population

–without access to electricity today.[39] Acknowledging those two issues, the United Nations (UN) declared 2012 as the year of "Sustainable Energy for All" (SE4ALL).[40] In this parallel, the UN has more recently declared climate action- along with the one pertaining affordable and clean energy- as one of the Sustainable Development Goals (SDGs) in 2015.[41] On December 12, 2015, in the same vein, 195 nations' representatives reached a landmark accord at the UN Convention on Climate Change Conference (COP 21) in Paris. Some pundits even presented the COP21 as "the world's greatest diplomatic success".[42] Indeed, for the first time, nearly every country affirmed to decrease planet-warming GHG emissions to make their contributions to combat climate change. In this light, those countries pledged to limit global temperature increase to below 2 degrees Celsius, while taking steps to limit the increase to 1.5 degrees. Moreover, both developed and developing countries committed to making "intended nationally determined contributions" (INDCs) and to pursue domestic measures aimed at achieving them.[43] Despite initial euphoria on the COP21's success, many countries' INDCs were prepared in a hurry for Paris, with limited public consultation, weakly integrated with the rest of the economy, business, politics and other sectors. Differently put, now the challenge is to integrate climate change into national priorities of economic growth, employment and poverty reduction.[44]

Public Opinion on Climate Change in the World and in Turkey

While parliaments offer formal support, public opinion gives moral support to climate security policies.[45] Therefore, public opinion on climate security is an important but understudied aspect of the emerging climate change regime. This paper primarily utilizes data from the PEW Research Center Global Attitudes Survey (2015) exploring global public opinion towards climate change, which was based on 45,435 face-to face and telephone interviews in 40 countries- including Turkey- with adults 18 and older, conducted from March 25 to May 27, 2015.[46] The survey includes questions that deal with various aspects of climate change as a source of (human) security. For our purposes, we will place our focus on 1) the level of concern, and 2) responsibility of respective states. In order to operationalize it, we rely on the following Pew survey questions:

"The level of concern about different international issues" (Table 1), "Which one of these climate change effects concern you most?" (Table 2), and "Do you support or oppose (survey country) limiting its greenhouse gas emissions as part of such an agreement [in Paris]?" (Table 3).

Pertaining to our first inquiry, "the level of concern about different international issues", publics in 19 of 40 countries considered climate change as the top threat, among widespread global concerns (i.e. global economic instability, ISIS, Iran's nuclear program, cyber-attacks, tensions with Russia, territorial disputes with China) prior to the COP21. This is particularly the case for societies in Latin America and Africa, where majorities declare that they are very concerned about this issue. At a time of heightened concern on the so called Islamic militant group ISIS in Iraq and Syria, most frequently Europeans and Middle East cite ISIS as their main concern among international issues. As the question places climate change within the same framework as traditional and emerging security issues such as terrorism, the nuclear programme, and territorial and military tensions, we can argue that an affirmative response to this question indicates the level of agreement that climate change is a threat to security. As the second biggest concern in around half of the countries, global economic instability was among the top concerns in a number of countries.

Among those global concerns, despite Turkish mass media's indifference to environmental concerns in their coverage,[47] the top concerns for the Turkish public was climate change (35%), yet this percentage was lower than most of the countries studied as part of the survey (Table 1). Due to Turkey's economic vulnerability to external shocks with significant negative implications for its working class[48] and immediate proximity to Middle Eastern turmoil, it is understandable for the Turkish public to be concerned about global economic instability (33%) and ISIS (33%) as well.

When it comes to perceived consequences of climate change, the possibility and/or existence of drought/water shortages, followed by severe weather conditions (storms/floods), is the most worrisome (Table 2). In this parallel, Turkish public is concerned most about those two effects with a rate of 70% in total. Indeed, TEMA's (The Turkish Foundation for Combating Soil Erosion for Reforestation and the Protection of Natural Habitats) report

on Local Implications of Climate Change (2015) verifies these findings that the Turkish public perceives more frequent droughts and floods along with desertification as negative effects of climate change.[49]

Pertaining to climate change action, even when in doubt, publics in general embrace the precautionary principle and act out of prudence. In 37 of 40 countries surveyed, participants expressed willingness for their country to limit its GHG- exceeding their rate of their climate change as a very serious concern - as a part of an international agreement such as the COP21 in Paris. With a support rate of 56%, the Turkish public declared their wish for Turkey to curb the country's carbon emission levels (Table 3).[50] The PEW findings have been verified by EDAM's 2015 survey, with a sample size of 1508, which reveal that most of the Turkish public respondents give conditional support for Turkey to take on responsibility in the struggle against climate change.[51] According to the EDAM survey, 47,5% of the supporters of the incumbent governing political party give conditional support to the government to take action to fight climate change, while 32,1% of the remaining declare they do not have an opinion and 20,4% supported the government not to take any action on climate change. Overall, the surveys show there is broad public support for the government to take climate action. Next, we discuss if Turkey is taking such action to fight climate change in its energy policy with reference to energy strategy papers and energy policy practices.

The Mismatch between Turkey's Energy Policy and Climate Action Commitment

Turkish policy makers have historically opted for energy policies to bolster industrial and economic growth at the expense of environmental degradation. With its fossil fuel based energy profile, above global average energy intensity,[52] and incrementally increasing carbon emissions, Turkey has continued its unsustainable energy trajectory and refrained from binding emission mitigation targets.[53] In this light, it is not a surprise to note that Turkey's GHG increased 133,4% in the period between 1990-2012. Turkey is among the first 20 countries in the world in this respect (Table 4-5).

Indeed, Turkey's gloomy energy efficiency and/or intensity figures have been addressed in the last two

strategic documents of the Ministry of Energy and Natural Resources.[54] There are negligible differences between those two reports in terms of their emphasis on energy security and environmental/ecological issues. Acknowledging a slight increase in CO_2 emissions sourced from electricity generation in the period of 2004- 2007, the earlier report aims to minimize environmental degradation caused by energy generation and targets to reduce the pace of rising GHG emissions in the energy sector by 2014 as we have partially noted in Table 5.[55] By noting that energy intense sectors (i.e. cement and iron-steel) play dominant roles in the Turkish economy, the actual report set the objective of "energy efficient Turkey". In this parallel, it proposed various goals in improving energy conservation, efficiency in lighting, heating, etc.[56] Beyond these, arguably as a positive step in the direction of sustainable energy policies, the latter report has also included a theme titled "good governance and stakeholder interaction" with an emphasis on public participation in every phase of policy making.[57]

However, the details of envisaged stakeholder interaction is not yet clear. For stakeholders meetings to realize their potential to contribute to good governance depends on preventing over-representation of certain actors at the expense of others.[58] If such meetings are organized in a way to ensure that dialogue between policymakers and the broader public takes place, high public support (56%) to curb GHG levels (Table 3) may influence energy policy implementation in Turkey. In this light, looking into Turkey's energy practices since the signing of COP21 serves as a litmus test for assessing the credibility of the commitments made at COP21 as well as the impact (or the lack thereof) of stakeholder meetings on enabling public opinion to influence climate action in energy policy.

Pertaining to climate change action, even when in doubt, publics in general embrace the precautionary principle and act out of prudence.

