

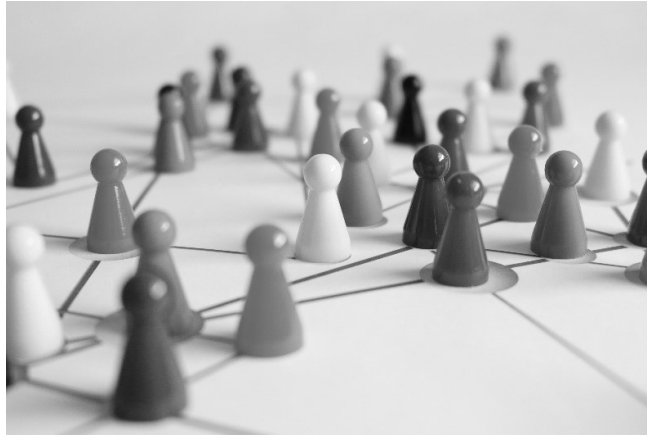
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Alignment of Greek-US Energy-related Security Interests
in SE Europe and the Eastern Mediterranean

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I hereby declare that this dissertation is my own original and autonomous work. All sources and aids used have been indicated as such by in-text citations. Full bibliographic details are given in the reference list which also contains internet sources containing URL and access date. This work has not been submitted to any other examination authority.

Michalis Mathioulakis

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Introduction

During the past decade, Energy has been gaining a growing role in the security environment of the South-Eastern Europe and Eastern Mediterranean regional subsystems. However, the complex, interdisciplinary and multi-layered nature of energy resources and energy flows, create a challenging framework when attempting to evaluate its impact on security issues on a regional, as well as global, level. On a regional level, energy developments in SE Europe and the Eastern Mediterranean are of great interest for Greece, regarding their impact in both its economy and national security. Greece, being an EU Member-State stands on a crossroad of numerous potential new energy routes with the capacity to diversify EU's energy sources, energy networks, and energy mix, thus significantly enhancing EU's energy security. Coupled with the country's renewed energy potential related to new hydrocarbon exploration activities, and new Renewable Energy initiatives, these elements create a new framework of interests carrying the capacity to influence core security interests and objectives on a national and regional level. For the United States, energy developments in the two aforementioned regional subsystems are also of great interest. Following up on its unprecedented shale gas and shale oil revolution, the United States possesses now the capacity to offer its European allies tools to reduce their dependence on Russian energy and influence. Energy developments in SE Europe and the Eastern Mediterranean could, therefore, introduce a support structure for core US security interests and objectives.

The purpose of the current study is to examine the framework that could lead to an alignment of interests between Greece and the US as regards to energy developments on a regional level as well as to determine the elements and mechanisms through which these energy interests relate and interact with the two countries' security interests. This analysis intends to move beyond the -obvious- financial aspects of energy that are usually credited with a corresponding political interest, and establish a theoretical framework that has the capacity to identify the requirements and conditions under which energy projects and energy flows can be linked to security objectives and interests. In order to identify the elements of energy interest alignment between Greece and the US, it is deemed necessary to, first and foremost, define the criteria that carry the capacity to attribute strategic value to an energy project. This thesis will thus begin by establishing the theoretical background that links energy with national security, followed by a classification of the criteria that define a strategic energy project. In the next steps, a determination of Greek and US strategic and energy interests will follow in order to be tested against the pre-determined criteria for strategic energy projects.

The same analytical process will be then applied for other actors in the subsystems of SE Europe and Eastern Mediterranean, both major (EU and Russia) as well as regional (Balkan countries, Israel, Egypt, Cyprus, Turkey) in order to build a framework of converging and diverging energy-related strategic interests in the two subsystems. In the final step of the present analysis, a number of existing, planned and proposed energy projects will be tested through the above-mentioned constructed theoretical tools in order to determine the pathways and the basis through which the alignment of Greek and US energy interests is -or could be- materialized.

Chapter 1 – Theoretical context

1.1. Building a link between Neorealism and Energy Security

In order to identify the strategic aspects of energy projects its deemed necessary to utilize the theoretical context of neorealism in combination with fundamental energy security conceptualization so as to identify the link between energy recourses and national security. To this end, elements from Kenneth Waltz's Balance of Power Theory and John Mearsheimer's Distribution of Power analysis will be combined with Barry Buzan's Securitisation theory and Daniel Yergin's analysis on Energy Security.

According to Kenneth Waltz, anarchy in the international system, the concept that the system functions under the absence of a central authority, leads state actors to self-help in order to ensure their survival within the system.¹ Under the self-help principle, state actors are forced to combine all factors of production in order to maximize their national interests and ensure their survival in the international system. In this effort, a state's power factors (military, economic, technological etc.) cannot be managed separately but ought to be thought and handled as a whole that produces the total power necessary for survival. Under Waltz's approach, states seeking to establish their own survival, strive to achieve their goals through internal efforts (internal balancing) and external efforts (external balancing). The present analysis examines the ways and preconditions under which control over energy resources and infrastructure can function for, or even against, a county's efforts to maximize its national interests and ensure its survival in the international system.

Linking fundamental elements of neorealism into the study of energy flows inevitably leads also to the Distribution of Power theory. John Mearsheimer argues that actors in the international system are careful about how power is distributed among them and are constantly struggling to maximize their share of power in order to maximize their security. He contends that state actors use a number of means -economic, diplomatic, military- in order to change the balance of power to their benefit. Under this framework, distribution of power is presented as a zero-sum game where when one country gains power; another one is losing power.² The concept that a state actor has relative losses of power because of other actors' gains in power will be applied in the present study, in order to identify consequences of energy infrastructure defined as 'strategic' in the distribution of power between state actors in the region. The

¹ Kenneth Waltz, *Theory of International Politics* (Boston: McGraw-Hill, 1979)

² John Mearsheimer, *The Tragedy of Great Power Politics*. (Athens: Pliotita, 2006), 86-87, in Greek.

fundamental theoretical framework of neorealism as briefly presented above, will be linked in the present analysis with the concept of Energy Security. Daniel Yergin identifies ten principles of Energy Security, namely the diversification of sources and routes, the country's position in the Global Energy Market, its Security Margin, how well the Energy markets are functioning, the formation of relationships with Exporting Nations, the level of cooperative relations among Importing Nations, the quality of information regarding the state's energy options, the level of robustness of the domestic industry, the level of Research & Development in the energy field, and energy security's contribution in planning for disruptions.³ The vast majority of these principles carry elements of 'externality' meaning that they influence, or are influenced by, each state's position in the international system and the balance of power with other states. Out of these ten principles, Diversification, relations and cooperation with exporting and importing nations respectively, as well as the element of planning for disruptions, can be identified as crucial in relation to the strategic weight they carry for a country's national security.

1.2 Securitization, Regionality and Energy

The elements of 'externality' in Energy Security carrying the ability to generate shifts in a state's overall levels of power, create the conditions for the 'securitization' of energy resources and energy flows. The framework and context of securitization is therefore important in building a link between energy and the threats faced by a state in its struggle for survival. The issue of securitization has been widely discussed by Barry Buzan in his book, "People, States & Fear: An Agenda for International Security Studies in the Post-Cold War Era" where he debates the realist view of security as a mere 'synonym for power' aiming to offer a wider perspective on security than the 'traditional focus on national military power'.⁴ Buzan enriches security with aspects that were not until then perceived to be part of the security concept. He is broadening security analysis in separate segments for Power Security, Economic Security and Regional Security, while placing security threats within five distinct sectors, namely Political, Military, Economic, Societal, and Ecological. According to Buzan, "Security is taken to be about the pursuit of freedom from threat and the ability of states and societies to maintain their independent identity and their functional integrity against forces of change, which they see as

³ Daniel Yergin, "Energy Security and Markets" in *Energy & Security: Strategies For A World In Transition*, eds. J.H.Kalicki and D.L.Goldwyn (Washington D.C.: Woodrow Wilson Center Press, 2013), 74-80.

⁴ Barry Buzan. *People, States & Fear: An Agenda for International Security Studies in the Post-Cold War Era*. (Colchester: ECPR Press, 2016), 104-126.

hostile. The bottom line of security is survival, but it also reasonably includes a substantial range of concerns about the conditions of existence”.⁵

Placing security above and beyond the strict, direct framework of military threats, offers the necessary basis for energy to be perceived as a part of the wider security concerns spectrum and for Energy Security to be treated with the theoretical tools of security analysis and international relations theory. Furthermore, Buzan’s assessment of Regional Security as a separate aspect of security and the securitization theory can prove a valuable tool when applying it to Energy Security. Buzan characterized security as a ‘relational phenomenon’ and argued that this characteristic makes it impossible to fully comprehend a state’s national security framework without taking into consideration the ways in which its security concerns link, interdepend and interact due to the relationship between states in the same region, in what he called a ‘Security Complex’.⁶ The notion of security complex in Buzan’s concept as ‘a group of states whose primary security concerns link together sufficiently closely that their national securities cannot realistically be considered apart from one another’, will be useful for the part of this thesis that examines energy-related interests in the subsystems of SE Europe and Eastern Mediterranean.

The concept of ‘Region’ is also examined by Aristotle Tziampiris. In “The New Eastern Mediterranean as a Regional Subsystem” Tziampiris identifies the various dimensions that can be attributed to a region, namely the *geographical proximity*, the *security dimension* provided by Security Complexes, the *cohesion dimension* corresponding to the Internal and external recognition of a region, the *common historical background*, and the dimension of *economic interdependence* between states.⁷ Tziampiris’ analysis of the Eastern Mediterranean based on the dimensions that determine a Region, offers a valuable basis in determining the framework of converging and conflicting strategic and energy interests in both the regional subsystems this thesis is examining in order to identify the possible alignment between Greek and US interests in the energy sector.

⁵ Barry Buzan, “New Patterns of Global Security in the Twenty-first Century”, *International Affairs*, 67.3 (1991): 432-433.

⁶ Barry Buzan, *People, States & Fear: An Agenda for International Security Studies in the Post-Cold War Era*. (Colchester: ECPR Press, 2016), 157-189.

⁷ Aristotle Tziampiris, “The New Eastern Mediterranean a Regional Subsystem”, in *The New Eastern Mediterranean Theory, Politics and States in a Volatile Era*, eds. Spyros Litsas and Aristotelis Tziampiris (Cham: Springer International Publishing, 2019), 3-6.

Chapter 2 - Identifying the strategic elements of energy projects

Among the current analysis' goals, lies the necessity to identify the elements linking control over energy flows with national security goals. Projects involving infrastructure on energy production or energy networks are often characterized as 'strategic'. However, no typology exists to identify the elements such a description would include. While, almost intuitively, most major national or transnational energy project involving vast capital investment are characterized as 'strategic', it seems that attributing such quality based solely on the economic aspect of a project is an incomplete way to approach the issue. For state actors, strategy refers to their ability to utilize all available means and resources (military, economic, diplomatic, etc.) in order to achieve policy-set objectives.⁸

According to Platias and Koliopoulos, "strategy is about a state coupling means and ends in the context of international competition, both in peacetime and wartime and both during a potential as well as an actual conflict. Strategy never exists in a vacuum; it implies an opponent, a conflict, a competition, a situation where somebody is trying to achieve a goal against somebody else. Thus, a strategy is always formulated against one or more opponents, who, in turn, develop their own strategy and try to counter the former".⁹ This approach on strategy as regards to state actors creates a direct link between the objectives of the strategy and the threats state actors face in their effort to survive in the international system. It is therefore deemed necessary to identify those security threats that lead to the formation of strategic objectives and research the links between *them* and energy flows.

2.1. Strategic objectives of state actors

As presented above, the strategic objectives of state actors are linked directly to the security threats they are designed to address. The wide range of elements that constitute a State, lead to an equally varied palette of threats that, as presented in Chapter 1, include primarily military, political and economic threats. According to Buzan, military threats "...affect all components of the state where the use of force threatens to overthrow a self-created rule by consent and replace it with an imposed rule by coercion".¹⁰ Military threats can vary in intensity and scope,

⁸ Athanassios Platias and Constantinos Koliopoulos, *Thucydides on Strategy: Athenian and Spartan Grand Strategies in the Peloponnesian War and Their Relevance Today*, (London: Hurst, 2010), 1-21.

⁹ *ibid*

¹⁰ Barry Buzan, *People, States & Fear: An Agenda for International Security Studies in the Post-Cold War Era* (Colchester: ECPR Press, 2016), 75-83.

spanning from loss of territory to forced change in policies or ideologies within the state, loss of control or influence over disputed areas or of international legal rights, or even forced adaptation to another state's policies and preferences in the international system. Accordingly, a state's strategic objectives linked to military threats can be equally diverse, spanning from deterring military aggression to counteracting foreign influence over the state's international legal rights. Political threats, on the other hand, refer primarily to the internal structure of the state in terms of the ideas, cultures, institutions, and governing principles that constitute a State and justify its monopoly of access to force within its borders. Lastly, economic threats can be identified as a means-to-an-end rather than a direct threat to national security.

The imposition of extreme trade tariffs, economic sanctions, product embargoes, or even the rapid expansion of foreign economic influence over a state's existing trade allies and partners, are potential threats to a state's national economy and therefore to its ability to effectively utilize its political and military resources for its national security. Similarly to military threats, the diversity of political and economic threats formulate equally diverse strategic objectives spanning from deterring foreign influence on a state's institutions and governing principles (e.g. interference with the elections procedure) to counteracting Foreign Direct Investments (FDI) to critical infrastructure of trade and/or military allies by a competing state actor. As presented earlier, the aim of this Chapter is to identify the elements linking control over energy flows with national security goals. The above approach established that this would entail detecting the link between energy flows, security threats and strategic objectives.

2.2. Elements of strategic value for energy projects

Combining the elements that, according to neorealism, define a state actor's behaviour for survival in the international system with the principals of energy security linked to a country's position in the international system, we can identify the elements of an energy project that carry strategic value. As security threats formulate strategic objectives, these are linked directly to a state's efforts for survival in the international system. In turn, survival in the anarchic and competitive international system can be achieved through internal and external balancing. This includes, on the one hand, the strengthening of state power factors and its ability to project and use power, and on the other hand, strengthening its system or network of alliances. Given the above line of thought, energy projects and energy flows can potentially offer strategic value when they contribute to a state's internal and external efforts, thus assisting in achieving its

strategic objectives built to address the security threats it faces. In particular, at least one of the following three conditions need to be met.

- Primarily, in order to attribute strategic properties to it, an energy project needs to contribute in a *significant* way in maximizing the country’s share of power in the international system. This could be achieved either by significantly raising its economic impact in the local economy, thus offering the state with the potential to transform it to hard power, or by raising its ability to project power, and therefore its impact, in the economies of other state actors within the system.
- Secondly, an energy project needs to generate a significant *change* in the balance of power within the system in order for it to have strategic value for the state actor it evolves. If the rise in -economic or political- power deriving from an energy project is substantial enough to change the balance of power within the system, then it has contributed significantly in the state’s efforts to improve its position in the system.
- Thirdly, an energy project carries strategic value if it leads to the overall enhancement of a country’s ability to increase its self-help efforts either through internal balancing, such as stronger economic capacity, more stable political system, raising hard power abilities, or through external balancing, such as building new alliances or strengthening its role in existing ones.

The three basic elements that attribute strategic properties in an energy project are presented below:

Figure 1. Strategic Framework of Energy Projects (SFEP)

Conditions that attribute strategic properties in an energy project	
1	Contribution in maximizing Share of Power in the system
2	Significant change in the Balance of Power in the system
3	Enhancement of Self-help efforts through Internal or/and External Balancing

Summarizing the above three elements, it can be defined that an energy project has strategic value when it contributes to the promotion of a state’s security goals for survival within the international system.

Chapter 3 - Greek strategic energy interests

In order to define Greece's strategic energy interests on a national and regional level, it is deemed necessary to identify the country's security objectives and its energy objectives separately. This analytical approach assists in detecting the elements of Greece's energy policy, bearing the capacity to align with, and support its overall security goals, thus attributing strategic value to them.

3.1. Greek security objectives

Greece's security objectives as officially expressed by the ministries of foreign affairs and defence, include, primarily, the deterrence of Turkey's aggressiveness against changes of the territorial status quo provided for in international treaties, as well as the establishment of a comprehensive, mutually acceptable, just and viable solution to the Cyprus problem.¹¹ Further security objectives include energy security as well as issues aligning with its position as a member of the EU and NATO, thus including hybrid threats like international terrorism, migration and cybersecurity.¹² On the issue of deterrence against Turkish aggressiveness, Greece evaluates as a security threat Turkey's efforts in changing the territorial status quo provided for in international treaties – the Treaty of Lausanne being pivotal among these – and the legal status of maritime zones and airspace as they derive from international law and the law of the sea.

The Greek ministry of foreign affairs estimates that “tension in Greek-Turkish relations was marked by the first claims on the Greek continental shelf, in 1973, and the first disputing of the extent of Greek national airspace, in 1975. The advent of Turkish policy coincided with the Turkish invasion of Cyprus in July 1974 and the subsequent Turkish occupation of the northern portion of Cyprus, which continues to this day, decisively impacting relations between the two countries and increasing tensions”.¹³ On the issue of the 1974 illegal Turkish invasion and the occupation, of 37% of the territory of the Republic of Cyprus, the most recent security threat posed for Cyprus and extending to Greece, relates to Turkey's activities in violating the

¹¹ “Foreign Policy Issues”, Hellenic Republic - Ministry of Foreign Affairs, accessed November 19, 2019, <https://www.mfa.gr/eidika-themata-exoterikis-politikis/>.

¹² “Address of the Minister of National Defence to the standing Committee for national Defence and foreign affairs”, Hellenic Republic - Ministry of National Defence, accessed November 19, 2019, <http://www.mod.mil.gr/omilies/omilia-ypoyrgoy-ethnikis-amynas-sti-diarki-epitropi-ethnikis-amynas-kai-exoterikon>.

¹³ “Issues of Greek - Turkish Relations”, Hellenic Republic - Ministry of Foreign Affairs, accessed November 19, 2019, <https://www.mfa.gr/en/issues-of-greek-turkish-relations/>.

sovereignty and sovereign rights of the Republic of Cyprus, by carrying out drilling activities within the Cypriot Exclusive Economic Zone (EEZ) and continental shelf.¹⁴ As will be examined further in this analysis, the objectives of deterrence against Turkey's aggressiveness, the solution of the Cyprus issue, and strengthening of energy security, can be linked to Greece's energy objectives in the capacity that developments in the latter can carry significant impact in achieving the former.

