The Security of the Energy Routes in the South East Mediterranean

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THE ANALYSIS INSTRUMENT FOR THE STAKEHOLDERS

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If geopolitics is an argument about the future world order, then the easternmost third of the Mediterranean Sea is shaping up to be a cauldron of quarreling visions and interests like no other. This region is bound to North by the coast of Cyprus, to the East by the shores of Syria, Lebanon, Israel and the Gaza Strip and to the South by Egypt. The current situation of Eastern Mediterranean gas development is still fluid, and the instability produced by the war in Syria, as well as the general instability in the Middle East, are adding additional sources of complexity that can undermine the projects discussed by governments and energy companies.

However, the study of the interaction between markets, political and se-curity dynamics offers a starting point for understanding strategies. In particular, the geopolitical interests of the Eastern Mediterranean countries are bound to affect geoeconomic decisions concerning flows and exchanges in traded gas.

The following part will discuss this possibility, while being aware of the fact that there is no precedent from other parts of the world, of energy functioning as an incentive for peace between states in conflict or friction. The stakeholders' capacities to realize their preferred political options and use natural gas as a tool of foreign-policy objectives, are constrained by economic, technical and security concerns.

History of the Discovery of Gas Deposits...

Expert findings indicate that there is a natural gas deposit in the Eastern Mediterranean with an approximate total value of \$3 trillion. The U.S. Geological Survey Center estimated that there are 3.45 trillion c.m. of natural gas and 1.7 billion barrels of oil in the Levant Basin, which lies between Cyprus, Lebanon, Syria and Israel. It is estimated also, that about 1.8 billion barrels of oil, 6.3 trillion c.m. of natural gas and 6 billion barrels of liquid natural gas are located in the Nile Delta Basin. Apart from the 8 billion barrels of oil that is thought to be found around Cyprus, south of Crete, called "Herodot", is estimated to have 3.5 trillion c.m. of natural gas.

In 1999 the "Noah North" gas field (1.45 b.c.m.) was discovered in the Israeli Exclusive Economic Zone (EEZ), followed in 2000 by the "Mari-B"

European dilemmas and decisions

The E.U. position with regard to Eastern Mediterranean gas developments is rather ambiguous. On the one hand, the discoveries in Cyprus, a member state, will directly affect the balance of its internal energy reserves. The resources in the Eastern Mediterranean could improve economic recovery in Cyprus and Greece, two of the most vulnerable Eurozone members. Furthermore, Levantine energy resources could in theory, if additional gas fields are found, become an important means of diversifying gas supplies and reducing EU dependence on Russia. Actually, under the 2015 PCI scheme, the E.U. granted to the EastMed Gas Pipeline promoters a financial contribution of €802 million, covering 50% of the feasibility study of the future pipeline. On the other hand, the E.U. has proved to have scarce leverage to back up its policy preferences in this region, especially where national imperatives dominate the decisionmaking process, in non-E.U. member states such as Israel.

Despite these evident limits in the E.U's energy-security strategy, has also a wider direct political interest in solving the



gas field (29 b.c.m.). Exploitation of the latter began, due to its size, in December 2003 followed in mid-2012 by the start of production at the former. However, the real "story" actually began in 2009, when the large "Tamar" field was discovered in Israel's EEZ. Nowadays, the field is in full production and is estimated to have a capacity of approximate 300 b.c.m. These findings were followed by the discoveries in 2010 of the "Leviathan" field (620 b.c.m.) also by Israel, in 2011 the "Aphrodite" field of 128 b.c.m. by Cyprus, in 2012-13, the "Tanin" and "Karish" fields by Israel with a combined capacity of 55 b.c.m. and in 2015 of the "Zohr" field (845 b.c.m.) by Egypt.



Cyprus question and promoting regional stability. Moreover, the refugee crisis triggered by the Syrian civil war, and the complex relations with Erdogan's Turkey, are becoming contentious issues capable of destabilizing the E.U. and fueling eurosceptic movements. For these reasons, a scenario characterized by a possible Israel-Cyprus-Turkey energy agreement with U.S. support, would also be welcomed in Brussels, even if this development could mean that additional gas reserves

discovered in the Levantine Sea would pass through Turkey before going to the E.U. market, thus reinforcing Ankara's role as a crucial transit state for its energy diversification from Russia.