On 22 April 2016, a glimmer of hope occurred for Turkey's sustainable energy prospects with the Minister of Environment and Urban Ministry Fatma Güldemet Sarı's signing of COP21. In its INDC, Turkey pledged to increase its use of solar, wind and hydro power; to commission the building

of a nuclear power plant; to reduce electricity transmission and distribution losses to 15 percent; to rehabilitate its existing power plants, and to establish micro-generation, co-generation and production on site at electricity production. Notwithstanding the debate surrounding the sustainability and social and environmental costs of hydropower and nuclear power plants,[59] these commitments also fell short of credibility. Only a few days after this signature, Sarı's presence at the opening ceremony in Adana of the country's 8th largest thermal power station became a vivid example of Turkey's contradiction between its energy and climate change policies. On the one hand, Turkey signed an agreement committing to reduce CO_2, on the other hand, it was planning to build around 80 coal-fired thermal power plants.[60]

Actually, those plants have been projected to be built in line with the Electrical Energy Market and Supply Security Strategy Document's (2009) objective to utilize the country's entire local coal resources to generate electricity by 2023.[61] In the background of this objective, there were two reasons: 1) meeting incrementally increasing demand; 2) decreasing dependency on imported natural gas. In this framework, the Turkish Ministry of Energy and Natural Resources (ETKB) declared 2012 as "the coal year".[62] This prompted numerous investment support mechanisms and environmental exemptions for coal mining and coal powered electricity generation projects. Recent amendments in the Electricity Market Law bestowed two privileges to local coal powered electricity generation: purchase guarantee and priority in reaching the national grid.[63] Such emphasis on promoting the use of domestic coal to reduce Turkey's dependency on imported coal is also noted by TEPAV in an analysis.[64]

Considering about 80 new thermal power plants' multiplier effect on emissions, bells are ringing for Turkey's sustainable energy future. If all the planned thermal power plants are completed, among the other countries making new coal investments, Turkey would rise to 4th position, following China, India and Russia. Those forthcoming thermal power plants are estimated to emit equal amounts to the total annual emissions in Turkey.[65] Arguably, those plants will likely have negative implications, on the global level, given that they will be perceived contradictory with Turkey's COP21 pledges at Paris. Overall, one may wonder and ask: "Does coal have any place in Turkey in the post-Paris period?"[66]

Moreover, Turkey pledged to reduce greenhouse gas (GHG) emissions to 4.2% per year by 2030. However, as Kozakoğlu pointed out, this commitment is not based on a realistic calculation of Turkey's actual performance so far.[67] Between 1990-2013, GHG emissions in Turkey grew 3.9% on average per year. But in its INDC, Turkey assumes the expected growth in GHG emissions will be 5.7% per year and commits itself to reducing them to 4.2%, which means significant growth in comparison to a 3.9% increase that took place in the same period.

Conclusions

At a time of "third industrial revolution" based on sustainable energy technologies and emergence of climate change as an international norm, particularly following the UNSDGs and COP21, countries have been faced with the daunting task of de-carbonizing their energy-intensive growth. Assuming that it is high time to discern those COP21 signatories' energy policies, the main contention of this paper has been to discuss the credibility of Turkey's commitment to take climate action through its energy policies. We argued that regardless of its COP21 commitments and high public support for climate action, Turkey has been maintaining carbon-intense energy policies as usual.

As stated in the actual strategic report of the Ministry, energy intense sectors of iron-steel and cement have been playing dominant roles in the Turkish economy. Moreover, there are findings about the existing negative correlation between local coal development and unemployment figures.[68] Nonetheless, increasing the country's fossil fuel supplies through local coal is not the sustainable option for Turkey. Considering Turkey's fossil fuel based energy intense economy, it should be noted that instead of giving priority to fossil fuel supplies, scientific studies have proposed that Turkey could make a policy shift by emphasizing energy efficiency and renewable energy development so that it can reduce fossil fuel demand without disrupting prospects for sustainable development.[69] Hence, the government can accomplish two objectives through one effort to create a properly functioning energy efficiency policy: 1) bolstering prospects for an economic model with less energy use, and 2) promoting sustainable green development, thereby addressing domestic and international climate change concerns. In this parallel, the İstanbul Policy Center 2015 report

titled "Low Carbon Development Pathways and Priorities for Turkey" proposes that a "green growth" approach is both adequate and economically feasible for Turkey.[70] Having watched the Britain-led industrial revolution of the 19th century and the US-led automated assembly line revolution in the 20th century from the sidelines, as Prof. Yeldan puts it, Turkey with its abundant renewable energy potential can become one of the forerunners of "the third industry revolution" of the 21st century.[71]

ANNEXES

Table 1. The level of concern in selected countries about different international issues

IMF Classification	Country	World Bank Income Group	Global climate change	Global economic instability	ISIS	Iran's nuclear program	Cyber - attacks	Tensions with Russia	Territorial disputes with China
Advanced Economies	Australia	High Income	37%	32%	69%	38%	37%	31%	17%
	France	High Income	48%	49%	71%	43%	47%	41%	16%
	Germany	High Income	34%	26%	70%	39%	39%	40%	17%
	U.K.	High Income	38%	32%	66%	41%	34%	41%	16%
	U.S.	High Income	42%	51%	68%	62%	59%	43%	30%
Emerging Economies	Argentina	High Income	57%	49%	34%	31%	28%	22%	18%
	Chile	High Income	62%	39%	31%	31%	22%	15%	15%
	Russia	High Income	22%	43%	18%	15%	14%	*	8%
	Brazil	Upper Middle	75%	60%	46%	49%	47%	33%	28%
	China	Upper middle	19%	16%	9%	8%	12%	9%	*
	Malaysia	Upper Middle	37%	37%	21%	11%	20%	9%	12%
	Mexico	Upper Middle	54%	46%	23%	28%	30%	16%	14%
	Turkey	Upper Middle	35%	33%	33%	22%	22%	19%	14%
	Peru	Upper Middle	75%	58%	35%	42%	35%	26%	27%
	South Africa	Upper Middle	47%	33%	26%	25%	28%	18%	22%
	India	Lower Middle	73%	49%	41%	28%	45%	30%	38%

Directly adopted from Pew Research Spring 2015 Global Attitudes survey Q13.

Table 2: Which one of these climate change effects concerns you most?

IMF Classification	Country	World Bank Income Group	Droughts or water shortages	Severe weather, like floods or intense storms	Long periods of unusually hot weather	Rising sea levels	Climate change does not exist	Refused	Total
Advanced Economies	Australia	High Income	45%	18%	10%	19%	4%	3%	100%
	France	High Income	37%	24%	7%	31%	0%	0%	100%
	Germany	High Income	42%	30%	9%	14%	1%	3%	100%
	U.K.	High Income	33%	24%	6%	30%	1%	6%	100%
	U.S.	High Income	50%	16%	11%	17%	3%	4%	100%
Emerging Economies	Argentina	High Income	44%	37%	10%	8%	0%	1%	100%
	Chile	High Income	55%	27%	11%	6%	0%	0%	100%
	Russia	High Income	29%	38%	14%	7%	6%	6%	100%
	Brazil	Upper Middle	78%	8%	8%	5%	0%	0%	100%
	China	Upper middle	38%	34%	18%	4%	4%	3%	100%
	Malaysia	Upper Middle	23%	36%	36%	3%	0%	0%	100%
	Mexico	Upper Middle	63%	17%	14%	5%	0%	1%	100%
	Turkey	Upper Middle	35%	35%	16%	5%	2%	8%	100%
	Peru	Upper Middle	55%	25%	14%	4%	0%	1%	100%
	South Africa	Upper Middle	26%	31%	21%	8%	4%	11%	100%
	India	Lower Middle	53%	30%	11%	2%	0%	3%	100%

Directly adopted from Pew Research Spring 2015 Global Attitudes survey Q43.

Table 3: Do you support or oppose (survey country) limiting its greenhouse gas emissions as part of such an agreement [in Paris]?

IMF Classification	World Bank Income Group	Country	Support	Oppose	Climate change does not exit	Refused	Total
Advanced Economies	High Income	Australia	80%	15%	0%	6%	100%
	High Income	France	86%	14%	0%	0%	100%
	High Income	Germany	87%	12%	0%	1%	100%
	High Income	U.K.	78%	15%	0%	7%	100%
	High Income	U.S.	69%	24%	1%	6%	100%
Advanced Economies	High Income	Argentina	80%	11%	1%	8%	100%
	High Income	Chile	88%	8%	0%	4%	100%
	High Income	Russia	65%	17%	5%	13%	100%
	Upper Middle	Brazil	88%	9%	1%	3%	47%
	Upper Middle	China	71%	16%	4%	9%	100%
	Upper middle	Malaysia	70%	12%	2%	16%	20%
	Upper Middle	Mexico	78%	18%	0%	4%	100%
	Upper Middle	Turkey	56%	26%	2%	16%	100%
	Upper Middle	Peru	77%	14%	0%	9%	100%
	Upper Middle	South Africa	56%	18%	6%	20%	28%
	Lower Middle	India	70%	13%	1%	17%	100%

Directly adopted from Pew Research Spring 2015 Global Attitudes survey Q40.

Table 4: Selected GHG Emitters in Gg CO2 eq.