3.2. Greek energy policy

Greece's energy policy is influenced and aligned with the overall agenda of EU's Energy Union policy in the sense that it is based on three fundamental objectives: security of supply, market integration and climate change. Throughout these three objectives, Greece's energy policy differentiates from EU in its resolve to explore the potential of local hydrocarbons production, predominately natural gas, from onshore and offshore fields that recently presented significant potential and have attracted the initial interest of major energy exploration companies. Elements of Greece's national energy policy can be found in relevant announcements by the Greek Ministry of Environment and Energy.¹⁵ Respectively, elements of Greece's regional energy policy can be found in relevant announcements by the Greek Ministry of Foreign Affairs, with an emphasis on energy networks linked to, or affecting Greece, it's national energy policy and EU commitments.¹⁶ The basic objectives that formulate Greece's energy policy can be summed up into six categories that include reduced dependency on energy imports, diversification of energy suppliers, diversification of energy transportation routes, diversification of energy mix, energy-trading market integration, and compliance with EU commitments on CO2 emissions. The tools utilized to achieve these diverse and occasionally contradicting objectives are analysed below:

3.2.1. Reducing dependency on energy imports

Greece's energy dependency rate is currently at 70% while in particular elements of its energy mix, like oil and gas, dependency on imports is almost 100%. The country's efforts to

¹⁴ "Announcement on Turkey's illegal actions in the Cypriot EEZ", Hellenic Republic - Ministry of Foreign Affairs, October 4, 2019, <https://www.mfa.gr/en/current-affairs/statements-speeches/ministry-of-foreign-affairs-announcement-on-turkeys-illegal-actions-in-the-cypriot-eez-october-2019.html>.

¹⁵ "Ενεργειακή Πολιτική", Hellenic Republic – Ministry of Environment, Energy & Climate Change, accessed November 29, 2019, <http://www.ypeka.gr/el-gr/>. (in Greek)

¹⁶ "Energy Diplomacy", Hellenic Republic - Ministry of Foreign Affairs, accessed November 29, 2019, <https://www.mfa.gr/energeiake-diplomatia/>.

reduce its dependency on energy imports include an extended program for licensing and deployment of new exploration activities combined with further development and integration of Renewable Energy Resources. Local energy sources include significant lignite volumes and rising Renewable Energy production. Both elements of local resources are used for electricity production, while the country currently has insignificant oil and gas production. This leads to the afore-mentioned high dependency rates that, according to the International Energy Agency (IEA) are reaching almost up to 100% in oil and gas supply.¹⁷ High imports of crude are also related to the country's international obligations to maintain 90-day oil reserves to ensure its security of supply. According to IEA, throughout the last 15 years, Greece maintains and exceeds its oil reserves obligations. In 2017, the country held 35.6 million barrels of oil stocks, that was equal to 145 days of 2016 net imports. Even when adding the locally-sourced electricity production, Greece's overall import dependency rate exceeds, as earlier mentioned, 70% throughout the past decade.¹⁸

Figure 2. EU Member States dependency rate

GEO/TIME	2007	2017
EU - 28	52,9	55,1
Malta	100,0	102,9
Cyprus	95,9	96,3
Luxembourg	96,7	95,4
Portugal	81,5	79,9
Italy	83,0	77,0
Lithuania	60,7	75,6
Belgium	77,1	74,8
Spain	79,6	73,9
Greece	70,8	71,1
Ireland	87,5	67,1
Slovakia	69,7	64,8
Austria	69,3	64,4
Germany	58,8	63,9
Hungary	60,3	62,6
Croatia	51,8	53,3
Netherlands	37,4	51,8
Slovenia	52,6	50,4
France	50,4	48,6
Latvia	62,5	44,1
Finland	53,5	44,0
Bulgaria	51,2	39,5
Poland	25,8	38,3

¹⁷ "Greece Key Energy Statistics", International Energy Agency, accessed December 10, 2019, <https://www.iea.org/countries/greece>.

¹⁸ "Energy production and imports", Eurostat, accessed January 12, 2020, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_production_and_imports.

Czechia	25,0	37,2
United Kingdom	20,4	35,3
Sweden	36,6	26,6
Romania	31,2	23,1
Denmark	-24,5	11,7
Estonia	27,1	4,1

Source: Eurostat

Aiming to reduce Greece’s dependence on imports of oil and gas, state-owned Hellenic Hydrocarbon Resources Management company (HHRM) has been proceeding with tenders and licensing rounds for various onshore blocks in north-western Greece as well as offshore blocks in the southwest of Greece and south of the island of Crete. Exploration licenses have been awarded to leading global companies in the oil & gas sector, namely Repsol from Spain, Total from France, and ExxonMobil from the US, as well as to Greek-based companies Energean and Hellenic Petroleum. As far as Renewable Energy Sources is concerned, Greece is upholding its EU targets for 20% RES share in the country’s energy mix by 2020.¹⁹ Greece’s efforts to reduce its overall energy imports are inevitably related to natural gas rather than crude oil.

However, as will be analysed further into this chapter, changes in the country’s energy mix related to decommissioning lignite-fuelled power plants in the mainland, as well as shutting down oil-fuelled power generation in the Greek islands not connected to the national power grid, lead to elevated needs for natural gas in the future. As a result, the level of success in reducing energy imports and improving energy autonomy will be judged partly by the country’s success in raising its local production of RES but, primarily, by exploration and exploitation of its onshore and offshore natural gas potential. To the latter, the interest expressed by ExxonMobil by acquiring an eight-year research and exploitation license in two offshore blocks on the south and south-west of the island of Crete could prove of great importance in building common energy-related interest between Greece and the US.

3.2.2. Diversification of energy suppliers

Currently, crude oil imports originate predominately from Russia and the Middle East, reaching up to 70% of total crude imports, while natural gas imports are also dominated by Russia with shares exceeding 65% in 2016.²⁰ Hellenic Petroleum, the partly state-owned distillery that covers more than two-thirds of Greece’s petroleum market, used to import up to

¹⁹ “National Renewable Energy Action Plan”, Hellenic Republic - Ministry of Environment, Energy & Climate Change, accessed January 14, 2020, <http://www.ypeka.gr/Portals/0/Files/Energeia/Ananeosimes/02.pdf>.

²⁰ “Energy Policies of IEA Countries: Greece 2017 Review”, International Energy Agency, accessed January 18, 2020, <https://www.iea.org/reports/energy-policies-of-iea-countries-greece-2017-review>.

25% of its crude from Iran up to 2018 but following the US sanctions on Iran has completely stopped its Iranian imports, replacing them with further imports from Russia, Iraq and Libya.²¹ While as far as crude oil goes, diversification of suppliers might prove to be a difficult task, natural gas offers more solutions, related primarily to new infrastructure of gas pipelines and LNG regasification installations.

Greece's efforts to diversify its energy suppliers focuses primarily on increasing the share of new imports of natural gas from Azerbaijan through the Trans Adriatic Pipeline (TAP) as well as the US and Algeria through LNG cargoes. In addition, Greece actively supports the prospective of imports from the newly found natural gas reserves in Cyprus, Israel, and Egypt. The afore-mentioned TAP pipeline, expected to transport over 10 billion cubic meters a year (bcm/y) of Azeri natural gas to the European markets, offers Greece the opportunity to link the pipeline to its national gas network and keep up to 1 bcm/y, effectively covering up to 20% of Greece's current demand. Furthermore, expanding US LNG capacity exports in recent years lead to a rapid decrease in LNG prices in Europe, resulting in the expansion of its share in the Greek market. In the first six months of 2019, the share of Russian gas imports in the Greek market fell to 50% while LNG imports rose to 40% of total imports.²² Greece's efforts to lower its dependency on imports of Russian natural gas and to replace it predominantly with LNG offers the opportunity for building further common interests between Greece and the US in the energy sector.

3.2.3. Diversification of energy transportation routes

The afore-mentioned high dependency on Russian oil and gas leads to low diversification of the routes transporting energy into the country. Currently, Greece fails to satisfy the N-1 criterion in all its energy source networks, namely electricity, oil, and natural gas. The N-1 criterion in energy supply systems, requires that at any given time, the system is able to withstand an unexpected failure of its biggest single system component. In the case of Greece's energy transmission networks, this would mean that if one of the major existing energy entry points (cable connections, pipelines, or ports) were to collapse, the supply of electricity, oil or gas would flow without major disruptions. Greece is currently importing oil through four ports in respectively four oil distillery facilities while it imports natural gas through

²¹ "Interim Condensed Consolidated Financial Statements", Hellenic Petroleum, March 31, 2019, <https://www.helpe.gr/userfiles/10beb747-86d7-4c1c-a1e1-a2850113ee26/2019%2003m%20Group.pdf>

²² "Russian gas exports to Greece in decline", Kathimerini, September 8, 2019, <http://www.ekathimerini.com/244294/article/ekathimerini/business/russian-gas-exports-to-greece-in-decline>.

two pipeline entry points, one -major- through Bulgaria and a much smaller one through Turkey, as well as one LNG Regasification Terminal in the island of Revithousa near Athens. Finally, on electricity, Greece holds small to medium capacity interconnections with all neighbouring countries with capacities varying roughly from 200 to 500 MW offering the option for limited imports of electricity. Since oil imports depend exclusively by sea transport, Greece's efforts to diversify the energy networks linked to, or affecting, the country's energy security are focused on natural gas and electricity. To this end, Greece supports a long list of planned or under construction energy infrastructure projects. The number of projects that will finally materialize will determine the country's effectiveness in diversifying its energy import routes. As will be analysed on chapter 6 of this study, some of these projects carry elements that promote US strategic interests in the area, thus have the potential to strengthen the alignment of Greek-US interests and cooperation.

Besides the afore-mentioned TAP pipeline, another energy infrastructure with the potential to increase Greece's route diversification objectives is the Interconnector Greece-Bulgaria (IGB), a natural gas pipeline designed to link northern Greece with Bulgaria. The IGB pipeline is, in turn, planned to be linked with the national gas grid, the TAP pipeline and other gas infrastructure both in Greece and Bulgaria, including the planned Alexandroupolis Floating Storage & Regasification Unit (FSRU) in the northeast of Greece. The latter is part of the planned Alexandroupolis Independent Natural Gas System (INGS) project, which will be receiving LNG shipments and comprises of the FSRU and a system of subsea and onshore gas transmission pipelines connected to the state grid and the IGB pipeline. Combined, the IGB and the Alexandroupolis FSRU create the potential for further diversification of Greece's energy transportation routes by creating a new network for LNG imports flowing in the domestic and wider SE European gas markets.

Further diversification of Greece's gas import routes could be achieved with the planned EastMed gas pipeline that aspires to transport natural gas from the newly found Eastern Mediterranean gas fields through Cyprus, Greece, and Italy to the heart of the European markets. Finally, on the diversification of electricity routes, the only major project planned to significantly improve the country's potential is the planned EuroAsia Interconnector. The project includes a 2GW capacity cable, linking Israel to Cyprus, Greece, and Italy with the main electricity grids in central Europe. The project could hold significant importance in Greece's diversification efforts since its 2GW capacity represent 17% of the country's 12GW installed capacity and 28% of its annual 7GW electricity consumption.

3.2.4. Diversification of energy mix

Greece's energy mix is currently dominated by fossil fuels, namely lignite, oil and natural gas while RES production remains within the EU-set targets reaching up to 17% of total consumption in 2017.²³ Diversification of the country's energy mix is driven primarily due to its obligations to EU's Energy Union targets in RES shares, decarbonization and climate change protection. To that end, Greek governments move forward with extended decommissioning of lignite-fired power production factories as well as with actions to lower or terminate oil-fuelled power production in the Greek islands that are not interconnected to the mainland electricity grid. In both cases, power production is planned to be extensively replaced with gas-fired systems, thus expanding Greece's exposure to gas demand.

3.3 Greek energy interests in the regional subsystem

On a regional level, Greece's energy interests are officially expressed through the ministries of energy and foreign affairs.²⁴ They include, on the one hand, extended cooperation with Cyprus, Israel, and Egypt regarding the transportation of their energy resources through Greece to the rest of the EU and, on the other hand, the cooperation with other Balkan countries in strengthening energy security and the flow of energy sources through Greece to the rest of South-Eastern Europe.²⁵ To that end, Greece supports international energy infrastructure projects that include, among others, the afore-mentioned EastMed gas pipeline, the EuroAsia Interconnector cable, and the IGB pipeline. A common denominator in all these efforts is strengthening the country's energy security and diversification efforts as analysed above. As will be further supported in this analysis, most of these projects align with EU's objectives to reduce dependency on Russian energy imports and, in that capacity, align with US strategic interests in Eastern Mediterranean and South-Eastern Europe. This alignment of Greek, EU and US interests in the energy sector offers a unique opportunity for the creation of a strong cooperation framework between Greece and the US in promoting and materializing common security objectives on a regional level.

²³ “Συνεπής με τις δεσμεύσεις της για την ανάπτυξη των ΑΠΕ η Ελλάδα”, Capital.gr, April 15, 2019, <https://www.capital.gr/oikonomia/3354680/sunepis-me-tis-desmeuseis-tis-gia-tin-anaptuxi-ton-ape-i-ellada> (in Greek).

²⁴ Hellenic Republic - Ministry of Foreign Affairs, “Energy Diplomacy”

²⁵ Hellenic Republic - Ministry of Environment, Energy & Climate Change, “Ενεργειακή Πολιτική”

Chapter 4 - US strategic and energy interests in the region

4.1 US strategic objectives in the two regional subsystems

For the United States, its strategic objectives in the regional subsystems of SE Europe and the Eastern Mediterranean are linked directly to its overall national security strategy. As a global power, the US formulates global security interests and assumes global responsibilities and actions. Its current security objectives derive from the National Security Strategy (NSS) issued by the White House in December 2017.²⁶ As described in the document, US strategy is ‘guided by principled realism’, acknowledging the central role of power and the relations between sovereign states in defining US national interests. These interests can be summarized into three key categories: (i) defence of the homeland, (ii) stability in critical regions, and (iii) preservation of the right of states to freely transit the global commons.²⁷ Following the December 2017 National Security Strategy, US security interests have also been defined and stipulated by the US National Defence Strategy (NDS) issued by the Department of Defence (DoD) in January 2018.²⁸ The NDS acknowledges the existence of an increasingly complex and volatile global security environment, characterized primarily by the re-emergence of long-term, strategic competition between nations.

When combining the security approaches in the two documents, three distinctive categories of threats to US interests can be identified: (i) threats from revisionist powers, namely Russia and China, (ii) threats from rogue states, primarily North Korea and Iran, and (iii) threats from non-state actors, predominately transnational Islamist terrorist groups, such as ISIS and al-Qaeda. Regarding threats by revisionist powers, US strategies acknowledge inter-state strategic competition as the primary concern for U.S. national security. The United States perceives China and Russia as the two principal countries seeking to destabilise the international system from within by exploiting its benefits while at the same time undermining its principles and rules. For the United States, China is a strategic competitor “using predatory economics to intimidate its neighbours while militarizing features in the South China Sea” while Russia “has violated the borders of nearby nations and pursues veto power over the

²⁶ “National Security Strategy”, US White House, December 2017, <https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf>

²⁷ “Preparing the U.S. National Security Strategy for 2020 and Beyond”, Heritage Foundation, May 23, 2019, <https://www.heritage.org/defense/report/preparing-the-us-national-security-strategy-2020-and-beyond>.

²⁸ “Summary of the 2018 National Defense Strategy”, US Department of Defense, accessed January 23, 2020, <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>.

economic, diplomatic, and security decisions of its neighbours”. Placing China as its primary long-term security concern regarding threats from revisionist powers, the United States through its NSS and NDS highlights that China is utilizing a mix of economic incentives, threats for economic isolation, support of rivalling states, and implied military threats, to persuade other states to support its political and security agenda. For the US, China’s infrastructure investments and trade strategies in the Indo-Pacific region, the Middle East and Europe are targeted primarily to bolster its geopolitical aspirations through coercion and predatory economics and business practices. Similarly to China, the two US strategy documents, estimate that Russia is seeking to create spheres of influence targeting to disrupt the relations between the United States and its allies and partners and to weaken NATO and the European Union. Washington stipulates that Moscow sees itself in a continuing competition with the United States, seeking to undermine the post-Cold War security framework in Europe through a combination of bolstered military capabilities, projection of military power on a regional level around EU’s borders, interference in the domestic politics of EU and NATO member states, destabilisation of their democratic institutions and ‘weaponization’ of its energy export capabilities in Europe.

Regarding threats by rogue states, the US focuses primarily on North Korea and Iran, linking them to their relations and interactions with China and Russia. Perceived as ‘rogue regimes’ North Korea and Iran are identified as countries aiming at destabilizing their regions through the pursuit of nuclear weapons, sponsorship of terrorism and, in the case of Iran, the support of proxies that enhance its destabilizing objectives by putting pressure to important US allies. Regarding threats by non-state actors, the US identifies the on-going threat by transnational Islamist terrorist groups, such as ISIS and al-Qaeda. For Washington, non-state actors continue to pose a serious threat to the global and regional security environment, still holding increasingly sophisticated capabilities in combination with trans-national criminal organizations, cyber hackers, and other malicious non-state actors, thus transforming global affairs with increased capabilities of mass disruption.

On a regional level, the combined threats from revisionist powers, rogue states, and non-state actors carry the potential to generate changes on the regional balance of power that can have global consequences and threaten vital U.S. interests. For Washington, stability in Europe remains crucial to US interests as well as peace and stability in the Middle East and the Mediterranean. The two regional sub-systems of Europe and the Middle East, therefore, present interlocked security interests for the US, that identifies the most significant external threats to Europe originating from Russia, the destabilizing influence of Islamic terrorism, the refugees flows, conflict from the Middle East, and the intruding business-oriented influence of China. In

its NSS and NDS documents, the US reaffirms its determination to continue its efforts in strengthening deterrence and defence of NATO’s eastern flank and “catalyse frontline allies and partners efforts to better defend themselves”. The United States pledges in its two strategic documents to deepen its cooperation with its European allies to confront forces threatening to undermine common security interests, counter Russian subversion and aggression and the threats posed by Iran, work with its allies and partners to diversify European energy sources to ensure the energy security of European countries, contest China’s unfair trade and economic practices and restrict its acquisition of sensitive infrastructure.

Analysing the US National Security and National Defence Strategies, it can be concluded that the US identifies certain sub-systems within the regional systems of Europe and the Middle East as a ‘frontier’, designated to deter and defend security threats to NATO’s eastern flank related to Russian and Chinese influence and Islamic terrorism. As will be analysed further in this study, such a line of ‘frontier’ states, could be structured and built through the *energy sector* regarding the Eastern Mediterranean and South-Eastern Europe. Such an energy-linked ‘frontier’ could include Israel, Cyprus, Greece, Bulgaria, Romania, and Ukraine. Combined with political and military support to the Baltic countries, the US is thus presented with the ability to formulate the line of “frontline allies and partners” acknowledged in the NSS and NDS. Figure 3 that follows, shows in blue, the ‘frontier’ line of states linked by energy flows supported by the US and in green the ‘frontier’ line of states linked by US political and military support.