There are, however, different views inside the E.U.: given that the East Mediterranean region constitutes a credible alternative source with the potential to help E.U. diversify its energy sources and reinforce its supply and energy security, it would be wise for Europe that the Fifth

The EastMed pipeline A modern dream in an ancient region

he Eastern Mediterranean (EastMed) Pipeline Project refers to the construction of an offshore/onshore natural gas pipeline that connects directly Eastern Mediterranean gas resources of Cyprus and Israel to Western Greece via Cyprus and Crete. The fulfilment of the Project demands the additional construction of The Poseidon Pipeline that will connect Epirus Region (North Ionian Sea) with the Italian Region of Otranto. The project is being currently designed to transport up to 16 b.c.m./year through



1,300 km of offshore pipeline and 600 km of onshore pipeline, from the off-shore gas reserves in the Levantine Basin, of Israel (Leviathan Field with a capacity of 476 b.c.m.), Cyprus (Aphrodite Field/Block 12 with a capacity of 165 b.c.m.), as well as from potential gas reserves in Western Greece and Southern Crete. The EastMed project is comprised of:

- 200 km offshore pipeline stretching from Eastern Mediterranean sources to Cyprus
- 700 km offshore pipeline conencting Cyprus to Crete island

Corridor of gas, namely the proposed EastMed, is not transported via Turkey, as the Fourth Corridor gas (TANAP and TAP pipelines), otherwise its energy security will be compromised. Furthermore, given that Cyprus, as an E.U. and Eurozone member, has already proved its usefulness to Europe in various fields, including its defense policy, in view of the explosive situation in the Middle East and urgent need to combat terrorist attacks, Brussels utterly needs the alternative EastMed energy security advantage for itself. Indeed, Cyprus constitutes the easternmost defense bastion and border of Europe.

For the E.U., the materialization of an Eastern Mediterranean gas hub, understood as a crossroads of physical flows not as a trading platform, based on Egypt's LNG infrastructure, would be beneficial for both energy policy and foreign policy considerations, providing substance to the long-lasting E.U. gas supply diversification strategy and functioning as a catalyst for sensible regional dialogue, and most importantly keeping Russia away from acting as a political arbitrer for the whole region. Indeed, this schemes energy routing to the markets could help E.U. to avoid becoming hostage to either Russia's monopolistic visions or Turkey's regional

aspirations. European Union planning and decisions related to natural gas discoveries in the Southeast Mediterranean include:

Within the context of the decision to open the Southern Corridor, as well as the development of the Mediterranean Hub, the European Commission included, in November 2017, in the list of Projects of Common Interest (PCI) the following: Cluster Infrastructure to bring new gas from East Mediterranean gas reserves (no. 7.3) including Pipeline from the East Mediterranean gas reserves to the Greek mainland via Crete (currently known as EastMed Pipeline) with a metering and regulating station at Megalopolis and

- 400 km offshore pipeline from Crete to mainland Greece (Peloponnese)
- 600 km onshore pipeline through Peloponnese and Western Greece

At first glance the EastMed is an impressive idea. The pipeline shall transport 10 b.c.m./year of gas from eastern Mediterranean gas fields, to Greece and Italy. About 1,900km long, and reaching depths below 3km, it will be the world's longest and deepest subsea pipeline. The estimated cost is €806.2 billion.

• The opening of the **Southern Gas**

Corridor. Its purpose is to extend gas transport infrastructure from the Caspian basin, Central Asia, the Middle East and the Eastern Mediterranean basin. • The development of the Mediterranean Hub. Its purpose is to diversify energy routes as well as sources of supply. The Mediterranean region, given the huge production prospects of Algeria's natural gas and the new East Mediterranean gas fields, can play a key role as a new source, but also as a new supply route.

dependent on it the following PCIs:

- Offshore gas pipeline connecting Greece and Italy (currently known as Poseidon Pipeline) no. 7.3.3
- Reinforcement of the South North internal transportation capacities in Italy (currently known as Adriatica Line)

Finally, within the framework of the Southern Corridor the program (no. 7.5) for the development of natural gas infrastructure in Cyprus (currently known as "Cyprus Gas2EU") has also been included. In the wider context of energy transfer, the programme Priority Corridor North-South Electricity Interconnections in Central Eastern Europe (NSI East Electricity), which includes the Cluster Israel - Cyprus - Greece (currently known as EUROASIA Interconnector) has been included, which comprises:

- No. 3.10.1: Interconnection between Hadera (Israel) and Kofinou (Cyprus)
- No. 3.10.2: Interconnection between Kofinou (Cyprus) and Korakia, Crete (Greece)
- No. 3.10.3: Interconnection between Korakia, Crete and the Attica region (Greece)