	1990 (Base Year)	2000	2012	Change from base year to latest reported year (%)
United States	6219,5	7075,6	6487,8	4,3
European Union (28)	5626,2	5121,6	4544,2	-19,2
European Union (15)	4266,8	4167,2	3622,922	-15,1
Russia	3367,7	2055,5	2297,1	-31,7
Germany	1248,0	1040,3	939,0	-24,8
United Kingdom	783,4	704,4	586,3	-25,2
Canada	590,9	721,3	698,6	18,2
Australia	414,9	489,8	543,6	31,0
Turkey	188,4	298,0	439,8	133,4

Adopted by the authors relying on the available data from UNFCC website

Table 5: Selected GHG Emitters from Energy, in Gg CO2 eq.

	1990 (Base Year)	2000	2012	Change from base year to latest reported year (%)
United States	5260,0	6107,7	5498,8	4,5
European Union (28)	4324,5	4003,5	3603,7	-16,6
European Union (15)	3281,2	3360,7	2893,3	-11,8
Russia	2725,1	1675,1	1887,2	-30,7
Germany	1019,0	856,4	786,0	-22,9
United Kingdom	611.7	561.9	485,5	-20,6
Canada	469,1	590.7	565,7	20,6
Australia	286,7	357,8	413,3	44,1
Turkey	132.8	213,2	308,6	132,2

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Energy and Power Politics in the Cases of Azerbaijan and Turkmenistan

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Abstract

Azerbaijan and Turkmenistan can be defined as Small Powers because their actions in the international arena are relatively limited. At the same time, these two countries have significant reserves of oil and natural gas that allow them to maximize opportunities and use their potential for achieving national interests. The availability of energy is an important driver that affects the formation of their foreign policies. Azerbaijan and Turkmenistan are geographically located on opposite sides of the Caspian Sea. This geographic feature affects their energy strategy and foreign policy. Although energy field exploitation and the formation of export routes appear as a common strategy; there emerge differences in terms of timing and partnership development and level of success in implementation. This article is a comparative study on the cases of Azerbaijan and Turkmenistan, in which it elaborates on how common and different conditions of the energy factor can affect the capacity of these two Small Powers.

Key Words

Azerbaijan, Turkmenistan, small power, foreign policy, energy policy, pipelines.

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Introduction

The Foreign Policy of Small Powers

The current international system constitutes the order of more than 190 states, which differ in size, population, opportunities and potential. Historically, the nature of the international order is determined by the Great Powers, which shape the system according to their expectations and perceptions. However, along with the Great Powers, there are countries, known as Small Powers with limited or almost no influence. In this international system of nation-states, formed in conditions of anarchy, the realist school considers the concept of power to be of utmost significance. The main components of state power are represented as the country's geographical location, availability of natural resources, a strong economy, large population and, of course, armed forces. Thus does one of the key paradigms of international relations, classical realism, form the concept for

understanding the actions of the main international actors- national states- on the international arena. This paradigm considers the actions of national states from the position of power and explains that their main goal is to constantly increase their own capacity. However, not every state has the opportunity to achieve this task. For example, Small Powers, which, due to their lack of capacity and resources, are often unable to ensure their security, and therefore are unable fully or partially to realize their own interests, in accordance with their wishes and expectations. Since the formation of the Westphalian system in 1648 until the mid-20th century, the central task of any Small Power was therefore just to survive and protect its own existence. However, with the evolution of the international system, the formation of a new legal system and new reality, made this goal unnecessary. The new world order formed after the Second World War on the basis of collective security, meant that for the first time in world history, Small Powers were guaranteed their existence and prevented from possible absorption by the Great Powers. Thus, the primary task of Small Powers has changed, and now these countries are trying to form their foreign policies according to their expectations and national interests.

The success of such policies depends on the availability of resources and capacity, as well as the ability to use them. However, not all desires and expectations of Small Powers can be achieved. They are, somehow, dependent on the expectations and wishes of the Great Powers, especially on those that are geographically close to the Small Powers. In this case, the Small Powers will seek the protection of the Great Powers, involving them in coalitions and alliances. If the interests of the Small Powers and Great Powers are not the same, Small Powers will seek to remain neutral or to look for opportunities to balance against undesired effects from the actions of Great Powers. It is assumed, in this article, that this conceptual analysis represents the case of Azerbaijan and Turkmenistan as Small Powers in their distinct types of interactions with the Great Powers. It is however necessary to elaborate on the theoretical aspect of these concepts in order to locate similarities and dissimilarities in the cases of Azerbaijan and Turkmenistan.

If we consider the various Small Powers designation, one of them is given by David Vital. Vital noted that Small Powers compared to Great Powers are more vulnerable to possible pressure on them in the international arena, thus more often act in a tense atmosphere and have fewer opportunities to resolve such kinds of problems.[1]

Another definition for Small Powers, based on their capacities and capabilities, is offered by Dutch researcher Jaquet. According to Jaquet: "a Small Power is a state which independently is unable to realize or to protect its own national interests, through power politics."[2]

The new world order formed after the Second World War on the basis of collective security, meant that for the first time in world history, Small Powers were guaranteed their existence and prevented from possible absorption by the Great Powers.

Another researcher, Maurice A. East, defines Small Powers based on four assumptions: that a Small Power is any state that has a small territory, a small total population, small GDP, and low military potential.[3]

It is worth noting that for Small Powers, any mistake in strategic planning of medium and long-term foreign policy goals can cost a great price. In this case, Small Powers' foreign policies should be most accurately determined in accordance with the possibilities of that country. In addition to the correct calculation of their own capabilities, Small Powers have to calculate the possible actions of the Great Powers.

Taking into account these aspects, Small Powers foreign policy constitutes the focus of this article based on case studies of two countries of the former Soviet Union: Azerbaijan and Turkmenistan. It should be noted that Azerbaijan and Turkmenistan have many common features that fit the above mentioned conceptual discussion of state power from the realist perspective. Azerbaijan and Turkmenistan also have their own unique characteristics, most of which stem from the status of oil and gas trade. In particular, both Azerbaijan and Turkmenistan are land-locked states. Thus, the formation of their trade relations with third countries in the global market is highly related to their geographical neighbors.

This geographic feature is very important since both countries are exporters of energy resources, the revenues of which constitute the majority of the state budgets. Turkmenistan is a major exporter of natural gas, while Azerbaijan exports both gas and oil. As these countries do not have access to the open seas, the export of energy resources to the world markets is mainly possible via pipelines. These pipelines cross the territory of neighboring countries, which form the political and economic dependence on

external oil and gas producers from these and other countries. Export pipelines which do not directly reach open seas make the dependence even more complicated. It is not however possible to talk about a liberal perspective that fosters regional and international energy trade leading to a web of interactions. The basic premises of realism pertain their validity in this case.

The complexity of the case of Azerbaijan and Turkmenistan emerges as a realist fact because most of their neighbors are also producers of oil and gas and therefore they are not in need of energy resources from these two countries. Azerbaijan is a neighbor to Russia and Iran, while Turkmenistan neighbors Kazakhstan, Iran and Uzbekistan. A relation between Azerbaijan and Georgia is an exception of this categorization. Georgia is Azerbaijan's territorial neighbor, and has no adequate energy resources, and therefore is totally dependent on their imports. Georgia's need for Azerbaijan's resources is an important factor that sustains mutual relations. However, the Georgian market is small, and the production of oil and gas in Azerbaijan is much higher than this country's needs. Therefore, the two former Soviet republics are forced to seek access to markets that are not directly their geographical neighbors. This makes Azerbaijan become interested in Western markets via Georgia, while Turkmenistan seeks for additional gas sales to China via its neighbors.

Georgia's need for Azerbaijan's resources is an important factor that sustains mutual relations.

Azerbaijan and Turkmenistan are in need of sustaining good relations with Great Powers, cooperating with neighbors and reaching markets in an environment characterized by realist premises. An important component in the formation of an external energy policy of these Small Powers is to reduce possible political and economic dependence on the transit countries.

In this case, there are two effective models for the formation of external energy relations: the creation of alternative export transport routes and the strengthening of political and economic interdependence with the neighboring transit countries. This results in the necessity of building international trade (that channels governments and firms) and constructing pipelines (mainly concerns governments and firms with a certain degree of involvement from non-governmental organizations) while

securing the energy flow. Having built the infrastructure, the main task for Azerbaijan and Turkmenistan becomes to reduce the possible geopolitical and geo-economic risks stemming from their geographical location.