Figure 3. ‘Frontier’ deterring Russian, Chinese and terrorism threats

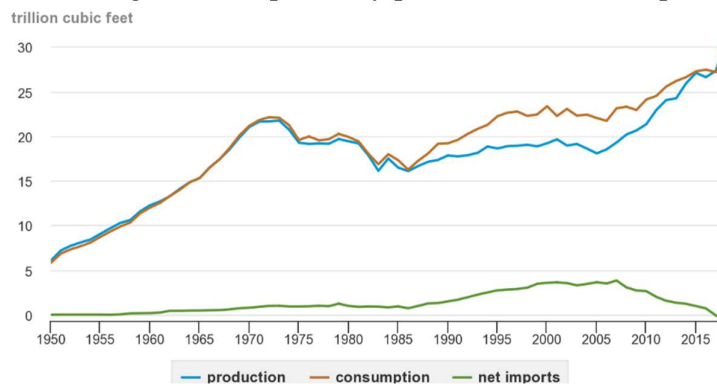


Such an energy-related ‘frontier’, carries the ability to contain Russian aggressiveness in NATO’s eastern flank by reducing the share of Russian energy exports to the EU, thus decreasing its influence in the EU member-states, and, therefore, Russia’s ability to fund its military budget and operational ability in the wider region. Diversifying EU’s energy mix with gas flows from the Eastern Mediterranean and imports of US LNG shipments lowers the political weight of natural gas pipelines from Russia, Iran, and Azerbaijan through Turkey to the EU. American energy exports towards the European energy markets, combined with new gas routes from Israel and Cyprus via Greece to the EU, lead to counterbalancing Russian influence in Europe, containment of Iranian energy and operational expansion in the Middle East, keeping Azerbaijan in line with American interests, and limiting Turkey’s energy hub potential in the Eastern Mediterranean system, thus its ability to further question its relations with the US.

4.2 US global energy objectives

The United States’ energy policy and objectives have changed drastically in the last decade due to the rapid expansion of exploration and production of hydrocarbons in shale rock formations with the use of horizontal drilling and hydraulic fracturing techniques. The unprecedented volume of shale oil and shale gas produced with these methods has completely transformed the US energy dependency rate, with the country’s annual production in recent years matching its consumption levels. According to the US Energy Information Administration (EIA), in 2018, U.S. natural gas production reached 30,6 trillion cubic feet (Tcf), the highest annual amount ever recorded, as seen in Figure 4 below.²⁹

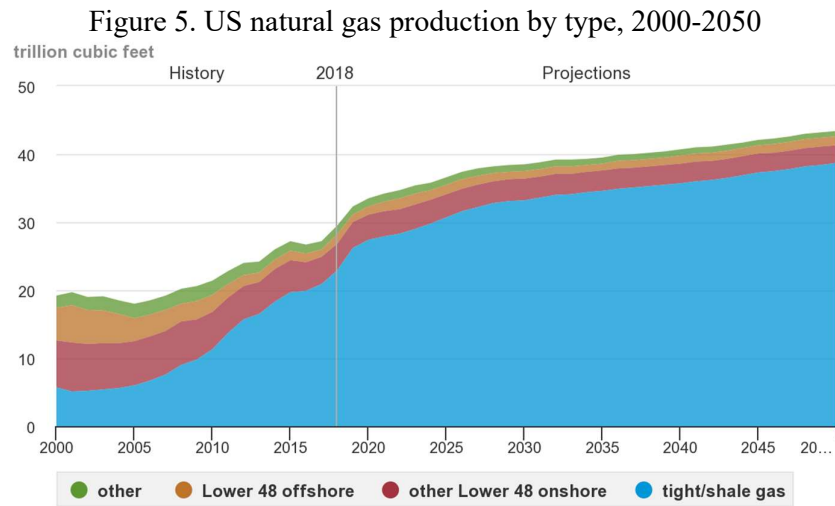
Figure 4. US natural gas consumption, dry production and net imports, 1950-2018



Source: US Energy Information Administration

²⁹ “Natural gas explained”, US Energy Information Administration, accessed March 26, 2020, <https://www.eia.gov/energyexplained/natural-gas/where-our-natural-gas-comes-from.php>.

The United States has access to significant natural gas resources. The U.S. Energy Information Administration estimates that the United States has about 464 Trillion cubic feet (Tcf) of proved wet natural gas resources, which includes about 308 Tcf of shale gas resources and about 438 trillion cubic feet of dry natural gas. In its 2019 Annual Energy Outlook, EIA estimates that the U.S. has about 2,137 Tcf of unproved dry natural gas resources.³⁰ As seen on Figure 5, total shale gas production in the US is expected to increase by more than 50% from its 2018 levels by 2050.



Source: US Energy Information Administration

The United States’ shale gas revolution leads to significantly higher power levels in terms of foreign, economic and trade policy.³¹ For the first time since the end of WWII, Washington regains full control over its energy security and, for the first time since the end of the Cold War it creates the potential for its’ European allies to lower their dependence on Russian energy resources thus decreasing Russia’s influence over American interests in Europe. US autonomy in natural gas combined with rising exports of American LNG also brings a dramatic change in the distribution channels of natural gas on a global scale as LNG shipments create alternative routes for natural gas that are in direct competition with the traditional pipelines routes.³² For Washington, Europe has the potential to become a profitable LNG market in the future by taking

³⁰ “Oil and Gas Supply Module”, US Energy Information Administration, accessed March 26, 2020, <https://www.eia.gov/outlooks/aeo/assumptions/pdf/oilgas.pdf>.

³¹ James Slutz, “The US Energy Outlook”, in *Too Much Energy: Asia at 2030*, American Enterprise Institute, February 2015, 7-26, <https://www.aei.org/wp-content/uploads/2015/02/Too-Much-Energy.pdf>.

³² Kenneth B. Medlock III, et al., “Shale Gas and US National Security, working paper”, Baker Institute for Public Policy, July 2011, <https://www.bakerinstitute.org/media/files/Research/ccccf6b6/EF-pub-DOEShaleGas-07192011.pdf>.

advantage of EU's plans for diversification of its energy imports sources. The current US energy policy expressed by the Trump Administration has been dominated by the slogan of 'energy dominance' used by President Trump during his election campaign. After being elected, the president laid out his vision for energy dominance in a June 2017 speech at the US Department of Energy.³³ Despite differences in tone and wording by the Trump administration, the policy of 'energy dominance' should essentially be considered as a continuance of US efforts initiated by the previous presidential administration under the policy of 'energy independence' to intensify exports of LNG to Europe and Asia. The concept of 'energy dominance' stipulated by the Trump administration is based on three pillars; energy independence, cheap domestic energy prices, and utilisation of domestic energy as a source of job creation and economic growth.³⁴

As regards to the application of US energy policy on a global scale, the 2017 National Security Strategy presented a set of goals and actions with a direct effect in US relations with its allies, partners, and adversaries on a global and regional level. The 2017 NSS stipulates that as a growing supplier of energy resources, technologies and services around the world, the United States aims at assisting its allies and partners in becoming more resilient against state actors that utilize energy for political coercion. Under this framework, US energy policy is set to support its allies in diversifying their energy sources, supplies, and energy routes, protect global energy infrastructure from cyber and physical threats and encourage them in developing their own, consistent with their national energy security needs, energy potential.³⁵

4.3 Realization of US strategic objectives through energy projects

The application of US energy policy on a regional level regarding the sub-systems of South-Eastern Europe and the Eastern Mediterranean leads to a series of national and transnational energy projects and policies in these regions that are supported by the United States since they promote the afore-mentioned US security and energy interests. US efforts to support the diversification of energy sources and routes, protect infrastructure, develop new energy sources, and increase resilience against state actors that utilize energy for political coercion in these regions, are expressed through the support from Washington for projects that

³³ "Trump wants America to be energy dominant", CNBC, July 1, 2017,

<https://www.cnbc.com/2017/06/28/trump-america-energy-dominant-policy.html>

³⁴ "What's next for US energy policy?", Oxford Institute for Energy Studies, November 2017,

<https://www.oxfordenergy.org/wpcms/wp-content/uploads/2018/01/OEF-111.pdf>.

³⁵ US White House, "National Security Strategy".

lower dependency from Russian gas, increase energy cooperation between US allies and partners and strengthen economic and political stability in the countries involved. To this end, the United States and the European Union have launched since 2009 the ‘EU-US Energy Council’ initiative planned to boost transatlantic energy cooperation that, among others, recognises in its meetings a series of energy projects that promote common energy and security interests in Europe and its borders.³⁶ Since the 6th EU-US Energy Council in 2014,³⁷ a series of such projects have been identified and reaffirmed through the 7th and 8th meetings of the Council in 2016 and 2018.

Such projects include, among others, the Southern Gas Corridor that includes the Trans-Adriatic Pipeline (TAP), the LNG terminal in Krk Island in Croatia, the Interconnector Greece-Bulgaria (IGB) and the associated FSRU installation in Alexandroupolis Greece. In its 2016 meeting, the Council also recognized the potential of the new gas resources in the Black Sea, the Caspian Basin, North Africa, and the Eastern Mediterranean for the energy security of the EU and the wider region and reaffirmed its commitment to provide energy sector support to Ukraine and other vulnerable countries.³⁸ The above projects regarding the development and resilience of energy infrastructure and the diversification of energy sources and routes, especially in relation to the role of LNG, have also been identified during the Council’s last meeting in 2018.³⁹

As will be analysed further in the last chapter of this study, a series of such projects are planned, constructed, or recently completed in the Western Balkans, the Balkan countries that are EU Member States (Greece, Bulgaria and Romania), Cyprus, Israel and Egypt. These include a combination of LNG Terminals, natural gas transportation pipelines and interconnectors as well as high voltage electricity interconnectors and ‘electricity highways’ and although they are national or transnational projects related to the countries involved in them, they also carry the capacity to support US energy and security interests and will thus be

³⁶ “Energy - Key partner countries and regions - United States of America”, European Commission, accessed February 13, 2020, https://ec.europa.eu/energy/topics/international-cooperation/key-partner-countries-and-regions/united-states-america_en.

³⁷ “Joint Statement EU-US Energy Council”, European Commission press release, December 3, 2014, <https://ec.europa.eu/energy/sites/ener/files/documents/2014.12.03%206th%20Press%20statement%20final.pdf>.

³⁸ “U.S.-EU Energy Council”, US Department of State press release, May 4, 2016, <https://2009-2017.state.gov/r/pa/prs/ps/2016/05/256883.htm>

³⁹ “Joint Press Release: The European Union and the United States of America held their eighth Energy Council”, European External Action Service press release, July 12, 2018, https://eeas.europa.eu/headquarters/headquarters-homepage/48322/joint-press-release-european-union-and-united-states-america-held-their-eighth-energy-council_en.

further examined in the last chapter of this study under the ‘Strategic Framework of energy projects’ presented in Chapter 2.

Chapter 5 - Strategic and energy interests of regional actors

In order to better understand the multi-layered framework of strategic and energy interests for Greece and the US in the regional subsystems of SE Europe and the Eastern Mediterranean, it is necessary to analyse the interests of other regional actors with the ability and will to act on a regional level, thus shaping a framework of aligned and conflicted energy-related security interests in the region. To this end, the current chapter presents an analysis of the strategic and energy interests of the EU, Russia, Israel, Egypt, Turkey, Cyprus and the Balkan countries of Bulgaria, Serbia, Albania, and North Macedonia.

5.1 EU strategic and energy interests

5.1.1. EU Strategic interests

EU's strategic interests are predominantly expressed through its Common Foreign and Security Policy. Its primary decision-making body is the European Council while its objectives are expressed through the High Representative for Foreign Affairs and Security Policy, head of the European External Action Service (EEAS). In its new strategic agenda for 2019-2024 released in June 2019, the European Council provided the new framework of its strategic objectives focusing on five main priorities that include protecting citizens and freedoms, developing a strong and vibrant economic base, building a climate-neutral, green, fair and social Europe, and promoting European interests and values on the global stage.

Analysing a wide range of perceived threats and challenges, the Council's Strategic Agenda identifies, among others, illegal migration, terrorism, hybrid threats and disinformation originating from hostile State and non-State actors, climate change, unfair trade practices, extraterritorial measures and security risks from third countries, and challenges in securing strategic supply chains.⁴⁰ The majority of these objectives have been constant through recent years. The 2016 Global Strategy for the European Union's Foreign and Security Policy, issued under the Juncker Commission (2014-2019) set, in a very detailed and elaborate way, the Priorities of EEAS.⁴¹ These, among others, include deeper cooperation with NATO, Counter-

⁴⁰ "A new strategic agenda 2019-2024", European Council press release, June 20, 2019, <https://www.consilium.europa.eu/en/press/press-releases/2019/06/20/a-new-strategic-agenda-2019-2024/>.

⁴¹ "Shared Vision, Common Action: A Stronger Europe. A Global Strategy for the European Union's Foreign and Security Policy", pp18-38, European External Action Service, June 2016, https://eeas.europa.eu/sites/eeas/files/eugs_review_web_0.pdf.

terrorism, Cyber Security, Energy Security, promoting political reform, the rule of law, economic convergence and good neighbourly relations in the Western Balkans, strengthening the European Neighbourhood Policy (ENP) to the east and to the south of EU, the extension of Trans-European Networks and the Energy Community with physical and digital connections, and supporting the sovereignty, independence, and territorial integrity of states, the inviolability of borders and the peaceful settlement of disputes. On the latter, the Global Strategy document makes specific remarks on Russia's violation of international law in Ukraine and the wider Black Sea region, characterizing its relationship with Russia as a key strategic *challenge*. On the Mediterranean and the Middle East, EU's Global Strategy includes taking action on issues that include border security, trafficking, counter-terrorism, non-proliferation of Nuclear Weapons, water and food security, energy and climate. Lastly, there is also special mention on EU's resolve to deepen sectoral cooperation with Turkey, while striving to anchor Turkish democracy in line with its accession criteria, including the normalisation of relations with Cyprus.

Out of the wide span of security challenges and objectives set in EU's Global Strategy documents, the ones related to the regional subsystems of SE Europe and Eastern Mediterranean seem to have some common characteristics regarding the action and tools needed in order to address them. These include the strengthening of the internal resilience and external cooperation between states in the region that keep and promote European principals and the rule of European and International law against threats by state and non-state actors. This framework of security objectives offers a valuable tool for the present analysis since -to a large degree- it seems, on the one hand, to align with Greek and US security objectives on a regional level and, on the other, to offer the opportunity for addressing these objectives through EU's Energy Policy. Therefore, an analysis of the EU's energy objectives is necessary in order to identify the correlation between the EU's strategic and energy interests on a regional level.

5.1.2 EU Energy interests

Overall, in the field of energy, the EU faces a number of issues that can be summed up primarily in three areas of interest, namely energy security, climate change and market integration. The first set of issues (energy security) refers to increasing dependency on energy imports, limited diversification of energy sources, competition by growing global energy demand, and security risks affecting producing and transit countries. The second set of issues refers to the growing and diverse threats of climate change, the slow progress in energy efficiency and the challenges of integrating an increasing share of renewables in the European energy mix. The third set of issues refers to the integration and interconnection of energy markets

in order to tackle high and volatile energy prices, increase transparency and competition and empower the final consumers. The EU has implemented an ambitious plan in order to improve all aspects of its energy policy from reducing its emissions of greenhouse gases to the reduction of its dependency on imported energy. The core of European energy policy has been expressed primarily through its Energy Union Strategy published in 2015, by the Juncker Commission. The strategy for the Energy Union is deployed in five closely related and mutually reinforcing dimensions, namely security solidarity and trust, a fully integrated internal energy market, energy efficiency, climate action & decarbonisation of the economy, and research, innovation, and competitiveness.⁴²

These dimensions determine the EU's overall objectives and its interests in the energy sector. They, in turn, lead to specific actions aiming to diversify Europe's sources of energy, ensure energy security through solidarity and cooperation between EU countries, enable the free flow of energy through the EU via adequate infrastructure and without technical or regulatory barriers, improve energy efficiency in order to reduce dependence on energy imports, prevent, reduce and reverse the effects of climate change, gain leadership in the area of renewable energy, and support research and innovation in low-carbon and clean energy technologies. At the end of 2019, the von der Leyen Commission prioritized one of the aspects of the energy union, tackling climate and environmental-related challenges, into the "European Green Deal" that is now the core objective of its energy policy.⁴³

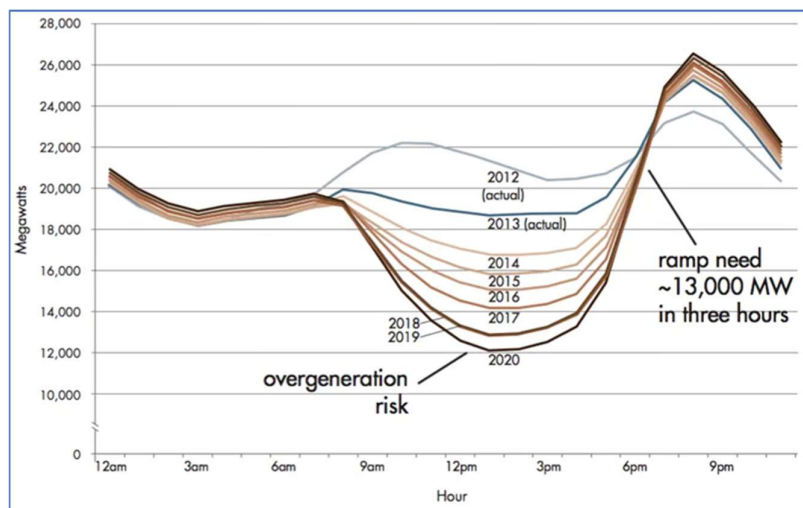
On a regional level, EU's energy objectives for SE Europe and the Eastern Mediterranean relate primarily to issues of energy security and the internal energy market. However, the EU's overall policies on climate change also bear a direct effect on its regional interests in the two subsystems under consideration. In particular, the EU's commitment to reduce CO₂ emissions, lead to policies aiming to rapidly reduce and eliminate coal-fuelled power production in Europe. Taking into consideration that coal-fuelled power production has been one of the major locally acquired sources of power production, the decision to eliminate it, bears the question of replacing it. Although the Commission's objective is to replace it with Renewable Energy Resources (RES) production, limitations in electricity storage technology pose a challenge for the rapid expansion of RES in the next decades. While higher RES share is crucial for the struggle against climate change, it is creating a significant set of challenges for the proper function of the overall

⁴² "Energy union", European Commission, accessed March 15, 2020, <https://ec.europa.eu/energy/en/topics/energy-strategy/energy-union-0>

⁴³ "The European Green Deal", European Commission communication, December 11, 2019, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf

electricity system. Fluctuations in RES production during the course of a day, formulate the so-called Duck-Curve graph,⁴⁴ where oscillations of power production cause a timing imbalance between peak demand and renewable energy production.