EAST MED GAS ASSETS OVERVIEW



Israel, the first country of the region to make major gas discoveries, was also the first mover in the economic and political game for its monetization, in terms of new export routes and infrastructure projects. In July 2010, after the important discovery in the Leviathan gas field, Prime Minister Netanyahu proposed to Greek Prime Minister George Papandreou a pipeline connecting Israel and Greece via Cyprus. Both governments saw energy as the cornerstone of a strategic rapprochement, especially after the collapse of the Turkish-Israeli alliance in the wake of the 2010 "Mavi Marmara" incident. In the following years, Israel and Greece attempted to upgrade and institutionalize their energy cooperation by including Cyprus which, after the Aphrodite gas-field discovery in 2011, was ready to play an important role in regional energy security. The Israeli, Cypriot and Greek energy ministers created joint task forces to evaluate the feasibility of several options. For exportation, they considered a pipeline (EastMed Gas Pipeline) to carry gas from Israel and Cyprus to European markets through Greece, and a joint Israeli-Cypriot LNG plant near Vassilikos on the southern coast of the island.

However, other projects were simultaneously evaluated by each government according to its own energy-security agenda and national interests. These projects included an LNG plant or a floating liquefied natural-gas (FLNG) plant in Israel, an Israel-Cyprus-Turkey pipeline and an Israel-Turkey pipeline. From 2011 to 2014, various competitive options were under consideration for the monetization of gas resources. They required varying levels of cooperation from two or more countries, had different price tags, and enjoyed different degrees of political support.

On Monday 3 April 2017, the energy ministers of Cyprus, Greece, Israel and Italy met in Tel Aviv, warmly watched by the E.U. Commissioner for Climate Action and Energy. They gathered to sign a preliminary agreement to advance the EastMed pipeline. The agreement between the four countries has created a common route on three levels: commitment to a transnational agreement, negotiations at a technocratic level that will have elements corresponding to those of the Cyprus - Egypt agreement and the presentation of the study by the contractor. The co-Understanding Memorandum that was signed between the four countries consoli-

Cooperative Projects for the Monetization of the Eastern Mediterranean Gas Resources (2011-14)

Projects	States Involved (* Main Supporter)	Gas Capacity (bcm/year)	Estimated Cost (USD billion)	Estimated Year of Operation (as of 2014)	
LNG Plant	Cyprus* and Israel	7-14	10-15	2020	
Pipeline	Israel-Cyprus- Greece [*]	30-40	17-20	Post 2020	
Pipeline	Israel-Cyprus- Turkey*	5-11	5-10	2023-2025	
Pipeline	Israel-Turkey"	5-11	5-10	2023-2025	

Department, April 2014.

dates their energy role in the project, but also upgrades them politically, strengthening them on the geopolitical chess board. The EastMed does not represent a simple gas supply pipeline, but a comprehensive strategic **plan** involving capital and other means, as well as the creation of security conditions in the region.

However, export of gas from the Eastern Mediterranean is a particularly thorny area. The region has seen significant resources discovered in the past decade, such as Tamar and Leviathan in Israel, Aphrodite in

The Exploitation of Eastern Mediterranean and European Natural Gas

Short-term Scenario (end 2019)

At the end of 2019, is expected that Egypt and Israel shall be able to export significant quantities of natural gas to Europe. Main existing facilities for export are the two large Egyptian LNG terminals of Idku and Damietta, on the Mediterranean coast. The closest European reception terminal is that of Revythoussa, near the Greek port of Piraeus. Revythoussa is being upgraded and in the autumn of 2018, an additional 95,000 c.m. LNG tank (the third in line) shall be commissioned, which shall increase the terminal's total storage capacity from 130,000 to 225,000 c.m. At the same time, the port reception facilities are being upgraded so as to accommodate vessels with a 260,000 c.m. capacity, compared to 135,000 c.m. which can be accommodated for the present. The terminal's divertive capacity is also being increased from 1,000 c.m./hour to 1,400 c.m./hour. Therefore, Revythoussa, which traditionally receives Algerian LNG, for the needs of the Greek market, shall also be able to receive Eastern Mediterranean LNG via the Egyptian terminals.