Small Power Azerbaijan and Its Foreign Energy Policy

Azerbaijan is of one the oldest centers of oil production in the world. Production by industrial methods started in the time when Azerbaijan was part of the Russian Empire. Then Baku was the center of oil production of not only Russia but the whole world. Azerbaijan continued to remain a key energy producer also during the period of the Soviet Union, concentrating production offshore. Azerbaijan's energy potential gained new meaning after the collapse of the Soviet Union. The presence of rich deposits of oil and natural gas would allow for resolving geopolitical and geo-economic problems that faced Azerbaijan after gaining its independence. Azerbaijan confronted serious economic and political problems, which was the cause of instability at the time, right after the disintegration process. Politically, one of the main challenges to security and stability in the country has been the Armenian-Azerbaijani conflict inherited from the Soviet times. All of these problems required immediate solutions based on political will and economic capability; Azerbaijan tried to use its energy resources, and became engaged in the search for international energy trade.

Azerbaijan had already begun negotiations with a number of Western companies in the early 1990s. Negotiations, since then, have revolved around the development of the Azeri-Chirag-Guneshli offshore oil fields with 1 trillion tons of oil reserve. The main Great Power, Russia in this case, was against this new track, and adopted a realist geopolitical perspective to sustain its strong position. In 1993, Russia declared the post-Soviet region as its sphere of interest, within the framework of the "near abroad" doctrine. Therefore, the presence and participation of the West was not desirable in any capacity. Russia began to carry out a policy of pressure on Azerbaijan, stating that Azerbaijan had no right to start the development of offshore fields so far as the Caspian's legal status was not resolved. Russia also supported Armenia in the Nagorno-Karabakh conflict so as to create another barrier to limit the capacity of the Small Power. The political and economic pressures imposed upon Azerbaijan, the Small Power, by Russia, the Great Power, resulted in domestic political turmoil in Azerbaijan. The first

Azerbaijan President Ayaz Mutalibov had to resign because of the Khojaly Massacre, carried out by Armenian forces and supported by the Russian 366th Motor Rifle Brigade. A year later, a coup attempt was carried out against the second president, Abulfaz Elchibey, on the eve of the signing of the agreements with the energy companies. This track started to change in favor of the Small Power after political stability in Azerbaijan was consolidated by Heydar Aliyev, who accelerated international energy trade relations with new partners. Azerbaijan succeeded to sign with Western energy companies "the Contract of the Century" for the operation of the Azeri, Chirag, Guneshli oil fields, on 20 September 1994, despite many attempts to overthrow Heydar Aliyev.

Currently, the consortium includes the following companies with the relevant shares: SOCAR - 11,6461%, BP - 35,7828%, Statoil - 8,5633%, INPEX -10,9644%, TPAO -6,75%, Exxon Mobil - 8,0006%, ITOCU- 4,2986%, Chevron Texaco - 11,2729%, and Amerada Hess - 2,7213%.[4]

After the successful signing of the Contract of the Century, Azerbaijan soon signed another contract on the promising offshore Shah Deniz gas field. It should be noted that the total reserves of Shah Deniz are estimated at 1,1 trillion m^3 of natural gas and 240 million tons of gas condensate. The agreement on the Shah Deniz field was signed on June 4, 1996. At the moment, the members of the consortium on Shah Deniz are the following companies: SOCAR (16,7%), BP (28,8%), Petronas (15,5%), Iranian NIOC (10%), Russian / Italian joint company LukAgip (10%) and TPAO (19%).[5]

Azerbaijan's additional discovery of natural gas reserves brought out the possibility of further energy trade relations with a myriad of regional and global actors within this framework.

In the first stage, Azerbaijan began to supply gas to Georgia and Turkey. Georgia had the opportunity to acquire cost advantage with reference to Russian gas that had already become unaffordable after the velvet revolution of 2003. Conceptually speaking, Azerbaijan and Georgia found the opportunity to cooperate as Small Powers and engage in an international pipeline system that helped them be partners of a relation that included more than one Great Power.

Azerbaijan's additional discovery of natural gas reserves brought out the

possibility of further energy trade relations with a myriad of regional and global actors within this framework. After the implementation of Shah Deniz Stage-2, gas production will increase up to 16 billion cubic meters and Azerbaijan will be able to supply an additional 6 billion cubic meters of gas to Turkey and 10 billion cubic meters - to Eastern Europe.[6] This will allow Azerbaijan to enter new markets, and expand the geographic area in favor of national interests. In addition to the Contract of the Century and the agreement on Shah Deniz, Azerbaijan has signed more than 30 agreements with foreign energy companies.[7]

Transport Routes for Oil and Gas Transportation Initiated by Azerbaijan

The characteristics of transit pipelines are extremely influential in the cases of states which have no access to the open seas, since unfavorable regional developments can result in drastic changes and losses. In addition, if the exporting country and the country of transit are in a conflict situation, no matter the level of the existing differences, the transit country is able to damage the exporter including by the suspension of the transportation of oil and gas.[8]

Azerbaijan therefore needed to form a strategy for the routes to export its oil and gas. This was also subject to technical issues. For instance Azerbaijan needed to create a transport route with the purpose of exporting "early oil" from the Chirag field. It was necessary to build a pipeline to pump 5 million tons of oil per year. At that time, two proposals were presented. The first was the oil pipeline Baku-Novorossiysk, or the Northern Route, to a Russian port on the Black Sea, with the transport capacity of up to 6 million tons of oil per year. The second was the pipeline from Baku to Supsa, or the Western Route, through Georgia to its port on the Black Sea, the total length of which is 830 km and with a capacity of 5,5-6 million tons per year.[9]

The choice of route was not an easy decision for Azerbaijan. Russia supported the Northern Route, also hoping that in the future the main oil from Azeri, Chirag, Guneshli would also be channeled in this direction. This would allow Russia, as the Great Power, to control the flow of oil from Azerbaijan, and sustain influence over the country. The Western Route was sponsored by another Great Power, the US, which wanted to support US energy companies which participated in energy projects in Azerbaijan.

After much deliberation and negotiations, Azerbaijan and the consortium agreed to build pipelines simultaneously in both directions. To this end, construction of the Baku-Supsa oil pipeline allowed the country to implement the diversification of transport routes and decreased possible dependency on one Great Power, Russia in this case. Diversification of transport routes would enable Azerbaijan to conduct more independent foreign and energy policies.

This approach would be key in determining the main transport route: the Baku-Tbilisi-Ceyhan oil pipeline. It was expected that production from the Azeri-Chirag-Guneshli field would reach more than 50 million tons per year. Construction of this pipeline, stretching more than 1,730 km, was launched in 2002 and completed in 2005.

Diversification of transport routes would enable Azerbaijan to conduct more independent foreign and energy policies.

The Baku-Tbilisi-Ceyhan oil pipeline passes through the territories of Georgia and Turkey, both of which had proven reliability in relations with the US and Azerbaijan, and reaches the Turkish port of Ceyhan by the Mediterranean Sea.

Natural gas projects supported this track. In principle, the Baku-Tbilisi-Erzurum gas pipeline route overlapped with the Baku-Tbilisi-Ceyhan oil pipeline route. Construction of the Baku-Tbilisi-Erzurum gas pipeline or South Caucasus gas pipeline, was started on 27 February 2003 and ended in 2007. On 13 December 2007, the first gas from the Shah Deniz field would be exported to the Georgian and Turkish markets.[10]

Successful implementation of oil and gas export routes allowed Azerbaijan to boost state revenues, consolidate national interests, and achieve essential foreign policy goals. Azerbaijan has been in search of developing gas projects and diversifying markets to sustain this original Small Power status. Development of Shah Deniz Stage-2 is a good example, since Azerbaijan plans to export natural gas to Eastern European states. Initially, Shah Deniz 2 gas is likely to be supplied to Bulgaria, Greece, and Italy, and to reach the Western Balkans in the medium term. In this regard, Azerbaijan, in 2011, proposed the construction of the Trans-Anatolian gas pipeline (TANAP) through Turkish territory. Turkey and

Azerbaijan signed a Memorandum of Understanding to establish a consortium for the construction of TANAP on 26 December 2011.[11]

According to the agreement, the TANAP pipeline would reach 1841 kms, from the Turkish border with Georgia in the east to the border with Greece in the west. The construction of the pipeline, which was started in April 2015, is planned to be completed in late 2018. The construction consortium, includes SOCAR (58%), Turkish - BOTAŞ (30%) and British BP (12%). The initial volume of the supplied gas will be 16 billion cubic meters. The pipeline capacity will be increased up to 23 billion cubic meters by 2013, and 31 billion cubic meters by 2026.[12]

Azerbaijan's plan to extend gas exports to Eastern Europe would necessitate construction of a gas pipeline originating at the Turkish-Greek border. The Trans Adriatic Pipeline (TAP) would be considered the most feasible project among proposed alternatives. Accordingly, TAP will be connected to TANAP, and then pass through the territories of Greece, Albania, on the bottom of the Adriatic Sea, and reach southern Italy as the final destination.[13] SOCAR is involved in implementation of this project with a share of 20%.