Figure 6. The Duck-Curve graph



Source: California Independent System Operator (CAISO)

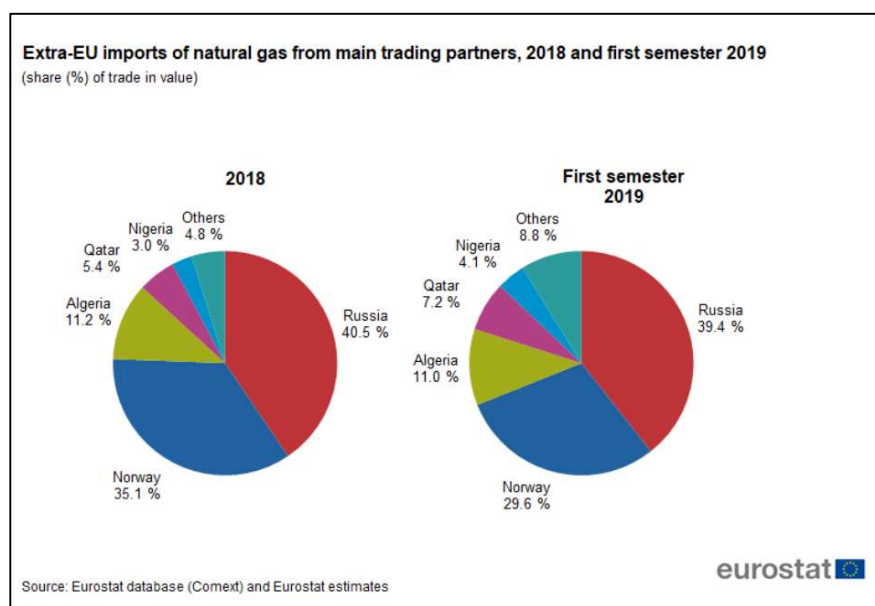
The model shows that extended RES production creates fluctuating grid conditions that require specific resource management functions from the system administrators to maintain system stability. The goal for higher RES integration into the European electricity mix is therefore inevitably linked to the effects of the Duck-Curve graph and the requirements for counteracting them.⁴⁵ This leads to the necessity for more flexibility, thus the need to maintain thermal power production units that carry the capacity to adapt to demand. The above analysis highlights the increasing role of natural gas as a *transition fuel* that can help stabilize the European energy system in the following decades in its transition towards an emissions-free energy mix. In a 2019 report by the International Energy Association (IEA) on the role of gas in the energy transition, one of the key findings was that “since 2010, coal-to-gas switching has saved around 500 million tonnes of CO₂ - an effect equivalent to putting an extra 200 million EVs running on zero-carbon

⁴⁴ “What the duck curve tells us about managing a green grid”, California Independent System Operator, accessed March 23, 2020, https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf.

⁴⁵ Michalis Mathioulakis, Antonis Metaxas, and Maria Lykidi, “Implementation of the Target Model: Regulatory Reforms and Obstacles for the Regional Market Coupling”. *European Energy Journal*, Volume 8, Number 3 (June 2019): pp. 28-43(16). Claeys & Casteels Law Publishers <http://www.europeanenergyjournal.eu/>.

electricity on the road over the same period”.⁴⁶ In addition to the shut-down of coal-fuelled power production, Germany’s decision to withdraw from nuclear-fuelled power production following the Fukushima Daiichi nuclear disaster in 2011, further intensifies the importance of natural gas as a transition fuel in the decades leading up to 2050 and the Commission’s targets on CO2 emissions for that landmark year. The increasing and critical role of natural gas as a transition fuel for sustainable energy system transformation, leads inevitably to questions regarding its security of supply. As presented on Chapter 1 of this study, out of the ten principles of Energy Security identified by Daniel Yergin, diversification, relations with exporting and importing nations, and planning for disruptions, can be identified as crucial in relation to the strategic weight they carry for national security. Leading among EU’s energy interests is, therefore, its security of supply for natural gas, where the high dependency on imports from Russia is a key issue. Although the EU has managed to not increase its total energy consumption over the past ten years and managed to improve its energy mix and efficiency, the shift from oil, nuclear, and coal, to natural gas, keeps its dependency on imports of Russian gas in high shares of almost 40%.⁴⁷

Figure 7. Shares of EU natural gas imports



Source: Eurostat

⁴⁶ “The Role of Gas in Today’s Energy Transitions”, International Energy Association - World Energy Outlook special report, accessed March 25, 2020, <https://www.iea.org/reports/the-role-of-gas-in-todays-energy-transitions#key-findings>.

⁴⁷ “EU imports of energyproducts – recent developments”, Eurostat, accessed March 29, 2020, <https://ec.europa.eu/eurostat/statistics-explained/pdfscache/46126.pdf>

This means that Europe's vulnerability against Russian energy exports is still high. To this end the European Commission's Energy Union Policy targets -among others- to reduce energy imports by 40% by 2030.⁴⁸ Three of the various proposed actions to achieve its goals are linked to its energy security strategy and the decreased dependence from Russian gas. These actions include the development of a Southern Gas Corridor for the supply of gas from the Caspian and the Middle East, the expansion of the use of liquefied natural gas (LNG) to ensure the liquidity and diversity of the EU markets, and the linking of European markets with the Eastern Mediterranean through electricity and gas interconnections.⁴⁹

The realization of EU's Southern Gas Corridor includes the construction of the Trans-Anatolian Pipeline (TANAP) in Turkey, and the Trans-Adriatic Pipeline (TAP) through Greece, Albania and Italy, that will begin supplying 10 bcm/y (billion cubic meters a year) of Azeri natural gas to the European markets since mid-2020. In relation to the Eastern Mediterranean, support by the European Commission on increased LNG shipments has been expressed through extended funding for the upgrade of the Liquefied Natural Gas terminal in Revithoussa, Greece. The EU also included the Interconnection Greece-Bulgaria (IGB) pipeline, and the Alexandroupolis Offshore LNG terminal (FSRU) in northeast Greece into its Projects of Common Interest (PCIs) list. PCIs is a list of key energy infrastructure projects, considered essential for completing the European internal energy market and for reaching the EU's energy policy objectives. As regards electricity and gas interconnections, the European Commission has included two projects in its PCI list: the EastMed pipeline connecting Cypriot offshore natural gas to mainland Greece, and the EuroAsia high voltage electricity interconnection between Israel and Greece.

Overall, the EU's Energy Security Policy includes several elements that align with its Common Foreign and Security Policy. On the critical issue of relations with Russia, policies to reduce dependence to Russian natural gas offer a tool to also reduce Russia's efficiency in financing its defence budget and therefore its ability to act outside the realm of international law on a regional level. Furthermore, EU's Energy Union policy offers a comprehensive tool for regional cooperation in the Balkans and the Eastern Mediterranean where new energy networks and interconnections strengthen economic activity between states and improve economic output,

⁴⁸ "Energy strategy and energy union", European Commission, accessed March 30, 2020, <https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union>.

⁴⁹ "A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy", European Commission communication, February 25, 2015, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2015:80:FIN>.

thus offering the conditions for stronger internal resilience and external cooperation between states in the region.

5.2 Russia

In the beginning of the 21st century, Russia finds itself in an asymmetrical interdependence with the EU.⁵⁰ The two actors are connected by strong and continuously growing trading relations as well as investment capital flow that moves to-and-from both the parties involved. Although their position in the international system does not seem to bring them in a direct path of collision, the two trade partners seem to be prone to the harsh effects of asymmetrical interdependence and the security threats that it imposes. According to Robert Keohane and Joseph Nye in order to have interdependence, it is not enough to have merely a high volume of transactions between two countries, but it requires the existence of significant costly effects that derive from these transactions.⁵¹ These costly effects come as a result of the limitations that derive from these transactions. The states involved are obligated to accept these limitations in their ability to act freely in order to maintain the benefits that also derive from these extensive interactions. The two renowned authors of “Power & Interdependence” emphasize that: “Asymmetries in interdependence are more likely to provide sources of influence for actors in their dealings with one another”.⁵²

Russia’s economy and its growth potential are linked directly to the decisions that EU officials make on the form and volume of trade that they will direct towards the Russian economy.⁵³ By the same token, the EU’s growth is inevitably linked to the Kremlin’s decisions over the flow of gas and oil that it will direct towards the European businesses and households. Russia perceives NATO’s expansion in Europe as a primary security threat. Furthermore, it faces security issues on the south of its Central Asian borders together with the implications that they bring to its Middle East policy. In effect, its primary concern is to secure the necessary energy revenues that could enable Moscow to project and exercise, if necessary, its hard power to those areas, thus rendering Russia eager to demonstrate a more assertive posture by striving

⁵⁰ Michalis Mathioulakis and Fotini Bellou, “Energy-related security dilemmas in Eastern Mediterranean”, in *Transformation of EU and Eastern Mediterranean Energy Networks*, eds Leigh Hancher and Antonis Metaxas, (Deventer, Netherlands: Claeys & Casteels Publishing, 2018), 59-89.

⁵¹ Robert O. Keohane and Joseph S. Nye, *Power and Interdependence*, (New York: Longman, 2001), 7-8.

⁵² Robert O. Keohane and Joseph S. Nye, 9

⁵³ Andrej Krickovic, “When Interdependence Produces Conflict: EU-Russia Energy Relations as a Security Dilemma”, *Contemporary Security Policy*, (2015): 36(1): 3-26.

to gain greater leverage within the European energy markets.⁵⁴ Developments in the Eastern Mediterranean raise both opportunities and challenges for Moscow. Kremlin's overall energy efforts have been focusing on maintaining its energy sales revenues from the European markets while avoiding Ukraine. Furthermore, the Eastern Mediterranean offers Moscow the opportunity to attempt to control and influence future flows of natural gas from Iran, through Syria or Turkey, towards the European markets. Recent discoveries of natural gas resources in Egypt, Israel, and Cyprus, pose a potential threat for the Kremlin. Volumes of proved and extractable natural gas reserves in the Zohr, Leviathan, and Aphrodite fields, offer the EU the potential to significantly diversify its energy imports from Russian natural gas. Egypt, Israel, and Cyprus have therefore the potential to raise their leverage within the regional subsystems of Eastern Mediterranean and SE Europe. For the Kremlin, the issue of the distribution channels through which these volumes will be exported is of high importance. Pipelines built from Cyprus, Israel, or even Egypt towards the EU come in direct collision with Russian interests since they provide an alternative stable structure of energy flows for the EU and are therefore at the centre of Russia's disruptive efforts. It needs however to be underlined, that if these natural gas reserves are moved through LNG shipments, they could be less susceptible to Russian influence.

Russia's security objectives in relation to its energy export capacity are expressed primarily through the materialisation of two major natural gas pipeline systems, namely the Nord Stream 2 and the TurkStream pipelines. The Nord Stream 2 is designed to carry 55 bcm/y of natural gas from the Russian port of Ust-Luga in the Leningrad region, across the Baltic Sea to Germany in the Greifswald area close to the exit point of Nord Stream 1. There, it connects with the existing OPAL pipeline running across the eastern part of Germany to the Czech Republic. The TurkStream pipeline starts from Russkaya compressor station near Anapa in Russia's Krasnodar region, crossing the Black Sea to the receiving terminal at Kiyıköy in Turkey. It consists of two lines with a capacity of 15 bcm/y each. The first line is already in operation, delivering 15 bcm/y of gas to Turkey for its internal needs. The second line is designed to run from Turkey to Bulgaria, across Serbia to Hungary and Slovakia. Both pipelines, the Nord Stream 2 and the second line of the TurkStream, have been subject to

⁵⁴ Jeffrey Mankoff, *Russian Foreign Policy-The return of Great Power politics*. (Lanham: Rowman & Littlefield, 2012), 2-6

sanctions by the United States through the 2020 National Defence Authorization Act.⁵⁵ Washington sees the two projects as part of Kremlin’s energy policy aiming to create national and regional dependence on Russian energy supplies and leverage this dependence to exert an inappropriate level of political, economic, and military influence in Europe.

Figure 8. Operating and proposed Russian gas pipelines in Europe



Source: European Political Strategy Center
(with additions on the original map regarding the proposed TurkStream line 2)

Observing the map,⁵⁶ with the combined routes of Nord Stream 2 and the TurkStream, reveals that the countries they enclose are identical to the limits of the former Eastern Bloc that was under Russian influence before the fall of USSR. Russian security objectives include creating

⁵⁵ “The future of Nord Stream 2 and TurkStream: The impact of sanctions legislation”, Atlantic Council, accessed February 2, 2020, <https://www.atlanticcouncil.org/event/the-future-of-nord-stream-2-and-turkstream-the-impact-of-sanctions-legislation/>

⁵⁶ “Nord Stream 2 - Divide et Impera Again?”, European Political Strategy Center, accessed May 5, 2020, <https://euagenda.eu/upload/publications/untitled-135832-ea.pdf>.

a buffer zone against the pressure Kremlin feels it faces from NATO in Europe. The perceived need to recreate a buffer zone at Russia's borders against the West has pervaded Russia's leadership since the early 1990s.⁵⁷ It needs to be mentioned that Vladimir Putin characterized the fragmentation of the Soviet Union, "the greatest geopolitical catastrophe of the 20th century".⁵⁸ The above analysis leads to the realization that in regard to the regional subsystems of SE Europe and the Eastern Mediterranean, Russia's energy interests relate primarily with the development of the TurkStream pipeline. Consequently, Kremlin's efforts on the issue focus on the construction of the afore-mentioned second line passing through Bulgaria and Serbia to the rest of Europe. Besides securing its influence over the European markets, the pipeline enhances Russia's position in Bulgaria and Serbia. The pipeline's 15 bcm/y capacity offers an abundance of cheap Russian gas flowing through the Balkans, thus rendering any competitive gas project in the area economically non-viable. It needs to be noted that the combined natural gas demand in Bulgaria, Serbia, North Macedonia, Albania, Bosnia and Herzegovina, and Montenegro is less than 6 bcm/y.⁵⁹

Traditionally, sales of Russian natural gas include the commitment through long-term bilateral contracts between Gazprom (the main Russian state-owned gas producer company) and the interested local providers in each country. These contracts usually include periods of 25 to 30 years as well as various clauses on the minimum purchase volumes ("take or pay" clause) or the limited ability of the buyer to resell the purchased gas (destination clause).⁶⁰ Sales through the TurkStream pipeline have the ability to easily meet gas demand in these Balkan countries and cover the capacity of their internal gas networks. Such a development leaves no capacity available for a possible influx of gas originating from other sources. Thus, through the development of the TurkStream pipeline, energy installations in Greece such as the TAP pipeline, the IGB interconnector, the Alexandroupolis FSRU, the Revithousa LNG Terminal and the EastMed pipeline, are facing limited capacity availability towards the Balkan route.

⁵⁷ "Russia's Design in The Black Sea: Extending the Buffer Zone", Center for Strategic and International Studies, June 28, 2017, <https://www.csis.org/analysis/russias-design-black-sea-extending-buffer-zone>.

⁵⁸ "Putin: Soviet collapse a genuine tragedy" NBC news, April 25, 2005, http://www.nbcnews.com/id/7632057/ns/world_news/t/putin-soviet-collapse-genuine-tragedy/#.Xh7UJCNS-Mo.

⁵⁹ "Towards a Balkan gas hub: the interplay between pipeline gas, LNG and renewable energy in South East Europe", Oxford Institute for Energy Studies, February 2017, <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2017/02/Towards-a-Balkan-gas-hub-NG-115.pdf>.

⁶⁰ Vavilov Andrej Petrovič. *Gazprom: An Energy Giant and Its Challenges in Europe*. (Houndmills: Palgrave Macmillan, 2015), 160-162.

With the TurkStream, the Kremlin essentially blocks the access for the US, or Eastern Mediterranean natural gas to the Balkans and to the route leading up to Ukraine. The challenge the TurkStream pipeline faces is that passing through Bulgaria, an EU Member State, it needs to comply with the European energy regulation framework. This requires changes in the access offered to third parties that want to sell gas through the pipeline, namely the “Third Party Access” principal included in EU’s Third Energy Package, as well as adaptations to the gas contracts with domestic providers where the EU regulatory framework includes Over-the-Counter (OTC) bilateral contracts primarily negotiated in an Energy Exchange platform.⁶¹ From the above analysis it is demonstrated that overall, Russian energy interests in the regional subsystems under examination have a three-dimensional objective: To maintain the sales of Russian gas to western Europe through alternative-to-Ukraine routes, to assert and strengthen Russian influence in the Balkans, and to avert and disrupt competitive energy systems. All three dimensions are in a direct collision to Greek and US strategic interests in the area as well as with EU’s objectives regarding its energy security and the liberalization of the European energy sector.

5.3 Israel

Israel’s strategic interests are linked directly to the most fundamental of a state’s objectives: the very survival of the state and its citizens. The state of Israel has had to deter and confront both tactical armies and irregular armed and terrorist groups for the most part of its existence as a state. Its security objectives are therefore focused intensively both on external and internal threats. It’s strategy has been based on two starting hypotheses, the first being that the Arab world was resolutely hostile toward Israel and the second that Israel could not afford to lose a single war, as defeat would mean its disappearance.⁶² It’s primary security goal has therefore been the deterrence of aggressiveness from its neighbouring Arab states as well as Iran, followed by robust citizen protection and the fight against insurgency groups and terrorist attacks on its grounds. The Israeli security policy determines that this can be achieved through the principle of self-help, primarily through internal efforts and secondary through external efforts.⁶³

⁶¹ “Questions and Answers on the third legislative package for an internal EU gas and electricity market”, European Commission memo, March 2, 2011, https://ec.europa.eu/commission/presscorner/detail/en/MEMO_11_125

⁶² Samy Cohen, *Israel’s Asymmetric Wars*, (New York: Palgrave Macmillan, 2010), 27-42.

⁶³ Lenore G. Martin, “Conceptualizing security in the Middle East: Israel and a Palestinian state” in *Redefining security in the Middle East*, eds. T. A. Jacoby and B.E. Sasley, (Manchester: Manchester University Press, 2002) 23-40.

Besides self-help, Israel's grand strategy also included elements of regional alliance-building efforts, through the so-called "Periphery Doctrine" conceived by Israeli prime minister David Ben Gurion since 1957. According to the periphery doctrine, Israel, in its efforts to counter Arab hostility, could seek cooperation and security relations with regional actors and potential allies - whether it being states or peoples-. Although this side of Israeli grand strategy seemed to fade out during the '80s and '90s, the periphery doctrine seems to reappear after 2010 in light of the need to confront threats for Israel's security deriving from the Arab Spring and the rise of Islamic Fundamentalism.⁶⁴ Israel's energy interests are largely linked to the exploration of its significant hydrocarbons potential after a series of discoveries in Israeli EEZ in the Levantine Basin in the early 2000s.

For Israel, the Levantine Basin started showing its real potential in 1999 with the announcement by the US-based company Noble Energy of the discovery of the Tamar field. Tamar is an offshore gas field located approximately 80km west of the Israeli city of Haifa in water depths of 1700m and with proven reserves of 220 bcm of natural gas. The main source of Israeli hydrocarbons potential though, is the Leviathan field. It is located 50km south-west of Tamar and 130km west of Haifa in water depths of 1500 meters. Its discovery was announced in December 2010. The field is operated by Noble Energy, as well as the Israeli Delek Drilling and Avner Oil and has proven reserves of 620 bcm of natural gas. According to a Stratfor analysis, the annual output capacity of Leviathan is estimated at 22bcm/y, while Tamar's capacity reaches 20bcm/y. The combined annual capacity of Tamar and Leviathan fields reaches 42bcm/y, thus drastically transforming the country to an energy-autonomous state with a strong gas export potential. In 2017 Israel's natural gas consumption peaked at 10,5 bcm/y leaving a margin of more than 30bcm/y for exports.⁶⁵

Israel's gas capacity offers two distinct advantages to the country. Primarily, it drastically improves the country's overall balance of trade (exports minus imports) and therefore, its current account and balance of payments accounts. The country gains by a lower outflow of payments for energy imports, high inflow of income from energy exports as well as higher capital inflow for Foreign Direct Investments (FDI) in the Israeli energy sector. Secondary, Israel's newly found gas capacity, presents an opportunity to further strengthen its position in the international system, by building close energy-related trade and political relationships on a regional level. The

⁶⁴ Joseph Alpher, *Periphery: Israel's Search for Middle East Allies*. (Lanham: Rowman & Littlefield, 2015), 4-9

⁶⁵ "Domestic Demand", Israel Ministry of Energy, accessed January 13, 2020, <http://www.energy-sea.gov.il/English-Site/Pages/Gas%20Markets/Natural-Gas-Domestic-Demand-.aspx>.

transportation channels chosen for the exports of Israeli natural gas can carry an impact to the balance of power in the Eastern Mediterranean; therefore Israel's energy objectives and interests are a critical factor for most of the international actors in the Eastern Mediterranean sub-system. All of the options for the export transportation channels of Israeli gas lead to higher levels of political power on a regional level. However, there are distinct differentiations on the acquired levels of power between the selected options. The option for a Cypriot LNG plant or the EastMed pipeline maximizes Israel's power levels since they bring an uninterrupted flow of Israeli gas to the European markets. Tel Aviv's bilateral relations with Athens and Nicosia are free of political tensions and pose a minimum danger of interdependence issues with Greece and Cyprus. In the case of exports towards the Egyptian LNG plants, Tel Aviv has to take into consideration its turbulent bilateral relations with Cairo in the past. While currently, bilateral relations seem stable, the overall fluctuant political environment in Egypt could pose a threat to Israeli exports in the future. The possibility of interdependence with Egypt limits the levels of energy-related political power for Israel.

Analysed through the definition for the strategic elements of energy projects provided in Chapter 2, Israel's energy objectives carry significant strategic value primarily due to their contribution to the application of the self-help through internal efforts principal. The significant increase in gas-related revenue for the state budget enhances -in turn- its defence budget and the country's ability to project and apply power within -and outside- its borders in order to meet its security objectives. On a secondary level, Israel's afore-mentioned energy interests can also contribute to its recently regenerated periphery doctrine. A set of energy-related alliances could contribute to Israel's strategic objectives by enhancing its political influence on a regional level.

Recent developments like the Eastern Mediterranean Gas Forum represent such opportunities. With its members including Cyprus, Egypt, Israel, Greece, Italy, and Jordan, and requests from France to join and the US to become a permanent observer, it is an initiative that although energy-related, carries significant strategic potential.⁶⁶ Similarly, Israel's participation in the EastMed natural gas pipeline, with the signing of an intergovernmental agreement between Israel, Cyprus, and Greece, fall under the same category.⁶⁷ However important the periphery doctrine might be for Israel, it has to be noted that, as shown earlier, it does not constitute a basic

⁶⁶ "France asks to join Eastern Mediterranean Gas Forum", Reuters, January 16, 2020, <https://www.reuters.com/article/us-egypt-gas/france-asks-to-join-eastern-mediterranean-gas-forum-idUSKBN1ZF1V2>

⁶⁷ "EU welcomes EastMed gas pipe deal as 'one option' to strengthen energy security", EURACTIV, January 3, 2020, <https://www.euractiv.com/section/energy/news/eu-welcomes-eastmed-deal-but-highlights-further-cost-benefit-analysis/>

strategic objective for the country. For Israel, primary and -by far- more influential, is the principle of self-help. This leads to the conclusion that on the energy sector, Israel's interests prioritize securing energy sales -either for domestic consumption or exports- over building energy-related alliances.

5.4 Egypt

Egypt's primary security goals are linked to internal security and the minimization of uprising threats with the potential to destabilize the country. Threats to internal security span from countering religious extremism and terrorism to addressing strictly economic issues like unemployment and fiscal deficit and tackling social challenges including the population boom and poverty. Besides internal security and stability, Egypt's strategic agenda includes preserving and promoting its central position in the Arab world. Furthermore, it includes objectives related to enhancing national empowerment through the projection of power on a regional level in the north (regarding Eastern Mediterranean energy sources), the south (regarding water issues with Sudan and Ethiopia), and the east (regarding territorial issues in the Red Sea, primarily with Sudan). To achieve its strategic objectives, Egypt seeks to maximize its self-help potential both by internal and external balancing efforts.

Regarding internal balancing, Egypt is relying primarily to its energy potential to generate a steady source of income that can then be directed to boost economic growth, support social reforms, and therefore sustain internal stability. In a 2017 report, the European Bank for Reconstruction and Development (EBDR) underlined that Egypt's rapid population growth exerted significant pressure on resources and public services and estimated that in order to address the country's high unemployment rate, Egypt would require an average annual GDP growth rate of 4% just to absorb the new entrants into the working force.⁶⁸ Efforts in consolidating the fiscal deficit, primarily through reforms in its prior extensive subsidy policies, exert pressures in social stability that needs to be balanced through boosting economic activity and the creation of new jobs.

Regarding external balancing, Egypt promotes re-strengthening of its ties with the US by facilitating the movement of U.S. military assets across the region through the preferential passage of the Suez Canal and overflights of Egypt's territory. Furthermore, Cairo aligns with Washington's worries regarding the rise of Iran and its support of terrorism through foreign

⁶⁸ "Strategy for Egypt", EBDR, accessed March 15, 2020, <https://www.ebrd.com/where-we-are/egypt/overview.html>.

proxies, and declares its resolve in deterring threats from the expansion of Islamic extremism and terrorism.⁶⁹ The perception of Iran and radical Islamist terror organizations as a threat, offers common ground for Egypt also with Israel, with the two countries moving towards a defence-strategic cooperation since President Abdel Fatah al-Sisi's rise to power in 2014. Although relations between the two countries are far from being normalized, they seem to have found a base for cooperation primarily through the promotion of common energy-related interests. Egypt's energy projects in the Eastern Mediterranean fulfil all three of the criteria necessary to attribute strategic value to them. The development of the Zohr field, the largest gas field currently discovered in the Levantine basin, contributes in maximizing Egypt's share of power in the system, generate significant change in the balance of power on a regional level and enhances Egypt's self-help efforts through both internal and external balancing. The total proven reserves of the Zohr gas field is approximately 850bcm.⁷⁰ According to a Stratfor analysis, the annual output capacity of the Zohr field is estimated at 28bcm/y.⁷¹

The tremendous potential of the Zohr field offers Egypt the ability to boost its income from natural gas sales, thus vastly contributing to the country's budget and its efforts to support internal stability and growth. Furthermore, the existence of two Egyptian LNG liquefaction plants in Idku and Damietta, the only export infrastructure in place that can receive any volumes of natural gas from the Levantine Basin, offers a combined export capacity that reaches 15 bcm/y.⁷² This infrastructure offers Egypt the ability to advance its external balancing efforts by being the centre of energy exports cooperation in the region. Egypt signed an agreement in 2018 to build an undersea natural gas pipeline from the Cypriot Aphrodite gas field to the liquefaction plants in Egypt. Cypriot authorities said natural gas would begin being extracted in 2025, with estimated earnings of 9,3 billion euros over an 18-year period.⁷³ The same year (2018), Egypt signed a deal with Israel where a private firm in Egypt, Dolphinus Holdings, will purchase 85

⁶⁹ "Egypt and America: 5 Things You Need to Know", Foreign Policy, accessed March 15, 2020, <https://foreignpolicy.com/sponsored/egypt-and-america-5-things-you-need-to-know/>.

⁷⁰ "Eni discovers a supergiant gas field in the Egyptian offshore, the largest ever found in the Mediterranean Sea", ENI, August 30, 2015, https://www.eni.com/en_IT/media/2015/08/eni-discovers-a-supergiant-gas-field-in-the-egyptian-offshore-the-largest-ever-found-in-the-mediterranean-sea.

⁷¹ "Egypt: The Eastern Mediterranean's Next Natural Gas Hub?", Stratfor, September 5, 2016, <https://www.stratfor.com/analysis/egypt-eastern-mediterraneans-next-natural-gas-hub>.

⁷² "Idku LNG plant reaches full export capacity for first time in six years", Energy Egypt, accessed March 15, 2020, <https://energyegypt.net/idku-lng-plant-reaches-full-export-capacity-for-first-time-in-six-years/>.

⁷³ "Cyprus signs deal for offshore gas concession", Reuters, November 7, 2019, <https://www.reuters.com/article/us-cyprus-energy-gas/cyprus-signs-deal-for-offshore-gas-concession-idUSKBN1XH1ZK>.

bcm of gas, worth an estimated \$19,5 billion, from Israel's Leviathan and Tamar offshore fields over 15 years.

Overall energy cooperation in the Eastern Mediterranean has been materialised through the East Med Gas Forum (EMGF) foundation charter. The platform for East Mediterranean natural gas cooperation has been signed early in 2020 by Egypt, Cyprus, Greece, Israel, Italy, Jordan and the Palestinian Authority, and signed in Cairo, with the Egyptian capital being the headquarters of the forum.⁷⁴ Besides the afore-mentioned deals signed with Israel and Cyprus, EMGF is built to also promote the construction of the EastMed pipeline, a 2,000km pipeline planned to transfer up to 12 bcm/y from offshore gas reserves between Israel and Cyprus to Greece, and then onto the EU, that when completed is expected to provide around 10% of the EU's natural gas needs. The above analysis reveals the centre strategic role energy infrastructure has for Egypt in its efforts to promote its overall security interests. As will be analysed further in this study, the strategic value of existing and planned energy projects in the Eastern Mediterranean offers the potential of an alignment of Egypt's energy and strategic interests with Greece, the EU, and the United States.

5.5. Turkey

According to the Turkish Ministry of Foreign Affairs, Turkey perceives itself as “a key regional security player in Europe, the Balkans, the Caucasus, the Middle East, the Mediterranean and the Black Sea regions and beyond”. Furthermore, the Turkish government in the official webpage of its MfA declares that “in the last years, Turkey has also demonstrated its capacity to act as a global actor beyond these regions”.⁷⁵ Such official statements are descriptive of the self-image that drives the Turkish foreign policy in the last fifteen years and determines the country's security objectives. The ideology of the governing AKP party, shaped by a Turkish neo-Islamism, fuels the country's clear, revisionist goals for the reaffirmation of an Ottoman-inspired Turkish presence in Europe, the Balkans, the Middle East, and the Mediterranean. As a result, Turkey is arguing for a revision of the 1923 Treaty of Lausanne with Greece, presents claims over Greece's seabed in the Aegean and the Greek and Cypriot EEZ in the Eastern Mediterranean, supports the Islamic-inspired rebels in Syria and invades

⁷⁴ “East Med Gas Forum makes Cairo HQ”, New Europe, January 17, 2020, <https://www.neweurope.eu/article/east-med-gas-forum-makes-cairo-hq/>.

⁷⁵ “Turkey's Enterprising and Humanitarian Foreign Policy”, Republic of Turkey - Ministry of Foreign Affairs, accessed January 15, 2020, <http://www.mfa.gov.tr/synopsis-of-the-turkish-foreign-policy.en.mfa>.

part of the country, clashes politically with Saudi Arabia, and offers military support to the Libyan GNA led by Fayez al-Sarraj, with whom it also signed a maritime delimitation agreement by the end of 2019. All Turkey's security objectives and the tools used to achieve them can, therefore, be linked and examined under the overall revisionist aspiration of the Turkish government as formulated by its president Recep Tayyip Erdogan that rules the country for seventeen consecutive years since 2003.

Turkey's self-image as "a key regional security player in Europe, the Balkans, the Caucasus, the Middle East, the Mediterranean and the Black Sea regions and beyond" leads its efforts to primarily project power in all the afore-mentioned regional sub-systems and consequently to exert influence with either military or political means. Energy can be listed among the non-military tools Ankara utilizes to achieve its security goals, although often military force is used to support its energy objectives. Examining the Turkish self-image regarding energy, we can see that according to the Turkish Ministry of Energy, "Turkey is playing the role of a powerful regional actor, with a strategic geographical position between producer countries and consumer countries" and "Turkey, with its indispensable position on ensuring energy security of Europe, joined the Energy Community".⁷⁶ The above stipulates Turkey's overall objective regarding energy, which is to place itself as an important energy hub that will be crucial and "indispensable" for both producer and consumer countries with a particular focus on the EU.

However crucial, Turkey's objective to become an energy hub is trumped by the country's high dependency on energy imports and the low diversification of its energy sources. According to Eurostat, Turkey's Energy Dependency Rate reached 77,1% in 2017.⁷⁷ Furthermore, according to the US Energy Information Administration, already since 2015, Turkey imported more than 90% of its total liquid fuels consumption, with more than 60% of crude supply originating from Iraq and Iran, while 56% of its natural gas consumption originates from Russia and more than 80% of its natural gas is imported via pipelines.⁷⁸ High energy dependency rate, combined with low diversification of sources, lead to Turkey's overall high energy dependency from Russia. This, in turn, leads to high vulnerability to Russian

⁷⁶ "Transit Pipelines and Projects", Republic of Turkey - Ministry of Energy and Natural Resources, accessed January 15, 2020, <https://www.enerji.gov.tr/en-US/Pages/Transit-Pipelines-and-Projects>.

⁷⁷ "Net imports of energy and energy dependency, 2007, 2012 and 2017", Eurostat, accessed January 18, 2020, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Net_imports_of_energy_and_energy_dependency,_2007,_2012_and_2017_CPC19.png.

⁷⁸ "Country Analysis Brief: Turkey", US Energy Information Administration, February 2, 2017, https://www.eia.gov/international/content/analysis/countries_long/Turkey/turkey.pdf.

political pressure exerted towards Ankara. Turkey finds itself in a difficult predicament regarding its energy status since its goals to become an energy hub and lower its dependency from Russian energy sources collides with its need to sustain an adequate supply of energy currently provided primarily from Russia. When combining Turkey's security and energy objectives, it is apparent that Ankara has -until now- chosen to achieve its aspiration of becoming an energy hub through the facilitation of gas pipelines from Russia (TurkStream) and the Caspian sea (TANAP) towards the EU, and by attempting to create stronger relations with Libya and Iran regarding the supply of crude oil.

Regarding natural gas, in particular, Turkey cooperates with Russia for the promotion of the second line of the TurkStream pipeline, aspiring to be the "indispensable" link for the supply of natural gas in the EU and the Balkans, thus supporting its security goals of projection of power and influence on a regional level. Transit gas pipelines like the TurkStream and the TANAP offer strategic value to Turkey only in regard to its external balancing efforts since they do not offer significant financial revenues to the state. However, while the TANAP pipeline aligns Turkey's energy interests with EU's and USA's strategic interests, the vivid promotion of the TurkStream pipeline collides with both EU's efforts for energy diversification and Washington's security objectives regarding Russia's influence over Europe and the Balkans. Furthermore, Turkish aggression towards Cyprus regarding Nicosia's efforts to utilize its energy potential in cooperation with Israel and Egypt brings Ankara in direct collision with Israeli and Egyptian energy and strategic interest. Given the alignment of overall US strategic interests with Israel and Egypt regarding the Middle East, this collision leads to a further collision between US and Turkey regarding their energy-related security interests in the Eastern Mediterranean.

5.6 Cyprus

The primary security objectives of the Republic of Cyprus relates to reaching a final and fair solution to the "Cyprus Issue" of Turkish invasion and occupation, as well as to the deterrence of Turkish aggressiveness in the Cypriot EEZ. Ever since the 1974 Turkish invasion in the Republic of Cyprus, the Cypriot state faces a direct and continuous threat to its sovereignty. Continuous Turkish aggression has escalated in the past years due to the newly discovered natural gas potential within Cypriot EEZ. Continuous aggression by Turkey is also manifested through illegal Turkish activities in the Cypriot EEZ via Turkish drilling and exploration activities as well as Turkish harassment of legal exploration activities commissioned

by the Cypriot government in its offshore gas fields. Cyprus thus faces serious security threats in its territorial and political sovereignty. The Cypriot government's security objective is therefore focused in deterring the ongoing Turkish threat to its sovereignty and working towards a fair solution of the occupation issue according to international law and the UN Resolutions on the issue. Both fundamental Cypriot security goals are to be pursued primarily through external efforts (alliances and external support). Energy developments in Cyprus, carry the potential to offer the Republic with the tools that can significantly assist in its efforts to achieve the aforementioned security objectives.

Currently, Cyprus is almost 100% depended on energy imports, primarily oil, to cover its energy needs. Efforts for a significant development of its renewable energy sources, combined with planned projects for LNG imports, offer the potential to diversify the county's energy mix and significantly reduce its dependence from oil. However, Cyprus shows great potential to improve its energy status through the development of its offshore natural gas potential. During the last decade discoveries of new gas fields in the Cypriot EEZ raised expectations for a complete transformation of the Cypriot energy sector and a significant boost in state revenues from the exploitation of the newly discovered gas fields. Nevertheless, until now, gas discoveries in the Cypriot EEZ offer a picture of relatively small volumes of gas that are distributed over several fragmented offshore gas fields. Hopes for the discovery of a big gas field similar to the neighbouring Egyptian Zohr field have proven futile. The only gas field with proven, extractable and economically viable gas volumes so far, is the Aphrodite gas field discovered by the US-based company Noble Energy that has discovered more than 1.100 bcm of natural gas resources overall in the Levantine Basin, including its discoveries in the Cypriot EEZ. The Aphrodite gas field is an offshore gas field in Cyprus' EEZ, located off the southern coast of Cyprus at the exploratory drilling block 12. Block 12 is believed to hold approximately 170bcm of natural gas. Noble Energy announced its discovery in December 2011.