Croatia, Montenegro, Albania and Bosnia and Herzegovina have signed a memorandum on cooperation in the construction of a new Ionian-Adriatic gas pipeline, which is planned to connect to the TAP. This will enable these countries to increase their gas supply and diversify suppliers alongside Russia.[14] Romania, Hungary and Austria appear as further markets of this route, subject to availability of gas, infrastructure and agreements.

Azerbaijan's current energy strategy is aware of the opportunities arising from the energy sector, which simultaneously affect policy outcomes with geographic conditions on the one hand, and the disadvantages of Small Powers in terms of domestic and foreign policy building, on the other. Energy trade is considered to be a tool to minimize the risks of being a Small Power. This approach does not only concern Azerbaijan, but also Georgia.

Georgia, like Azerbaijan, is also a Small Power with similar concerns. However it differs from Azerbaijan since the country does not have sufficient domestic energy resources, and is totally dependent on external supplies. This turned out to be a sort of interdependence based on a mutually beneficial relationship following the foundation of the SOCAR Energy Georgia Company in 2006. Activity of

the company in Georgia includes retail and bulk selling of fuel, importing of petroleum and liquid gas, and construction of oil terminals and warehouses. Today SOCAR is the main supplier of energy in Georgia, with 72% of share in the oil market and 61% in the diesel market, distributed by its 114 oil and 1 gas station .[15]

In 2007 SOCAR acquired the Georgian Kulevi Terminal, located on the shores of the Black Sea, for storage of oil and oil products with their further loading to vessels and transportation.[16]

SOCAR is also the main distributor of natural gas in Georgia, taking part in the privatization of its gas distribution network. In addition, SOCAR has continued expansion of these networks. Today, SOCAR provides 90% of the gas market in Georgia and, with the exception of Tbilisi, manages the gas system of the country.[17] The Azerbaijani energy company became the largest taxpayer in Georgia. Today, both countries are strategic partners in many areas and the relationship between these two countries is at its highest level.

In addition to Georgia, SOCAR has also been very active in Turkey, whose support was considered to be very important for Azerbaijan's oil and gas transit projects. In 2007, SOCAR established an alliance with a Turkish company, Turcas, and on 30 May 2008 acquired 51% of Turkey's largest petrochemicals company, Petkim. SOCAR also consolidates the activities of the petrochemical industry in Azerbaijan, which is fully concentrated in the Azerikimya Production Union. This company includes enterprises that produce different petrochemical products. SOCAR hopes to establish a common production chain between Azerikimya and Petkim. In addition, given that Turkey has access to the open seas, it will allow Azerbaijani petrochemical products to be sold not only in Turkey but also on world markets. Right after acquisition, Petkim's production was covering about 25% of the market in Turkey.[18] With support from counterparts in Azerbaijan and Turkey, SOCAR's share in Turkey`s chemical industry would increase from 25% to 40% in 2018.[19] Other SOCAR investments included the construction of the largest container port in Turkey, Petlim in Aliaga, (where Petkim is also located) and the new Star oil refinery, again in Aliaga, with a projected capacity of production up to 10 million tons of oil per year. The total cost of this refinery will be more than five billion dollars. This refinery, to be completed in 2018,

will supply both the needs of Petkim and the Turkish domestic market. It is worth noting that this will be the first refinery built in Turkey since 1975.[20]

SOCAR has been interested in further investmenğs, such as the case of acquiring the gas station network of the Austrian oil group OMV.[21] Despite the fact that this transaction failed, OMV agreed to sell to SOCAR its Aliağa Oil Terminal, with a capacity of 200,000 cbm of fuel storage and 45,000 cbm of LPG storage.[22]

SOCAR's investments in Turkey exceed 18 billion dollars, thus this company became the largest investor in the country.[23] Thus, it is possible to conclude that Azerbaijan has managed to establish an inter-dependent energy trade relationship with Georgia and Turkey, which has enabled the country to secure oil and gas exports and to overcome the difficulties of being a Small Power without access to the open seas.

The Development of the Energy Sector in Turkmenistan

Turkmenistan, another Small Power with similarities to Azerbaijan, differs from the latter because of its being a Central Asian country. Turkmenistan's being a post-Soviet country without access to the open seas and with rich energy resources constitute the most important similarities with Azerbaijan. The country inherited from the Soviet time GDP contraction, hyperinflation, and mass unemployment. It was also necessary to adopt new forms of governance, to start the construction of a market economy, and to create trade relations with neighboring countries.

Like Azerbaijan, Turkmenistan realized that to solve all the problems the main trump card was the availability of energy resources. The oil and gas industry in Turkmenistan began to develop during the period of its presence in the Russian Empire. At the end of the 19th century, the company of well-known oilman Nobel, whose activities were mainly focused in Baku, drilled the first wells in the Cheleken, thus proving the presence of oil on the eastern shore of the Caspian Sea. By the beginning of the 20th century there were extracting small amounts of oil.

The discovery of the Nebit Dag oil field in 1933 led to a peak of activity, with its historical maximum of 15.5 million tons in 1975.[24]

Gradual oil production decline made Turkmenistan increase gas production starting in the 1960s. In 1966, a major

"Odzhakskoe" field was discovered. In 1989, it produced 85.5 billion cubic meters of natural gas.[25] However, along with the general economic crisis in the USSR, the partial loss of traditional partners of the former Soviet Union, and the depletion of deposits, natural gas production in Turkmenistan decreased.

The geographic spread of oil and gas reserves affected the way Turkmenistan engaged in energy trade with other countries. There are two oil and gas provinces in Turkmenistan. The first province, Turan, is located within the territory of three Central Asian countries: Kazakhstan, Uzbekistan and Turkmenistan. Turan province accounts for the vast territory in the eastern and central parts of Turkmenistan.

The geographic spread of oil and gas reserves affected the way Turkmenistan engaged in energy trade with other countries.

The second oil and gas province, the South Caspian, covers the western part of Turkmenistan, including the Caspian Sea. In total, Turkmenistan has 162 oil and gas fields. There are also more than 1,000 areas promising for oil and natural gas.

With support from the national company Turkmenoil, Turkmenistan began increasing exploration activities. In 2002, the Magtymguly field, a promising reservoir with vast potential, was discovered in the Caspian Sea, and in 2006, the country opened another, relatively larger oil field, Diyarbekir. At the moment, oil is extracted from these fields by the Malaysian oil company Petronas. It is noteworthy that Petronas has become the second foreign company to extract oil in the Caspian sector of Turkmenistan. Previously, the only marine oil producer was the Anglo-Arabian Company Dragon Oil.[26] Since 1999, this company, in the framework of the PSA, has developed the offshore block Cheleken, with proven reserves of 147 mln barrels of oil and 90 billion cubic meters of gas.[27]

According to the "Programme for the development of the oil and gas industry of Turkmenistan until 2030", Turkmenistan plans to increase oil production to 110 mln tons per year.

Gas Sector Development in Turkmenistan

As regards to natural gas reserves, Turkmenistan ranks fourth in the world after Russia, Iran and Qatar. The largest field is concentrated in the Mary region, in eastern Turkmenistan.

Many gas fields were discovered after independence. Among them, Bagtyyarlyk deserves a closer look. On 17 July 2017, a PSA was signed between Turkmenistan and China National Petroleum Corporation (CNPC) for a period of 30 years.

The project includes important fields such as Samandepe, which consists of 100 billion cubic meters of gas and 5 million tons of gas condensate. Chinese companies have been put into operation at "Samandepe", with dozens of old wells and drilling of new production wells, with a good flow rate of natural gas. In 2010, the Agayry gas field was discovered with estimated reserves at 73 billion cubic meters. In addition, gas fields are being explored in other areas.[28] To this day, the CNPC Corporation has invested about US$ 4 billion in the project.