For Cyprus, the crucial issue in relation to its natural gas reserves is whether they will be distributed alone or in combination with Israeli and possibly Egyptian gas. The volume of proven gas reserves makes all of its distribution options marginally financially viable. If Nicosia manages to distribute its resources together with Israel, via the EastMed pipeline or via a natural gas liquefaction terminal built on Cypriot ground, it can maximize its levels of power. The option for distribution of Cypriot gas through the Egyptian LNG plants is also positive for Nicosia. Cyprus has been working towards both the cooperation with Israel and Egypt on these options. As mentioned above, Cyprus signed an agreement in 2018 to build an undersea natural gas pipeline from the Cypriot Aphrodite gas field to the liquefaction plants in Egypt. Cypriot

authorities said natural gas would start being extracted in 2025, with estimated earnings of 9,3 billion euros over an 18-year period. Similarly, Cyprus joined the overall energy cooperation in the Eastern Mediterranean through the East Med Gas Forum foundation charter and through the signing early in 2020 of the deal for the EastMed gas pipeline with Israel and Greece.⁷⁹ Examined under the Framework for Strategic Energy Projects, determined in Chapter 2 of this study, it is evident that the planned energy projects in Cyprus carry significant strategic value for the Cypriot Republic. Both the EastMed pipeline and the Cyprus-Egypt pipeline can contribute in maximizing Cyprus' share of power in the system, provide a significant change in the balance of power in the regional subsystem, and enhance Cyprus' self-help efforts primarily through external balancing since they offer the opportunity to build strong, common interests with Israel and Egypt and assist EU's efforts in diversifying its energy sources.

5.7 The Balkans

The regional subsystem of the Western Balkans, composed of Albania, Bosnia & Herzegovina, Croatia, North Macedonia, Montenegro, Serbia, and Kosovo, faces long-enduring security and energy challenges. Conflicts following the break-up of the former Yugoslavia in the 1990s left most of its energy infrastructure damaged, while the ongoing political turmoil discouraged investments in new energy infrastructure. The region suffers from the lack of coherent policies to address energy security, diversification of energy sources and energy poverty.

The wider Balkan region, including its EU Member States, is considered by the EU as essential to the overall integration of European infrastructure networks. Overall, in the Balkans region, excluding the EU MS of Greece, Bulgaria and Romania, total power generation capacity shares consist of approximately 48% share for lignite capacity, 46% for hydropower, 4% for gas, and 2% for other renewable energy sources. All the Western Balkans countries have committed to increasing their share of renewable energy by 2030 to reach between 25 and 40 per cent of their energy mix, as part of their obligations under the Energy Community Treaty. However, this has not been achieved.

⁷⁹ "Greece, Israel, Cyprus sign EastMed gas pipeline deal", Reuters, January 2, 2020, <https://www.reuters.com/article/us-greece-cyprus-israel-pipeline/greece-israel-cyprus-sign-eastmed-gas-pipeline-deal-idUSKBN1Z10R5>.

The current energy situation per country in the region is as follows:

- **Albania** is 100% dependent on hydropower for its electricity supply. This offers an advantage in decarbonising its electricity sector but also makes the country highly vulnerable to climate change disruptions. It makes the country also constantly depended on electricity imports.
- **Montenegro**'s electricity needs are mainly met by hydropower (approx. 70%) and lignite (25%) while the rest is small scale wind and solar.
- **Bosnia-Herzegovina** has approximately 40% of its electricity generation capacity supplied by hydropower, and 60% from lignite power plants.
- **Croatia** has approximately 55% of domestically generated electricity coming from hydropower, 20% from coal, 15% from oil/gas, and less than 10% from other RES.
- **North Macedonia** relies for its electricity production predominantly on low-grade lignite (approx. 55% of electricity production) and hydropower (25%) and is dependent on electricity imports.
- **Kosovo**'s electricity generation is 98% dependent on old lignite plants that are heavily polluting. It has 2% Hydro and almost no other RES.
- **Serbia**'s electricity production relies approximately 70% on coal, while the remaining 30% is generated in hydropower plants.

Regarding the EU MS in the region:

- **Greece**'s electricity generation mix relies 30% on lignite, 40% on gas (& oil), 15% on hydro and 15% on other RES and other sources.
- **Bulgaria** has two main pillars in its electricity-producing sector: coal and nuclear. Coal provides approximately 50% of the electricity in the country and nuclear another 35%. The rest is covered by renewables dominated by large hydro and followed by solar and wind generation.
- **Romania**'s electricity mix is rather balanced, with coal, hydropower, natural gas, nuclear energy, and wind power having comparable shares of capacity and power generation.

For the Western Balkans in particular, every winter, towns across the region face similar problems regarding heavily polluted air and depletion of the environment. Since 2013 the European Investment Bank, the European Bank for Reconstruction and Development and the World Bank stopped financing new coal power plants. Since then, most planned power plants are being financed primarily by Chinese state banks. The fragile political and economic

environment in the region exposes it to influence also from Russia with the Kremlin seeking to exert influence over economic, political, or security structures with the objective to undermine or delay the Western Balkans prospects for integration into the EU and NATO.⁸⁰

For Moscow, energy offers the multi-dimensional platform to exert such influence in the area. With its efforts to construct the South Stream gas pipeline (planned to deliver Russian gas across the Black Sea into Bulgaria, Greece, Hungary, Serbia, Slovenia and Austria) failing due to its inability to comply with EU's regulatory framework, Kremlin's energy objectives are now promoted via the TurkStream gas pipeline. The TurkStream pipeline starts from Russkaya compressor station near Anapa in Russia's Krasnodar region and crosses the Black Sea to the receiving terminal at Kiyıköy in Turkey. It consists of two lines with a capacity of 15 bcm/y each. The first line is already in operation, delivering 15 bcm/y of gas to Turkey. The second line is designed to run from Turkey to Bulgaria, across Serbia to Hungary and Slovakia with a capacity of another 15bcm/y of gas. Besides natural gas, Moscow furthers its objectives via investments in critical energy infrastructure with Russian firms acquiring controlling shares in electricity generation companies, nuclear power projects, refineries, and gasoline distribution networks.

Similarly to Russian influence, the Balkans are exposed to Chinese efforts to acquire and exert influence in the region. Over the last decade, Chinese foreign direct investments (FDI), regarding privatisation or acquisition of energy infrastructure in production and networks, have been advancing at an increasing rate. Primarily part of China's Belt and Road Initiative, such investments involve Chinese State-owned Enterprises. With EU and China holding top global trade shares and competing on the global trade and technology scene, such flow of investments into critical energy infrastructure and power generation has raised considerable concern over their potential security implications on a national and supranational level. Currently, Chinese state-owned companies hold shares in the Greek electricity TSO ADMIE, and own shares and finance existing and planned coal-fired power plants in Bosnia and Herzegovina, Kosovo, and Serbia, as well as various other infrastructure in the region.

In March 2019, the European Commission in its Strategic Outlook in EU-China relations underlined that: "China is constructing coal-fired power stations in many countries; this undermines the global goals of the Paris Agreement".⁸¹ The above analysis underlines that

⁸⁰ Paul Stronski and Annie Himes, "Russia's Game in the Balkans", Carnegie Endowment, February 6, 2019, <https://carnegieendowment.org/2019/02/06/russia-s-game-in-balkans-pub-78235>.

⁸¹ "EU-China, A strategic outlook", European Commission, March 12, 2019, <https://ec.europa.eu/commission/sites/beta-political/files/communication-eu-china-a-strategic-outlook.pdf>.

the sensitive sub-system of the Balkans is placed in the middle of competing security objectives by major international actors, namely the EU, the US, Russia, and China. Energy flows and energy projects in the area are essential to the materialisation of these objectives. Their capacity to generate significant shifts in the balance of power on a regional level for all the involved parties, attribute concrete strategic value to most of the existing or planned energy projects in the wider Balkans region.

Chapter 6 - Alignment of Greek and US energy interests

Analysis of Greek and US strategic interests, combined with the existing strategic status of various regional stakeholders presented in the previous chapters of this study, reveals an area of ‘common ground’ where principal Greek security interests align with fundamental US security objectives in the sub-systems of South-Eastern Europe and the Eastern Mediterranean. Furthermore, the analysis has shown that the promotion and advancement of such security objectives can be achieved by both countries through the promotion of their energy policies on a regional level.

As analysed earlier in this study, Greece’s security objectives focus in deterring Turkey’s aggressiveness against changes of the territorial status quo, promoting a just and viable solution to the Cyprus problem and increasing its energy security status. These objectives are promoted primarily through external balancing efforts, by utilizing its position as a member of the EU and NATO and strengthening its alliances with other regional actors in the sub-systems of South-Eastern Europe and the Eastern Mediterranean. Regarding energy policy objectives, Greece strives to reduce dependency on energy imports primarily from Russia, enhance its diversification of energy suppliers and diversification of energy transportation routes, comply with EU commitments on CO2 emissions reduction and promote the function of market-based trading and pricing of energy resources.

Regarding the US, this study has revealed that the regional sub-systems of South-Eastern Europe and the Eastern Mediterranean carry the potential to function as a ‘frontier’, designated to deter and defend security threats to NATO’s eastern flank related to Russian and Chinese influence and Islamic terrorism. As regards to US energy objectives, the policy of ‘energy independence’ relates -among others- to US efforts in promoting exports of LNG to Europe and assisting US allies and partners in becoming more resilient against state actors that utilize energy for political coercion. US energy policy is thus set to support its allies in diversifying their energy sources, supplies, and energy routes, protect global energy infrastructure from cyber and physical threats and encourage them in developing their own, consistent with their national energy security needs, energy potential.

6.1 Common strategic objectives between Greece and the US

The comparison of Greek and -regional- US security and energy interests, reveals several points of conjunction where policies applied by one country to promote its own interests generate a positive effect for the other country's security and energy objectives and vice versa. These points of aligned interests are summarised below:

- i. Greece's efforts to diversify its energy mix lead to the promotion of LNG as an alternative to pipeline gas and therefore to policies that support existing and new LNG infrastructure in the country and the wider region. Such policies are aligned with US objectives in the region both in terms of boosting US LNG exports and in containing Russian influence in South-Eastern Europe. Respectively, US efforts to contain Russia's role in the Balkans lead to extended political support for US-based energy companies interested in participating in LNG projects in Greece and the wider region. Such support by the US increases the financial and business viability of these projects, thus improving the conditions for their materialisation in Greece.
- ii. Similarly to the energy mix, Greek (and EU) efforts to diversify the *routes* and *source* of energy imports, lead to policies that support the construction of gas pipelines from the Caspian and the Eastern Mediterranean to the EU. While aiming at increasing Greek energy security, such policies generate a positive effect in US efforts to lower the overall EU dependency from Russian gas. Respectively, US efforts to stop the construction of new Russian pipelines in the Balkans, generate a positive effect for Greek interests by protecting Greek-based energy projects from the competition that could be generated by new Russian gas pipelines in the region.
- iii. Greece's efforts to deter Turkish aggression and support Cyprus, are promoted on a regional level through the formation and enhancement of multi-layered alliances with other regional actors, i.e. Israel and Egypt. Such efforts align with US policies in assisting its allies and partners in addressing threats from rogue states (i.e. Iran) and Islamic terrorist groups. Respectively, US efforts to support its allies and partners in the Eastern Mediterranean in creating a 'frontier' against threats to US interests, generate a positive effect in Greece's external balancing policies.
- iv. Among Greece's vital security objectives is the necessity to protect Greek and Cypriot EEZ from Turkish aggression. In addition, Greek energy-related security objectives include, on the one hand, exploring its hydrocarbons offshore reserve potential and, on the other, supporting Cyprus' gas exploring activities and potential. Promoting these objectives lead

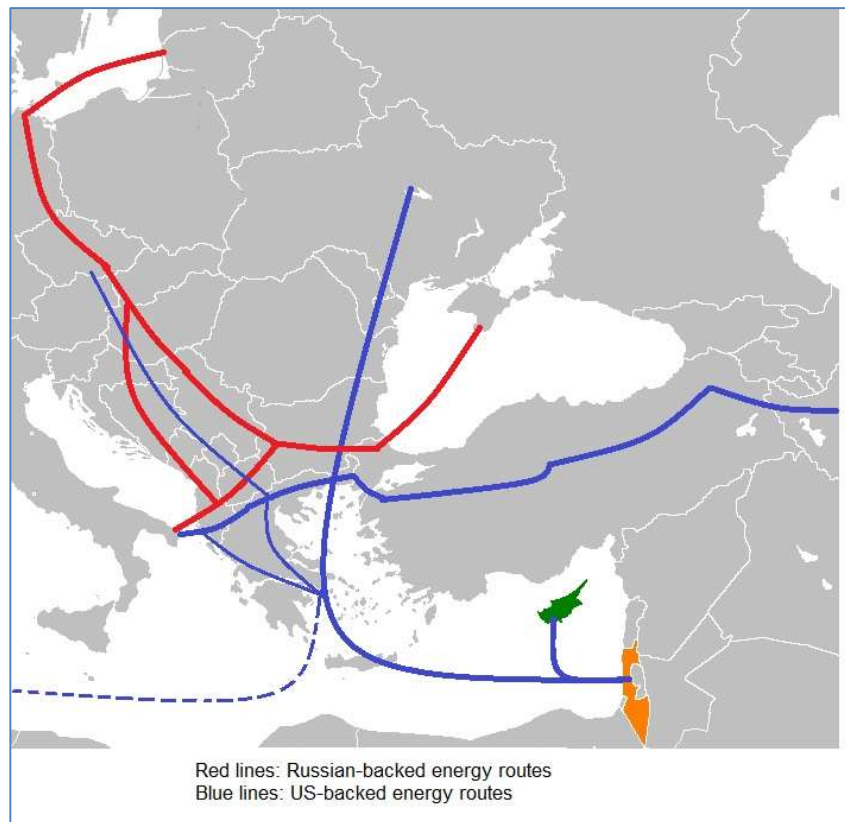
- to the establishment of exploration licencing rounds for offshore gas fields within the Greek and Cypriot EEZs. Such policies also bring Greek and US interests closer, since these licencing rounds attract major US-based energy companies that want to operate in the region.
- v. Greece's efforts regarding external balancing in the Balkans is materialized through the development of a series of energy projects designed to create new routes for natural gas from Greece to the EU via gas interconnectors in the Balkans. Such energy projects, while built to develop Greece's energy objectives, also assist US efforts in deterring Russian influence in the Balkans. Respectively, US efforts to support its NATO allies and partners in the Balkans in becoming more resilient against Russian and Chinese political influence, lead to extended political support and active business engagement for gas interconnectors linking Greece to the Balkans and further up to South-Eastern and Central Europe. Such support generates positive results for Greece's efforts to materialize its gas interconnectors towards the Balkans, thus advancing Greek energy policy and interests.
 - vi. In its effort to comply with national and EU targets regarding the reduction of CO2 emissions and develop a market-based trading and pricing system for energy, Greece is moving forward with the development of a Greek Energy Exchange. This effort aligns with the US objectives in shifting the ways that energy is traded in South-Eastern Europe, from long-term bilateral gas contacts with Russia to market-based spot and future contacts. Respectively, US efforts to intensify its LNG exports in the region and support LNG regasification terminals, enhance the volumes of non-Russian, non-pipeline gas traded in the Greek system, thus enhancing Greece's efforts in creating a well-functioning, Greek-based Energy Exchange market.

The alignment of Greek and US energy-related security objectives in the above conjunction points lead to a series of specific energy projects and energy infrastructure that are commonly supported and promoted by both Greece and the United States. These projects include the support of supply routes from the Caspian or the Eastern Mediterranean via the Trans Adriatic gas pipeline (TAP pipeline), the Interconnector Greece-Bulgaria (IGB pipeline), the Interconnector Bulgaria-Serbia (IBS pipeline) and the Eastern Mediterranean gas pipeline (EastMed pipeline). Furthermore, they include support of LNG imports against pipeline gas, through the existing Revithousa Terminal, the planned Alexandroupolis FSRU in Greece, and the potential Vasilikos LNG Train in Cyprus. The two countries also align in supporting Cyprus' exploration activities in the Cypriot EEZ. In addition, there is an alignment of interests about the containment of Line 2 of the TurkStream pipeline planned from Russia and Turkey

to run through the Balkans towards the EU. The afore-mentioned projects create a web of infrastructure in the regional sub-systems of Eastern Mediterranean and South-Eastern Europe that carries the capacity to promote both Greek and US energy-related security interests but also aligns with EU's objectives regarding its energy security as well as the security interests of other regional actors, i.e. Israel, Egypt, Cyprus, and most of the NATO-members in the Balkans.

This multi-alignment creates a unique opportunity for cooperation on a regional level, using energy as the 'connecting element' that can bring together state actors with different security and energy backgrounds and needs. This 'energy web' is also consistent with US policies in creating a line of 'frontier states' to deter Russian and Chinese influence in Europe as well as threats from Islamic terrorist groups. However, such an 'energy web' collides with Russia's objectives in creating an energy-related zone of Russian influence in Europe. As seen below in Figure 9, the two sets of energy projects, planned and supported by Russia and the US, are competing/colliding in the wider South-Eastern Europe sub-system.

Figure 9. Russian and US-backed energy routes in Europe



6.2 Energy projects that promote common Greek-US interests

The alignment in Greek and US energy objectives in the two sub-systems under examination can be observed in a series of energy projects commonly supported by both Greece and the United States. The vast majority of these projects are also supported by the EU as part of its Projects of Common Interest (PCIs) policy. PCIs are key cross-border infrastructure projects that link the energy systems of at least two EU Member States and carry the capacity to help the EU achieve its energy policy and climate objectives. In the last quarter of 2019, the European Commission released its 4th list of PCIs containing a total of 149 projects across the EU.⁸² The overwhelming majority of projects (100 projects), refers to electricity transmission and storage, while only 32 projects refer to gas. However, on a regional level, South-Eastern Europe and the Eastern Mediterranean involve proportionally a larger percentage of gas rather than electricity projects. In order to identify the projects where Greek and US energy-related security interests align, a series of PCIs in South-Eastern Europe and the Eastern Mediterranean will be examined under the Strategic Framework of Energy Projects (SFEP) presented in Chapter 2 of this study.

Under the SFEP, an energy project needs to meet at least one of three criteria in order to carry strategic properties for the stakeholders involved. In particular, under SFEP, energy projects are examined for their contribution in maximizing the stakeholder's share of power in the system, their ability to generate significant change in the balance of power in the system, and their capacity to enhance the stakeholder's self-help efforts through internal or external balancing. The following projects can be identified to carry strategic value both for Greece and the United States, as well as the European Union. It needs, however, to be noticed that some of these projects have been long-planned and proposed, so their final construction cannot be taken for granted. These projects include the Eastern Mediterranean "EastMed" gas pipeline, the Trans Adriatic Pipeline "TAP", the gas Interconnector Greece Bulgaria "IGB", the high voltage cable "EuroAsia Interconnector", the Alexandroupolis Floating Storage and Regasification Utility "Alexandroupolis FSRU", the Kavala Underground Gas Storage "Kavala UGS" facility, the "Revithousa" LNG regasification plant, and the gas Interconnector Greece-North Macedonia "IGNM".

⁸² "Annex VII, Union list of projects of common interest referred to in Article 3(4)", European Commission, October 31, 2019, https://ec.europa.eu/energy/sites/ener/files/c_2019_7772_1_annex.pdf

6.2.1 The Revithoussa LNG regasification plant

The Revithoussa LNG Terminal is located on the small island of Revithoussa,⁸³ 45 km west of Athens. The Terminal is one of the 25 LNG regasification terminals currently in operation among EU member states, and the only European LNG installation in the sub-systems of SE Europe and the Eastern Mediterranean.⁸⁴

Figure 10. The Revithoussa LNG Terminal in the Greek Natural Gas Transmission System



Source: DESFA

With an annual capacity of 5 bcm, the Revithoussa terminal is critical for Greece's energy security, taking into account that the country's consumption of natural gas reaches 4 bcm/y. In 2019, the Revithoussa Terminal accounted for 50% of total natural gas consumption, significantly reducing Greece's dependency from Russian gas and contributing to lower prices for natural gas and electricity production in the country.⁸⁵ Examined under the Strategic Framework of Energy Projects (SFEP) presented in Chapter 2 of this study, the Revithoussa Terminal proves to be an infrastructure of high strategic value for Greece, primarily by meeting the criterion of significant enhancement of the country's self-help efforts through internal balancing. Under the SFEP conditions, the terminal is of strategic value also for the United States. The boost of LNG share in Greece's natural gas consumption in 2019 included a substantial rise in the share of US LNG shipments delivered in the Revithoussa Terminal,

⁸³ "National Natural Gas Transmission System", DESFA, accessed April 11, 2020,

<https://www.desfa.gr/en/national-natural-gas-system/transmission>

⁸⁴ "Number of operational and planned liquefied natural gas (LNG) import terminals in Europe as of 2019 by country", Statista, accessed April 10, 2020, <https://www.statista.com/statistics/326008/lng-import-terminals-by-country-europe/>.

⁸⁵ "Το LNG ανέτρεψε τις ισορροπίες στην αγορά αερίου - Το 50% των εισαγωγών LNG πραγματοποιήθηκε από τη Mytilineos", Energypress.gr, February 3, 2020, <https://energypress.gr/news/lng-anetrepse-tis-isorropies-stin-agera-erioy-50-ton-eisagogon-lng-pragmatopoiithike-apo-ti>. (in Greek)

reaching 15% of the total amount of shipments for 2019. Furthermore, in the same year, the first shipments of US LNG headed towards Bulgaria arrived in Revithoussa, marking the end of Russian gas monopoly in Bulgaria.⁸⁶ For the United States, the Revithoussa Terminal meets the second of the condition in the SFEP since it has the capacity to generate significant change in the energy-related balance of power in the Balkans. Increased shares of US LNG in Greece, Bulgaria, and the Balkans flowing through the Revithoussa Terminal, leads to reduced vulnerability of US allies and partners from Russian energy-related political pressure, thus contributing to one of the fundamental US security objectives for the region. The Revithoussa Terminal is thus an installation where high alignment of Greek and US energy-related security interests is observed.

6.2.2 The Trans Adriatic Pipeline (TAP)

Part of the broader 'Southern Gas Corridor', TAP is a gas pipeline with an 11 bcm/y capacity, bringing Azeri gas to the EU via Georgia and Turkey and connecting Greece to Italy via Albania and the Adriatic Sea. The pipeline is expected to go into full operation by the end of 2020 assisting EU's diversification efforts and lowering its dependency from Russian gas.⁸⁷

Figure 11. Trans Adriatic Pipeline route



Source: TAP

⁸⁶ “Bulgaria makes first U.S. gas purchases with two LNG cargoes”, Reuters, May 31, 2019, <https://www.reuters.com/article/us-bulgaria-Ing-usa/bulgaria-in-first-u-s-gas-deals-buys-two-Ing-cargoes-idUSKCN1T1153>.

⁸⁷ “The big picture”, Trans Adriatic Pipeline, accessed April 22, 2020, <https://www.tap-ag.com/the-pipeline/the-big-picture>

Examined against the SFEP criteria, TAP carries strategic value both for Greece and the United States; however, such value seems limited. In particular, for both countries, the pipeline meets the second SFEP criterion, regarding its capacity to generate change in the Balance of Power in the regional sub-system of SE Europe. However, since the capacity of the pipeline is reserved primarily to transport gas through Greece and on to Albania and Italy, its effect on the security of supply in the Balkans is limited. Out of an 11 bcm/y capacity, only 1 bcm/y is designated to be distributed to the national gas grids of Greece and other Balkan countries. This element limits TAP's capacity to significantly enhance energy security in the region, thus limits the extent of the second SFEP criterion. In conclusion, TAP presents an alimant of Greek-US interests but within a limited spectrum of practical application in the region. However, plans to increase TAP's capacity in the future to 20 bcm/y through changes in the compressor stations, create conditions for significant improvement of energy security for the countries involved, thus contributing in a more meaningful way in a substantial change in the energy-related balance of power in the Balkans. In such an event, the existent alimant of Greek-US interests regarding the pipeline would be significantly strengthened.

6.2.3 The Interconnector Greece Bulgaria

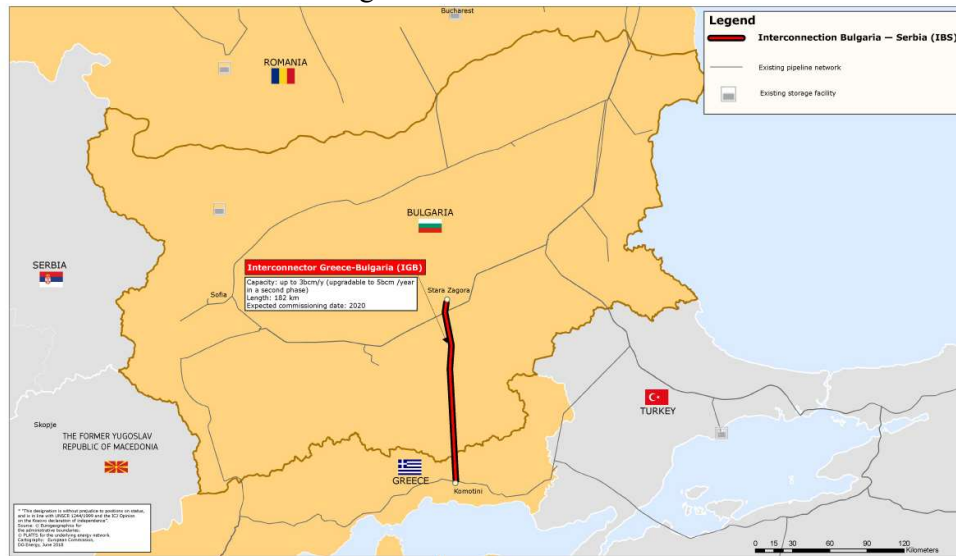
The IGB pipeline is a 182km-long natural gas Interconnector between Greece and Bulgaria currently under construction, that can bring natural gas from the TAP pipeline, the Greek national natural gas system, and the Alexandroupolis FSRU, to Bulgaria and thus further on to the Balkans and the rest of SE Europe.⁸⁸ The pipeline is constructed with a capacity of 3 bcm/y and the ability to be upgraded to a 5 bcm/y capacity and a reverse route function (Bulgaria-Greece) in the future. The IGB pipeline is included as a leading project in the CESEC initiative (Central and South-Eastern European gas Connectivity) and is a key project in EU's strategy for increased integration of gas markets between Greece-Bulgaria, Bulgaria-Romania, and Romania-Hungary.

The pipeline will be connected to the Greek Natural Gas Transmission System, so it can carry natural gas from the Revithoussa LNG Terminal to Bulgaria. Furthermore, the pipeline will be connected to the TAP pipeline so it will have access to the natural gas flowing from Azerbaijan, while it will also be connected to the planned FSRU project in Alexandroupolis in

⁸⁸ "Important impetus for integration of energy markets in South East Europe: Prime Ministers issue statement of support for Greece-Bulgaria gas interconnector", European Commission, June 29, 2018, https://ec.europa.eu/info/news/important-impetus-integration-energy-markets-south-east-europe-prime-ministers-issue-statement-support-greece-bulgaria-gas-interconnector-2018-jun-29_en.

Greece, thus gaining further access to LNG. In creating the base for gas supplies from LNG shipments and the Southern Corridor to reach Bulgaria and the rest of South-Eastern Europe and flow on to Central Europe, the IGB is one of the projects with the highest strategic value for Greece and the United States on a regional level.

Figure 12. The IGB route



Source: European Commission

Examined under the Strategic Framework of Energy Projects (SFEP), the IGB meets all three criteria for Greece as well as the second criterion for the United States. In particular, regarding Greece, the IGB pipeline contributes significantly in maximising its share of power in the Balkan sub-system (through the IGB, Greece becomes a valuable and critical energy supplier for the Balkan countries), it thus generates a significant change in the balance of power on a regional level, while it simultaneously enhances Greece’s self-help efforts both through internal balancing (economic output) and external balancing (stronger ties and cooperation between states).

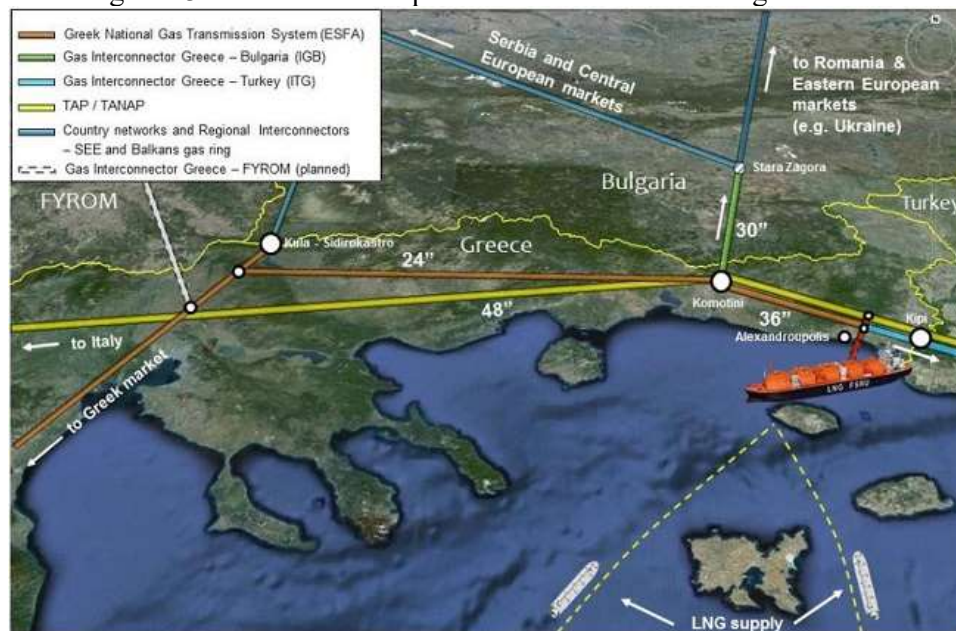
Regarding the US, the pipeline generates a significant change in the balance of power in the region since it carries the potential to effectively lower Russian and Chinese energy-related political influence on several US allies and partners in the region. As presented in Chapter 5 of this study, the security and energy challenges that most of the countries in the Balkans face, create conditions for political instability, economic stagnation, and vulnerability from external influence. By significantly improving the diversification of energy sources in the Balkans and by creating conditions for further integration of natural gas in the wider area, the IGB offers valuable assistance in deterring Russian political coercion in the Balkans as well as

Chinese advancements in critical energy infrastructure. Furthermore, by being the first connecting point for diversified gas sources in the region, the IGB is critical for the function of the rest of the planned gas interconnectors in the region. Without the IGB pipeline, LNG and Azeri gas cannot reach the rest of the Balkans and SE Europe. In conclusion, although the IGB is not considered as one of the “major” energy projects in the region, it is, however, carrying overwhelmingly significant strategic power both for Greece and the US. The pipeline is thus a critical point of alignment for crucial energy-related strategic interests between the two countries.

6.2.4 The Alexandroupolis FSRU

The Alexandroupolis FSRU is a planned project in the northeast of Greece consisting of an offshore Floating, Storage and Re-gasification Unit (FSRU) of LNG. It is designed to be connected via a subsea and an onshore gas transmission pipeline with the Greek National Natural Gas System, the TAP pipeline and the IGB gas pipeline to Bulgaria.⁸⁹

Figure 13. The Alexandroupolis’ FSRU connections to gas markets



Source: Gastrade

⁸⁹ “Gastrade Launches a Market Test for the Alexandroupolis LNG Terminal”, Gastrade, accessed May 3, 2020, <http://www.gastrade.gr/en/the-company/news-press-releases/gastrade-launches-a-market-test-for-the-alexandroupolis-lng-terminal.aspx>.

With a capacity of 5 bcm/y, the project offers the potential of new LNG imports from the US, Qatar, Egypt, and other sources of non-Russian natural gas. The project aims to provide an alternative source of gas supply to South-Eastern European markets and carries the ability to significantly boost the security of supply, diversification of gas routes and sources, price flexibility and increased competition in the region. The project has the capacity to meet the additional long-term gas demand in the region, give access to LNG, contribute to lifting the isolation of energy markets, and enhance gas market penetration. Similarly to the IGB project, the Alexandroupolis FSRU's value, lies primarily in its significant role for the overall energy security in the Balkans. In terms of gas capacity, it is worth mentioning that at 5 bcm/y the FSRU doubles Greece's LNG import capacity that -combined with the Revithousa Terminal- will reach 10 bcm/y. Taking into consideration that total gas consumption in the Western Balkans is approximately 3 bcm/y,⁹⁰ Bulgaria consumes 2,9 bcm/y,⁹¹ and Greece consumes approximately 4,5 bcm/y,⁹² it is evident that the Alexandroupolis FSRU carries the potential to play a vital role in effectively diversifying gas supply in the wider Balkans region. The Alexandroupolis FSRU's full potential is realized in combination with the IGB pipeline since the two projects together formulate a solid base for LNG imports in the Balkans.

Examined under the Strategic Framework of Energy Projects (SFEP), the project primarily meets SFEP's second criterion for both Greece and the United States relating to its potential to generate significant change in the balance of power on a regional level. The 5 bcm/y capacity, makes the project the primary source of LNG supply for the Balkans and, therefore, the primary instrument in reducing dependency from Russian gas and Chinese-owned coal-fired power production in the Balkans. For Greece, the significant change in the balance of power relates to the substantial upgrade in Greece's role for the energy security and economic development of the region. For the United States, the significant change in the balance of power relates to its crucial role in deterring Russian political coercion in the Balkans as well as Chinese advancements in critical energy infrastructure. In conclusion, the Alexandroupolis FSRU

⁹⁰ "Conference Report – Western Balkans: Infrastructure, Energy, Geopolitics", Warsaw Institute, May 29, 2019, <https://warsawinstitute.org/western-balkans-infrastructure-energy-geopolitical-perspective/>.

⁹¹ "Bulgaria key figures", Enerdata, accessed May 3, 2020, <https://estore.enerdata.net/bulgaria-energy.html>.

⁹² "Μελέτη Ανάπτυξης 2019-2028", DESFA, June 2018, [https://www.desfa.gr/userfiles/5fd9503d-](https://www.desfa.gr/userfiles/5fd9503d-e7c5-4ed8-9993-)

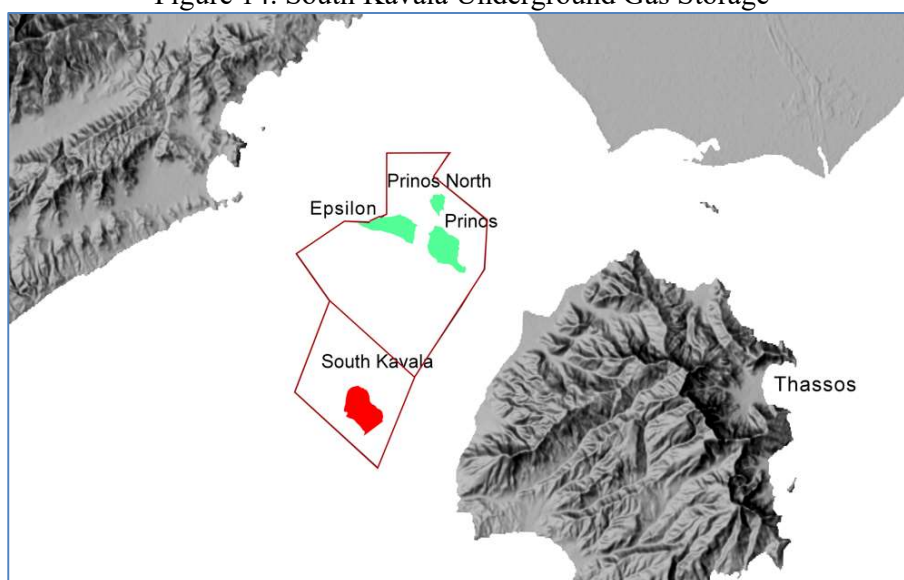
[e7c5-4ed8-9993-a84700d05071/%CE%9C%CE%B5%CE%BB%CE%AD%CF%84%CE%B7%20%CE%91%CE%BD%CE%AC%CF%80%CF%84%CF%85%CE%BE%CE%B7%CF%82%20%CE%95%CE%A3%CE%A6%CE%91%202019-2028.pdf](https://www.desfa.gr/userfiles/5fd9503d-e7c5-4ed8-9993-a84700d05071/%CE%9C%CE%B5%CE%BB%CE%AD%CF%84%CE%B7%20%CE%91%CE%BD%CE%AC%CF%80%CF%84%CF%85%CE%BE%CE%B7%CF%82%20%CE%95%CE%A3%CE%A6%CE%91%202019-2028.pdf), (in Greek).

carries significant strategic power both for Greece and the US. The project represents a substantial point of alignment of vital energy-related strategic interests between the two countries.