One of the largest gas fields in Turkmenistan, Dowletabat, was opened in 1982 and is located in the Mary area. This field is located near the border with Iran, and its continuation is one of the largest gas fields of Iran-Khangiran. Proposed reserves are about 1.3 trillion cubic meters. It is worth noting that in the first years after independence, Dowletabat became the main source of natural gas production in the country, and accounted for 80% of total production.

The most important supergiant field, considered as the jewel of the Turkmenistan gas sector, is Galkynysh, which was discovered in 2006. It contains the second largest reserve in the world, with 21.2 trillion cubic meters of gas. The discovery of gas in the Yashlar field in 2008 increased this amount up to 26.2 trillion cubic meters of gas and 300 million tons of oil. In December 2009 the Turkmen government signed an agreement with China's CNPC, South Korea's Hyundai Engineering and a company from the United Arab Emirates, Petrofac, in order to develop the Galkynysh field. Turkmenistan's success at channeling new fields by engaging in partnerships with China did not only boost production but also made China the main export route at a time when Russian demand of Turkmen gas started to decrease.

Gas production in Turkmenistan exceeded 76 billion cubic meters in 2014, of which 45 billion cubic meters was exported.[29] Turkmenistan plans to increase gas production and exports. The government adopted the "Programme for the development of the oil and gas industry of Turkmenistan until 2030", to reach the target of 250 billion cubic meters a year of gas production by 2030.

Gas Export Diversification Policy

Turkmenistan's being a country without access to the open seas deeply affects the availability of export routes, which are overall very limited. This leads to a number of difficulties that exacerbate the negative features of being a Small Power. Turkmenistan's neighbors (including neighbors via the Caspian Sea--Russia, Iran and Azerbaijan) are producers of oil and gas. Russia, as the biggest gas reserve holder and exporter, aims to sustain its control over the markets, while Iran, which ranks second after Russia in terms of reserve, is keen to enter the markets, some of which are promising for Turkmenistan as well.

Turkmenistan's main foreign policy objective is highly characterized by its being a post-Soviet Small Power in search of new gas markets and partners in the energy sector. Historically, in Soviet times, the Soviet republics were the main markets for Turkmen gas. The main transport corridor for the export of Turkmen gas (and gas from the neighboring Central Asian republics of Kazakhstan and Uzbekistan) emerged through the Central Asia Center pipeline, which was built in 1967. In 1985, the volume of gas pumping through the pipeline was brought up to 80 billion cubic meters, and its length was extended from 3000 km to 5000 km. Most of the pipeline falls within the territory of Turkmenistan - 3940 km.

Following its independence, Turkmenistan had a quota from Russia on exports to the European market, which amounted to 11 billion cubic meters. However, in 1994, Russia abolished the quota, forcing Turkmenistan to export gas only to Ukraine and some former Soviet republics. Although Ukraine was a good market for Turkmenistan, gas transport to this country would necessitate transportation through Kazakhstan and Russia. This new gas structure negatively affected Turkmenistan's balance of payments, since most of the post-Soviet countries were unable to pay their debts at the time. Thereby, Turkmenistan was forced to reduce, and eventually halted deliveries to these countries. Turkmenistan exported only 6.5 billion cubic meters in 1997 and only 1.8 billion in 1998, to Iran.

Reduced exports also led to a sharp reduction in gas production, down by 80% in 1998 from the previous year. Given the high dependence of Turkmenistan on the Central Asia-Center pipeline, the issue of exports diversifying its export routes was the most important task for this Small

Power. In 1997, Turkmenistan, for the first time, put into operation an alternative to the Central Asia-Center pipeline, the Korpeje Kurt-Kui pipeline, with a length of 200 km and a capacity of 8 billion cubic meters (expandable to 14 billion),[30] which linked the country with Iran. The construction of this pipeline was financed by Iran in order to supply gas to the northern part of Iran, which was weakly connected with the gas fields in the south.

In April 2009, an explosion occurred on the Central Asia-Center pipeline, which completely stopped the export of gas from Turkmenistan to the north for several months. The explosion took place when the negotiations between Turkmenistan and Russia were tense over the price for Turkmen gas. Turkmenistan and Russia had signed an agreement in 2003. Accordingly, Turkmenistan would produce 80 billion cubic meters of gas per year to Russia at better terms. Between 2006-2008, almost all Turkmen gas was exported (about 41-42 billion cubic meters per year) to Russia.

In 2010, Russia began to produce gas from the Bovanenkovo field on the Yamal Peninsula and significantly reduced the volume of purchases of Turkmen gas, reducing them to 11 billion cubic meters[31] and later, to 4 billion cubic meters. Turkmenistan confronted a monthly loss of about 1 billion dollars. This incident happened to be one of the reasons which obscured the implementation of the Caspian gas pipeline project agreement, signed in 2007, to be constructed through Russia, Kazakhstan and Turkmenistan.

This picture made Turkmenistan consider China as a promising partner who was in need of gas and could overcome Turkmenistan's limited capacity arising from its being a Small Power. A new gas pipeline project from Turkmenistan to China, passing through the territory of Turkmenistan, Uzbekistan, Kazakhstan (1,900 km), and most of China (4500 km) was introduced in December 2009. The capacity of the first two lines of the gas pipeline would be 30 billion cubic meters of gas in a year. Construction of the third line, with a capacity of 25 billion cubic meters of gas per year, was completed in late 2014. The capacity of the pipeline from Turkmenistan to China amounted to 55 billion cubic meters of gas per year in 2015. In September 2013, Turkmenistan and China had already signed an agreement on the construction of a fourth gas pipeline, with a capacity of 25 billion cubic meters of gas per year. This branch would take place along the route of Turkmenistan-Uzbekistan-Tajikistan-Kyrgyzstan-China.

Thus, the total capacity of the pipeline to the east of the system would reach 80 billion cubic meters of gas per year. According to the agreements between the two countries, Turkmenistan pledged to supply China with up to 65 billion cubic meters of gas annually by the end of 2021.

Given past experience of being extremely dependent on one actor, Turkmenistan intended to diversify its export routes, which, as noted above, are highly restricted by geographic conditions.

In 2010, another pipeline to Iran, Dovletabad - Sarahs – Hangeran, was built with the length of 30.5 km, and a capacity of 12 billion cubic meters of natural gas per year. The pipeline increased Turkmenistan's capacity to export gas to or via Iran up to 20 billion cubic meters per year.[32] This route was considered to be strategic since it could allow Turkmenistan to sell gas in Turkey and Europe. Turkmenistan has been committed to achieving this route since the very establishment of an international consortium to construct a Turkmenistan-Iran-Turkey-Europe pipeline in April 1994. This project was shelved in 1995 for several reasons, among which, Iran's long-term projection on becoming a major supplier to European markets might have played a role.

The Turkmenistan-Afghanistan-Pakistan-India pipeline (TAPI) is an important alternative project supported by the Turkmen government, and yet obscured by geopolitical uncertainty in the region as in the case of the Taliban and Kashmir problems. The planned length of the pipeline will be 1735 km, including 200 km in the territory of Turkmenistan, 773 km of Afghanistan, and 827 km in Pakistan to the village Fazilka on the border with India. It is expected that the annual capacity of the pipeline will be 33 billion cubic meters.[33]

The Trans-Caspian pipeline can be stated as another massive investment project that could drastically change supply and market side features in the Caspian. This would run 300 km under the Caspian Sea to reach Azerbaijan, and then connect to the Baku-Tbilisi-Erzurum gas pipeline, with the possibility of being integrated with the forthcoming TANAP and TAP. To this end, Turkmenistan has already completed the construction of an East-West gas pipeline with the length of about one thousand kilometers, which will connect the Dowletabat and South Yolotan to the Caspian coast.[34]

The uncertainty over the legal status of the Caspian and some geopolitical issues are not only postponing this project also making Russia and Iran express

counter arguments by benefitting from environmental concerns.[35]

Despite the strenuous efforts of Turkmenistan to achieve a satisfactory level of diversification, this issue will again be important for this Small Power in the future.