6.2.5 The Kavala Underground Gas Storage (UGS) facility

The Kavala Underground Gas Storage Facility project consists of the utilisation of the depleted offshore natural gas field of South Kavala as an underground natural gas storage (UGS) facility. The "South Kavala" gas field is located at a depth of 1.700 meters in the Gulf of Kavala in Northeast Greece,⁹³ covers an area of 5 square kilometres, and, according to the preliminary planning, its underground gas storage capacity (UGS) reaches 1bcm.⁹⁴

Figure 14. South Kavala Underground Gas Storage



Source: Energean

The Underground Natural Gas Storage Facility in South Kavala is an energy infrastructure with the ability to enhance the security of supply primarily in the Greek market but can also contribute significantly in the optimisation of natural gas portfolio management in the wider Balkans area. The Kavala UGS can primarily provide assistance in better management of LNG shipments from the Revithoussa Terminal and the Alexandroupolis FSRU. This, in turn, leads to higher flexibility for stakeholders across the region in negotiating imports of Russian pipeline

⁹³ "Greece, South Kavala", Energean, accessed May 3, 2020,

<https://www.energean.com/operations/greece/greece/south-kavala/>.

⁹⁴ "South Kavala Natural Gas Storage", Hellenic Republic Asset Development Fund, accessed May 4, 2020, <https://www.hradf.com/en/portfolio/view/26/south-kavala-natural-gas-storage?acceptall>.

gas -or even LNG- thus enhancing price competition, lower prices, and benefits for households and industries in the wider Balkans region. Examined under the SFEP, the Kavala UGS offers little, but nevertheless existent, strategic value to Greece and the US. The project primarily meets the third criterion for both Greece and the United States and relates to the enhancement of external balancing efforts. The scarcity of UGS facilities in the south Balkans offers opportunities for further cooperation between countries in the region thus enhancing efforts for further regional stability. Conclusively, it needs to be noted that however useful; the Kavala UGS offers a small margin and limited assistance in the advancement of common Greek-US energy-related security interests in the region.

6.2.6 The Interconnector Greece-North Macedonia (IGNM)

The project refers to the construction of a gas pipeline connecting Greece with North Macedonia, identified as a Project of Mutual Interest (PMI) by the Energy Community,⁹⁵ (the organisation established by the EU to extend the EU internal energy market rules and principles to countries in South-East Europe and the Black Sea region). The pipeline is designed to have a total length of 140km and a capacity of 3 bcm/y.

Figure 15. Gas Interconnector Greece-North Macedonia (IGNM)



Source: Energy Community

⁹⁵ “Gas 04B/ North Macedonia - Greece Interconnector, Brief project description”, Energy Community, accessed May 4, 2020, <https://energy-community.org/regionalinitiatives/infrastructure/PLIMA/Gas04B.html>.

The proposed project aims at the interconnection of the natural gas transmission systems of Greece and North Macedonia, leading to a significant improvement of diversification of supply for the latter -currently solely dependent on Russian gas imports from the Trans Balkan Pipeline- while parallelly generates a considerable increase in Greece's role in the region.

Access for North Macedonia to the Revithousa Terminal and the TAP pipeline carries the potential to benefit market competition, thus leading to lower prices for the supply of natural gas in the country. The IGNM pipeline enhances the regional development of the natural gas market and the involvement of more market participants, leading to lower prices in the Greek market and additional trading volumes and depth for the Greek Energy Exchange. More importantly, the IGNM pipeline has the potential to be supplemented by gas interconnectors planned between North Macedonia and Serbia and Albania, respectively. Similarly to the IGB, the IGNM creates a base for gas supplies from LNG shipments and the Southern Corridor to reach -via North Macedonia- the rest of the Western Balkans; thus it can be categorised among the projects with the highest strategic value for Greece and the United States on a regional level.

Examined under the Strategic Framework of Energy Projects (SFEP), the IGNM, identically to the IGB, meets all three of its set criteria for Greece, as well as the second criterion for the United States. In particular, regarding Greece, the IGNM pipeline contributes significantly in maximising Greece's share of power in the Balkan sub-system as a valuable and critical energy supplier for the Balkan countries, it generates a significant change in the balance of power on a regional level, while it simultaneously enhances Greece's self-help efforts both through internal balancing (economic benefits) and external balancing (stronger ties and cooperation between states). Regarding the US, the IGNM pipeline generates a significant change in the balance of power in the region since it carries the potential to effectively lower Russian and Chinese political influence in the fragile republic of North Macedonia and further on in the -equally vulnerable- other Western Balkan countries.

By significantly improving the diversification of energy sources in the Balkans and by creating conditions for further integration of natural gas in the wider area, the IGNM, combined with the IGB, offers valuable assistance in deterring Russian political coercion in the Balkans as well as Chinese advancements in critical energy infrastructure. In conclusion, although the IGNM is a rather small energy project in the region, it is, however, carrying overwhelmingly significant strategic power both for Greece and the US. The pipeline is thus a critical point of alignment for crucial energy-related strategic interests between the two countries.

6.2.7 The EastMed gas pipeline

The EastMed pipeline, unlike the previously mentioned PCIs, is a project that meets significant technical, economic, and political challenges. Designed to bring up to 11 bcm/y of natural gas from the newly discovered Eastern Mediterranean Israeli and Cypriot fields, the pipeline has the potential to further-assist EU's diversification efforts. The project refers to approximately 1200km of pipeline that includes 150km offshore pipeline from the Levantine Basin to Cyprus, 650km offshore pipeline from Cyprus to the island of Crete in Greece and another 400km offshore pipeline from Crete to Peloponnesus in mainland Greece.⁹⁶ From then on, it includes 500km of an onshore pipeline through Greece, where it will be connected with the Italian gas system via the offshore part of the Poseidon pipeline.⁹⁷

Figure 16. The East Med pipeline proposed route



Source: Edison

A study from MIT in 2013 ordered by the Cypriot government, examined the viability of natural gas distribution options for Cyprus.⁹⁸ MIT's extended study was based on the -then- known

⁹⁶ "Gas infrastructures", Edison, accessed May 4, 2020, <https://www.edison.it/en/gas-infrastructures>.

⁹⁷ "EastMed - A direct link to new sources for Europe", IGI-Poseidon, accessed May 4, 2020, <http://www.igi-poseidon.com/en/eastmed>.

⁹⁸ "Interim Report for the Study: Natural Gas Monetization Pathways for Cyprus - Economics of Project Development Options", MIT Energy Initiative, August 2013, <https://energy.mit.edu/wp-content/uploads/2013/10/MITEI-RP-2013-001.pdf>.

levels of proved reserves of 5–7 Tcf of Cypriot natural gas. Regarding the option for the construction of a pipeline towards Greece, the study underlined that from an engineering perspective, the EastMed pipeline is a challenging project. This is due to the fact that the route considered for the pipeline lies in the deep areas of the Mediterranean Sea, it includes substantial variations in sea depth, and shows a high risk of severe effects from seismic activity since Cyprus and Greece lie in two different tectonic plates. Nevertheless, in 2018 a series of pre-FEED (Front-End Engineering Design) studies were conducted by the Connecting Europe Facility, (EU's key funding instrument set to promote targeted infrastructure investment at European level),⁹⁹ resulting in a positive evaluation on the project. The studies confirmed the project's feasibility and technical viability, provided CAPEX and OPEX estimations and concluded that the EastMed pipeline contributes to the improvement of market integration of currently isolated countries such as Cyprus and some Greek regions, and the enhancement of EU's energy security.

Examined under the Strategic Framework of Energy Projects (SFEP) the EastMed pipeline seems to offer strategic value primarily for Cyprus rather than Greece and the US. For Cyprus, the pipeline meets all three conditions provided under SFEP since it generates a significant change in the balance of power in the regional sub-system and enhances Cyprus' self-help efforts through internal and external balancing. For Greece and the US, however, the strategic value of the pipeline is existent but limited. Out of the three criteria provided by SFEP, the pipeline partially meets the condition for enhancement of Greece's self-help efforts through external balancing since it creates the conditions for closer cooperation between Greece, Cyprus, and Israel.

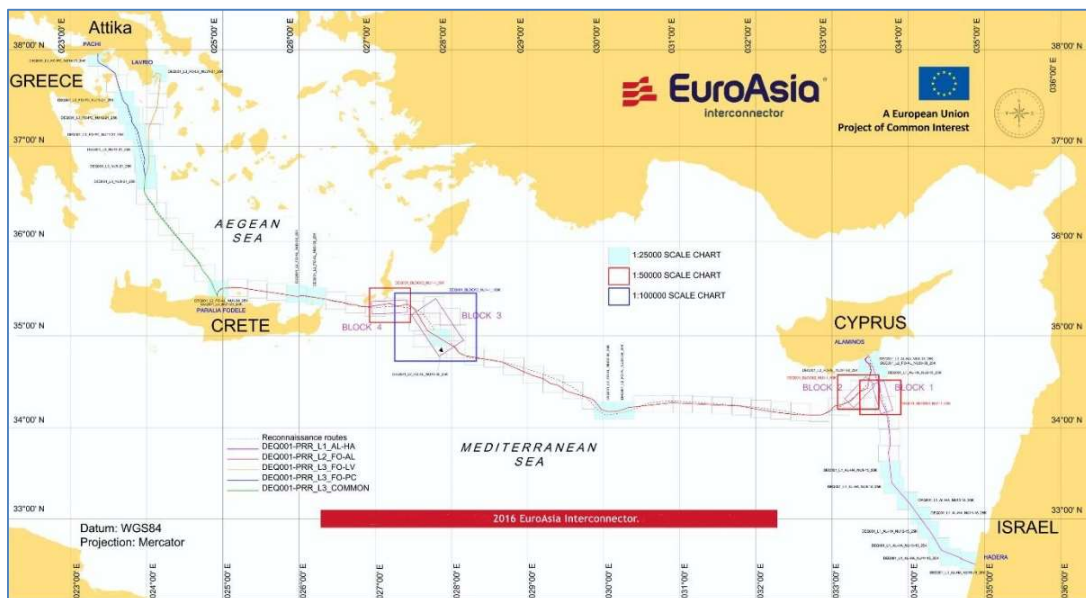
Taking into account that one of Greece's strategic objectives is the deterrence of Turkish aggression in the Greek and Cypriot EEZ, the pipeline indeed offers strategic value for Athens but does not limit Turkey's aggressiveness regarding the Greek and Cypriot EEZ. Respectively, for the United States, the pipeline offers strategic value in the sense that it enhances US efforts in the construction of a 'frontier' through the closer cooperation of its allies and partners in the regional sub-system of Eastern Mediterranean, but it does not address issues of conflict and friction between Greece and Turkey, both members of NATO. In conclusion, the EastMed pipeline is a project of strategic value both for Greece and the US but presents only a partial alignment of strategic interests between the two countries.

⁹⁹ "Eastern Mediterranean Natural Gas Pipeline – PreFEED Studies Executive Summary", Connecting Europe Facility, July 2019, https://ec.europa.eu/inea/sites/inea/files/cefpub/summary_7.3.1-0025-elcy-s-m-15_final.pdf.

6.2.8 The EuroAsia Interconnector

Out of the -few- electricity PCIs in SE Europe and Eastern Mediterranean, the one that carries significant strategic value is the proposed power line connecting Israel with Cyprus, Greece, and Italy to the rest of the EU. The proposed project, known as 'EuroAsia Interconnector' identified as an EU 'electricity highway' is planned to connect the national electricity grids of Israel, Cyprus, and Greece through a 1,200 km subsea DC cable with a 2GW capacity.¹⁰⁰

Figure 17. EuroAsia Interconnector – cable route



Source: EuroAsia Interconnector

For the two EU Member States involved, the strategic value of the project is evident: The project significantly raises Cyprus' power levels by offering control over significant electricity flows to the EU while at the same time is enhancing its self-help potential both via internal efforts (by generating significant economic revenues) as well as by external efforts (by forging common interests thus strengthening the alliance with Israel). The project's strategic value for Greece derives primarily by its strategic effects on Cyprus. Strengthening Cyprus' position in the regional subsystem of Eastern Mediterranean assists Greece's efforts to deter Turkish aggression, thus improving its overall levels of power. An element of imperative strategic

¹⁰⁰ "A Trans-European Energy Infrastructure project", EuroAsia Interconnector, October 2017, https://euroasia-interconnector.com/wp-content/uploads/2018/01/EuroAsia_Interconnector_Project_Overall_leaflet_English.pdf.

importance for Greece would be the effect that the construction of the interconnection can have on Greece's efforts to deter Turkish aggression regarding the Exclusive Economic Zone (EEZ). The project carries also significant importance in Greece's diversification efforts since its 2GW capacity represent 17% of the country's 12GW installed capacity and 28% of its annual 7GW electricity consumption and can thus significantly enhance Greece's security of supply in the electricity sector. Furthermore the project contributes in Greece's external self-help efforts by enhancing the alliance perspectives with Israel. For the European Commission, the EuroAsia Interconnector project offers the opportunity to strengthen the supply of electricity in the EU and connect one isolated Member State with the main European grid. For the United States, the EuroAsia Interconnector, examined under the SFEP, offers significant strategic value since it enhances US efforts in the construction of a 'frontier' through the closer cooperation of its allies and partners in the regional sub-system of Eastern Mediterranean.

Contrary to the afore-mentioned EastMed pipeline, the EuroAsia Interconnector project does not generate friction between US allies and partners in the region. Furthermore, the 'electricity highway' is enhancing Israel's position on a regional level by creating a solid connection between Israel and the EU, assists Israel in better utilising its gas-fuelled power production, further strengthens its economy and thus its stability and position in the Middle East an element of significant value for US security interests in a regional level. In conclusion, the EuroAsia Interconnector presents a significant alignment of Greek-US security interests and an opportunity for the mutual advancement of common security interests in the sub-system of the Eastern Mediterranean.

Conclusions

The growing role that the production, transportation, and consumption of energy resources play in the security environment of South-Eastern Europe and the Eastern Mediterranean in the past decade, creates a complex framework of energy-related security interests for national and supranational stakeholders in the two sub-systems. This study aimed at examining the conditions under which a framework of alignment of energy-related security interests is existent between Greece and the US on a regional level. To achieve its objective, this study intended to determine the elements and mechanisms through which these energy interests relate and interact with the two countries' security interests and identify specific energy projects in the region that could satisfy these conditions.

In order to identify the elements of energy-related security interest alignment between Greece and the US, this thesis introduced a new theoretical tool designed to link fundamental aspects of international relations theory with the basic principles of energy security. This innovative theoretical tool, named Strategic Framework of Energy Projects (SFEP), contains a classification of the criteria that attribute strategic value to energy projects. The three criteria defined under the SFEP, relate to an energy project's capacity to contribute in maximizing a stakeholder's share of power in the system, generate significant change in the balance of power in the system, and enhance the stakeholder's self-help efforts through internal or external balancing. Analysis of the theoretical framework of Kenneth Waltz's Balance of Power Theory and John Mearsheimer's Distribution of Power analysis, combined with Barry Buzan's Securitisation theory and Daniel Yergin's analysis on Energy Security, lead to the conclusion that when an energy project satisfies at least one of the three criteria of the Strategic Framework of Energy Projects, the project carries strategic value for the state actors it involves.

Following the establishment of the SFEP, the analysis proceeded with a presentation of Greek and US strategic and energy interests that were then tested against the pre-determined criteria for strategic energy projects. This process concluded in identifying a series of security objectives that could, for both countries, be advanced through their regional energy policies. In particular, the analysis has shown that for both Greece and the United States, supporting a series of energy infrastructure that can diversify energy sources and routes towards the EU carries the capacity to support and advance their fundamental security objectives in the two sub-systems of SE Europe and Eastern Mediterranean. In order to grasp a more coherent understanding of the energy-related security framework in the two sub-systems, the same analytical process has been then applied for other actors both major (EU and Russia) as well as regional (Balkan

countries, Israel, Egypt, Cyprus and Turkey) in the two sub-systems. The analysis revealed an alignment of Greek and US energy-related security interests with the EU, Cyprus, and Israel, a partial alignment with Egypt and a collision of interests, primarily with Russia, and, to a smaller degree, with Turkey. The comparison of Greek and -regional- US security and energy interests, revealed several points of conjunction where policies applied by one country to promote its own interests generate a positive effect for the other country's security and energy objectives and vice versa. These points of aligned interests relate to:

- the promotion of LNG as an alternative to pipeline gas,
- the promotion of policies that support the construction of gas pipelines from the Caspian and the Eastern Mediterranean to the EU,
- the support for multi-layered energy-based alliances between regional actors in the two sub-systems,
- the support for exploration licencing rounds by Greece and Cyprus for offshore gas fields within the Greek and Cypriot EEZs,
- the development of new routes for natural gas in the Balkans from Greece via gas interconnectors,
- the support for the development of the Greek Energy Exchange, and
- the containment of Line 2 of the TurkStream pipeline.

In order to identify the specific projects where Greek and US energy-related security interests align, a series of PCIs in South-Eastern Europe and the Eastern Mediterranean has been examined under the Strategic Framework of Energy Projects. The projects examined include the Eastern Mediterranean “EastMed” gas pipeline, the Trans Adriatic Pipeline “TAP”, the gas Interconnector Greece Bulgaria “IGB”, the high voltage cable “EuroAsia Interconnector”, the Alexandroupolis Floating Storage and Regasification Utility “Alexandroupolis FSRU”, the Kavala Underground Gas Storage “Kavala UGS” facility, the “Revithousa” LNG regasification plant, and the gas Interconnector Greece-North Macedonia “IGNM”.

The analysis revealed that these projects create a web of infrastructure in the regional sub-systems of Eastern Mediterranean and South-Eastern Europe that carry the capacity to promote both Greek and US energy-related security interests while also align with EU's objectives regarding its energy security as well as the security interests of other regional actors, i.e. Israel, Egypt, Cyprus, and most of the NATO-members in the Balkans.

In conclusion, this study has proven the existence of an extended alignment in energy-related security interests, that creates a unique opportunity for cooperation on a regional level between Greece and the United States. Using energy as the connecting element, the identified web of strategic projects supports Greece's primary security objectives in deterring Turkey's aggressiveness, promoting a just and viable solution to the Cyprus problem, and increasing its energy security status, while also supports critical US policies in creating a line of 'frontier states' to deter Russian and Chinese influence in Europe as well as threats from Islamic terrorist groups.

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