Given the limited opportunities for the diversification of exports, Turkmenistan has taken the initiative by preparing a resolution on "Reliable and Stable Transit of Energy and Its Role in Ensuring Sustainable Development and International Cooperation", which was adopted by the 67th Session of the UN General Assembly.[36] Turkmenistan hopes that in this way it will form the basis for a partnership in the energy sector, which will take into account the interests of all participants in the process - the producers, transporters and consumers of energy resources. Turkmenistan is trying on a legal basis to minimize the country's dependence on the transit countries.

At the same time, Turkmenistan offers to potential buyers of its gas to choose an export route, offering the sale of its natural gas at the border. Thus, Turkmenistan seeks to diversify its energy exports in several ways: through the creation of transport corridors in new directions, producing a wide range of finished products, as well as the formation of an international legal framework. Despite the strenuous efforts of Turkmenistan to achieve a satisfactory level of diversification, this issue will again be important for this Small Power in the future. At the moment, Turkmenistan uses gas as a leverage to foster relations with China, Iran and Turkey with the aim of overcoming extreme dependence on one actor, and easing some of the disadvantages of being a Small Power in search of further energy trade.

Conclusion

Azerbaijan and Turkmenistan are two Small Powers without access to the open seas but with vast oil and gas reserves. This appeared to be a key factor in determining their foreign policies based on national energy strategies looking for secured phases of exploration and field development while diversifying export routes. In general, the main task of these two Small Powers was to reduce the undesired consequences of extreme dependence on one or few actors concerning production and transportation phases. Azerbaijan and Turkmenistan differed from each other in terms of the ways they channeled

new partners, increased production, and diversified export routes.

This differentiation had objective and subjective reasons. Firstly, and above all, geography played the most decisive role. Azerbaijan had a relatively more favorable position of being able to create alternative transportation corridors in the western direction by simultaneously cooperating with Russia on the one hand, and Georgia and Turkey on the other. Both directions are widely used for oil exports. As for Turkmenistan, the options for alternatives were few. In order to diversify export routes, the only alternative to Russia emerged as China, apart from the gas pipelines to Iran.

Azerbaijan found the opportunity to invest in the energy sectors of Georgia and Turkey, which in turn supported inter-dependence on mutually beneficiary terms.

Another important reason appears in terms of the end user of the gas. Gas transport pipelines from Turkmenistan reached Iran, Russia and China, of which Iran and Russia considered Turkmen gas as a competitor to their own gas and tried to benefit from re-export or transit fee opportunities rather than helping Turkmen gas reach new markets. China, therefore, appeared as the main option concerning gas exports, with a risk of extreme reliance on one actor.

Partners and energy export routes led to further differentiation between these two Small Powers. Azerbaijan found the opportunity to invest in the energy sectors of Georgia and Turkey, which in turn supported inter-dependence on mutually beneficiary terms. SOCAR's investments and affiliations played a remarkably important role in this process. Even Turkmenistan and Turkmen state companies had the potential, technical ability, financial capacity and willingness to engage in international energy investments; this was limited by the converging priorities of Russia and Iran.

As to conclude: what is the most decisive factor that creates the divergence between Azerbaijan and Turkmenistan? Does it emerge from state strategy, firm behavior or geography? The differences between Azerbaijan and Turkmenistan are outcomes of objective and subjective reasons, as mentioned above. And yet, geography plays the most determinant role. Azerbaijan has a relatively more favorable position of being able to create alternative transportation corridors in the western direction.

Thus were created the pipelines passing through the territory of Russia and Georgia, and Turkey. Both directions are being widely used for oil and gas exports. As for Turkmenistan, the options for alternatives were few. In order to diversify export routes, the only alternative to Russia appeared as China. The contingency of a new pipeline system between Turkmenistan and Iran towards Turkey, or other destinations, remained underdeveloped much more because of Iran's will of increasing gas exports in the mid-term. In fact, except for small shipments to Iran, Turkmenistan's exports are not diversified. On the contrary, Turkmenistan's extreme dependence on Russia has now been replaced by extreme dependence on China. Turkmenistan seems to attribute priority to securing energy revenues, rather than consolidating demand security through diversification. Azerbaijan also attributes significance to energy revenues, and yet has proven to be capable of diversifying routes and investments not only by the virtue of geographic location but also by the help of the state strategy and SOCAR's business approach that prioritized international trade with diverse parties on mutual benefits. However, even if Turkmenistan would have the political leverage as of SOCAR, it would not be easy to consolidate liberal trade terms in between Great Powers, namely Russia and China. It is therefore possible to conclude that geography proves to be overwhelmingly effective in case of Turkmenistan, and emerges as a positive asset supporting the state strategy and firm behavior in case of Azerbaijan.

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India and the Global Game of Gas Pipelines

By Gulshan Dietl
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In recent years, natural gas has increasingly gained in geopolitical significance. Gas is no longer a marginal fuel but a fuel of choice for many energy consumers. Driven by the availability of shale gas, the growth of the natural gas industry is firmly linked to growing demand in the power sector from non-traditional places like China, developing Asia and the Middle East, while traditional domains of North America and Europe maintain the most substantial absolute increases in gas use. Gas consumption has become more widespread as its transportation across vast distances has become possible through improved pipeline construction and as LNG shipped in large tankers.

In her book, *India and the Global Game of Gas Pipelines*, Gulshan Dietl reminds us, however, that 80 percent of gas produced is consumed locally, making the resource primarily a national commodity, rather than a commodity of international exchange. That is because gas transport infrastructure is costly to build (both pipelines and LNG exporting and receiving terminals) and storage is usually tricky. The process of globalization and surge of demand from growing Asia has spurred the building of pipelines across difficult geographical terrains and the extraction of untouched reserves. The author opines that gas pipelines, once constructed, affect the creation of a 'strategic geography' as distinct from the territorial demarcation of states they intersect, and through providing passage and access to the resource become "indispensible to the survival, security, and prosperity of the state[s]" (p. 5).

Pipelines are secure ways to transport gas but are insecure entities in themselves, subject to physical vandalism, cyber-attacks on monitoring computer systems, and state level political threats such as sanctions or secessionist/dissident movements (pp. 49-50). While building pipelines through difficult geographical terrains of permafrost or deep-sea is a complicated

and expensive business, keeping the lines functioning is even more so. Such maintenance involves strategic coherence on many factors, including a "committed investor, domestic politics in the countries involved; bilateral relations between the supplier and producer countries; relations among the supplier, [and] producer and transit countries" (p. 43). Above all, the viability of the pipeline depends on two simple economic principles – demand and supply of gas and low production costs that yield a high profit.

In the three case studies of Iran, Russia and Turkmenistan, Dietl looks at the pipelines originating from each of these countries. By possessing the second most abundant oil reserves and second largest gas reserves in the world, in addition to its geographical location as the only nation that abuts both the Persian Gulf and the Caspian Sea, Iran's ambition to play a pivotal role in the gas trade is obvious. However, the energy trade embargo has constrained the nation's aspiration. Iran has fought back though, with "gas pipelines it has attempted to propose, revive and build to break out of the shackles around its gas production, sale and purchase" (p. 58).

The success and failure of gas pipelines originating from Iran have followed the cardinal rule of the game: Pipelines get built when peace and institutions are already in place rather than the reverse (p. 42). Iran's good relations with Armenia, Turkey and Oman spelt the success of the fully functioning Iran-Armenian pipeline since 2007 and the Iran-Turkey pipeline since 2003. The Iran-Oman pipeline, still in the making, is expected to come to fruition in 2018. The Iran-Iraq-Syria pipeline met its death in the civil war in Syria and the many woes of the Nabucco pipeline (from Turkmenistan to Austria), to which Iran was to contribute as much as 25 BCM of gas per year (p. 72), can be related to Russian opposition and American sanctions on Iran. Iranian gas supply has been helped by massive demand in Armenia and Turkey, as it is by ample reserves that bring down the cost of production.

With the largest gas reserves in the world, Russia's pipeline exports wind through Europe, the Caucasus and Turkey. Much has been written about Europe's overdependence on Russian gas and its multiple efforts to diversify sources of gas supply, but much less is done about the situation. Germany still wants the Nord Stream II, and Italy and Greece are keen to see the South Stream come online as soon as possible. Gas from the Caspian region or gas-rich countries of the Middle East – Iran, Iraq or Qatar – requires negotiations over a minefield of issues

before long-distance pipelines to Europe can actually be put into practice.

The supply of Russian piped gas to Europe has been aided by stability and market institutions thoroughly in place. Any hint of instability or dispute has stopped the construction of new pipelines. The delay in the development of the Nord Stream II and South Stream pipelines (pp. 93, 95) are examples affirming the idea that peaceful conditions support pipeline trade. Europe is a market that the Russian national gas company, Gazprom, considers its backyard – its dominance protected by vast reserves and low production costs. Russia's 30-year gas contract to supply China, the first of its kind, through the so-called Power of Siberia pipeline, rides on the burgeoning Russian-Chinese ties in defence and infrastructure, as much as it does on demand from the world's largest energy market. A second pipeline to China's Xinjiang region, to be supplied from untapped fields in western Siberia, would match Gazprom's market penetration in Europe and cement a more extensive Russian-Chinese cooperation in different sectors.

In the 'great game' of the pipelines in the Central Asian heartland, Turkmenistan, the holder of the world's fourth-largest natural gas reserves, is a critical actor. It is land-locked, and so are the countries on its borders. Turkmenistan, therefore, faces challenges in developing its gas reserves because of far-off end-use markets and lack of investments. China is the key export market for Turkmen gas; more than 70 percent of exports go to China, through a network of parallel gas pipelines running through Uzbekistan, Tajikistan, and Kirghizstan called the Central Asia-China Pipeline (CACP). Iran and Russia also import a small amount of gas from Turkmenistan. Do the pipelines from both Russia and Central Asia to destinations in China along with China's Belt and Road Initiative announced in 2013 presage the revival of Mackinder's influential Heartland thesis? Only time can tell but, today, China's allying with Russia and the Central Asian Republics in firm and abiding energy relations, through the sinews of the pipelines and related infrastructures, relates to a potential Heartland condition.

In the pipeline game, India is a niggardly player. There are "no external gas pipelines coming in, going out or traversing its territory" (p. 149), although three major pipeline plans have long been in the offing. The Iran-Pakistan-India (IPI) pipeline, under consideration for more than two decades now, has been held up due to several issues, most importantly, the security of the pipeline through Pakistan's restive

Baluchistan province, putting credence to the argument that pipelines as entities get built and thrive in peaceful and stable conditions. Similarly, a big question mark over the impending Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline project is security (p. 163). The India-Bangladesh-India pipeline to bring gas from Myanmar was embroiled in bilateral political issues between India and Bangladesh right from the very beginning, placing an effective barrier to any enduring energy ties.

And so, pipelines are much more than physical entities transporting gas from producers to consumers; they indicate the intricate dynamics of politics and economics involved in their existence. The 'game' is in bringing the various actors together, driving hard bargains, maximizing gains across the board, and sustaining the project's long-term viability. In the end, pipelines will always "reflect the [political] preference of the powerful" (p. 180) actor.

This book provides a wealth of material on natural gas and its trade in the local, regional and global context. With an eye on the lay reader, the author tells us about the chemical composition of natural gas, its earlier discoveries in the worldwide context, geographical distribution, and gas markets in the first chapter. The second chapter gives us an idea of pipeline economics about how they carry gas over long distances as well as how they fare vis-à-vis LNG trade. The third, fourth and fifth chapters on Iran, Russia and Turkmenistan, tell us about the gas fields, reserves, and national gas policies of each of these actors, besides the pipelines that originate from these countries. In the last chapter on India, the author deals diligently with the questions of demand, production and import of gas in the absence of pipeline supply.

While the book is an imposing study of gas trade and an indispensable read for scholars and lay readers alike, some minor hitches related to editing could have been resolved in the manuscript. For instance, a reference URL (p. 5) in the middle of the sentence breaks the flow for the reader. Or, sometimes, a billion cubic metres is both written out in full and then abbreviated as bcm on the same page (p. 98). I also wish the author had provided a map for each of the pipelines discussed in the book as a ready reference. All in all, the book lives up to its promising title of exploring the game of gas pipelines comprehensively with ample data and thoughtful analysis.

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Contemporary Politics in the Middle East

By Beverley Milton-Edwards
Cambridge: Polity Press, 2011, 340 pages, ISBN: 978-0-7456-5230-6

Lecturers in Middle East politics and contemporary history are often influenced by their own preferences regarding what to include in a teaching syllabus. Which textbook best introduces the debates and jargon of academic studies of the Middle East? Many textbooks cover the entire Middle East, some are thematic, and others approach the topic on a country-by-country basis. In her book 'Contemporary Politics in the Middle East', Beverley Milton-Edwards adopts a *hybrid* approach for her analysis of the Middle East.

The thematic chapters (about colonial rule, nationalism, political economy, war and lack of peace, political Islam, democratisation, women, ethnicity and minorities, the West and the Middle East) incorporate case studies involving state and nonstate actors. Such an approach, including a thematic structure supplemented by case studies, has the advantage of including both state and nonstate actors in a comparative overview of the region. Moreover, the presence of case studies adds a depth of understanding to the thematic topics and subjects and how they have (or have not) materialised in the region over time.

The introductory chapter lays the terminological foundations for the Middle East as such and introduces students to the major debates of Middle East scholarship, such as Orientalism. Furthermore, it directs students' attention to perceptions and portraits of the Middle East from both lay and academic perspectives and clarifies the huge difference that exists between the two perspectives. Moreover, it demonstrates that different streams exist within the academic perspectives. Defining which states are included in the Middle East and which are not, as this book does on page 5, is a good foundation for a textbook for students of the Middle East. By the same logic, it would be helpful to apply the same coherence to the term 'the West', which remains undefined, thus leaving students puzzled regarding what is the West

and what is not. The following chapters explore the historical background and the factors that shaped domestic and inter-regional politics, in addition to international affairs, in the Middle East. The book provides students with the necessary theoretical framework and empirical case studies. The reader becomes aware of the imprint left by the colonial experience on the Middle East in terms of geostrategic boundaries, the engineering of political systems, the struggle with modernist discourses, and economic independence.

The book aims to cover the broader Middle East. Yet, not all the chapters are consistent in this regard. Chapter two, about nationalism, for instance, focuses on (pan-) Arab identity. Thus, it does not cover Turkish, Iranian, and Israeli nationalism, among others. Although this chapter was not written broadly to cover the whole Middle East, the author does not explicate why she imposed such limitations. This focus may be misleading for students who view the Middle East and the Arab world interchangeably. Chapter nine ("Them and Us") focuses too much on the USA in the Middle East and too little on the EU in the Middle East. In addition, it disregards the USA-EU nexus in the Middle East.

The author's methodological approach involves leading social scientists and humanists, with the aim of introducing students to the major scholarly works and related conceptual debates on the Middle East. However, not all the chapters are consistent with this approach. Moreover, the book, printed in 2011, does not shed light upon recent revolutionary upheavals (the so-called Arab Spring and the post–Arab Spring) and power constellations in the region (regional order). The chapters contain illustrative materials, discussion questions and references for further useful reading. This book is one of the most viable textbooks about the Middle East. The reviewer hopes that a future updated and extended edition will resolve some of the above-mentioned issues.

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The final decision on whether the manuscript is accepted for publication in the Journal or not is made by the Editorial Board depending on the anonymous referees' review reports.
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John Smith, *The Book Title*, New York, New York Publishing Co., 1999, p. 100.
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Articles in Edited Books

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Christopher Hooton, "Japan is Turning Its Abandoned Golf Courses into Solar Power Plants", *The Independent*, 21 July 2015.

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PRO King's Remembrancer's Memoranda Roll, E159/69, m. 78. BM Add. MS 36042, fo.2 (plural fos.). Four-figure numerals without comma or space: 2572. Titles of other record repositories, and names of collections of papers, in full in first reference: Scottish Record Office (hereafter SRO), Airlie Papers, GD 16, section 38/82, April 5, 1844. Compton Papers, kept at the estate office of the Marquess of Northampton, Castle Ashby (hereafter CA), bdle. 1011, no.29.

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Theses

For titles of published and unpublished theses use italics: John E. Smith, *Title of Thesis*, unpublished Ph.D. thesis, Name of the University, Year, Chapter #, p. #

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Title of Book Reviews

Türk Basınında Dış Habercilik (Foreign News Reporting in the Turkish Media), by M. Mücahit Küçükyılmaz and Hakan Çopur. Ankara: SETA, 2010, 168 pages, ISBN 9786054023073.


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