It should be noted here that since 2014, the Greek National System is connected with a two-way flow capability to the northern Sidirokastro Measuring Station (north of Serres) opposite Bulgaria. Practically this feature has not been used yet. It is possible, however, that following the commissioning of the upgraded Revythoussa terminal, in the winter 2018-2019, certain quantities of gas might be seen moving upstream from the South to the North. The flow of natural gas from Revythoussa to Sidirokastro and from there onward to Kulata in Bulgaria would, in fact, constitute the first opening of the Southern Corridor that Europe is aiming for its, at least partial, energy independence from Russia.

Mid-term Scenario (end 2022)

By the end of 2022, a large number of infrastructure projects shall have been completed in numerous littoral countries, while other projects shall be in a state of advanced construction:



• The TAP pipeline, which starts from the Greek-Turkish border as an extension of TANAP, transporting gas from Azerbaijan through Turkey, shall have be completed and shall be in operation. TAP crosses the Greek territory from East to West, also crossing Albania in the same direction, ending near the port of Durres, making an underwater crossing of the Adriatic to beach in the San Foca area of Southern Italy (near Lecce) and from there is connected to the Italian Gas Network. TAP is at an advanced stage of construction with commercial operation planned to start in 2020 (see our Report #1: "Safeguarding Energy Networks").

- The IGB pipeline connecting the Greek and Bulgarian gas networks between Komotini (Northern Greece, Thrace) and Stara Zagora (Southern Bulgaria) shall have been completed. Construction is expected to commence at the end of 2018 and commissioning is planned for the end of 2020.
- The construction of the Alexandroupolis Floating Storage Regasification Unit (FSRU) may have been completed. This terminal shall receive LNG and following its regasification, it will be forwarded through TAP both to the Greek network and, via the TAP - IGB interconnection, to the Bulgarian national network and from there northwards to Romania. Serbia e.t.c.
- Production will have commenced at the Aphrodite gas field off Cyprus. Cyprus is in an advanced stage of negotiations with Israel and Egypt. With Israel, it is negotiating the exact distribution of the field's exploitation percentages, as a small part of it extends within Israel's EEZ.

With Egypt, Cyprus signed the underwater interconnection of wells to the underwater production network already under construction for the massive Zohr field, for the transportation of natural gas to the Egyptian shores and from there, either towards the Egyptian internal market or for export in LNG form. The start of production at the Aphrodite field will be the first natural gas production by an E.U. member state in the South East Mediterranean. This production shall be channelled to Cyprus via the LNG reception terminal at Vassiliko (near Limassol) which is already at an advanced stage of design, as well as the rest of Europe with the closest reception terminals in Greece, being Revythoussa and Alexandroupolis and/or through Egypt.

Production will have commenced from Israel's Tanin and Karish

Sources: Authors' compilation from European Parliament, "The Prospect of Eastern Mediterranean Gas Production: An Alternative Energy Suppliers for the EU?" DG External Policies, Policy

Cyprus and Zohr in Egypt, but there are multiple conflicting demands and pressures. They count among them the need to supply the local market, uncertainty over the capacity of existing infrastructure, regional political constraints and, finally, the need to accommodate future exploration discoveries. So, what is the business case for the EastMed pipeline? Justifications include the ability to off-take and supply gas at multiple locations along the line, energy security and a geopolitical desire to tie together countries in mutually beneficial projects. No wonder the E.U. is interested in its becoming reality.



fields by the Greek company Energean. Production is planned for 2021, which will result in additional gas quantities, estimated at 8 b.c.m./year, being available for export from Israel.

Long-term Scenario (end 2025)

Commissioning of the planned EastMed natural gas pipeline with a capacity of 10 b.c.m. annually, of Israel's, Cyprus' and most probably Egypt's natural gas. This will be connected to the Greek National Gas System at Megalopolis (southern Greece, Peloponnese), through Crete, and via a connection to the also planned Poseidon pipeline, shall channel natural gas to the Italian peninsula and from there via the upgrading of the main Italian network (Adriatica Line) to Central Europe.



Potential Export Routes for Eastern Mediterranean Gas



Why not LNG?

Capital costs will remain a big driver and the potential to utilise spare capacity in existing LNG facilities in Egypt, assuming political and commercial issues can be overcome, create a significant advantage for LNG. In addition, the costs of mega-projects have a habit of increasing and there are some tough issues around all intergovernmental agreements the division of costs, revenues and tax receipts/reliefs to be negotiated. Undoubtedly, this would be a mammoth task for the region to overcome.

With all this in mind, it is not surprising that grand pipeline schemes often don't get built. Examples of pipeline plans that have not come to

fruition, and it is doubtful they ever will, include the Iran-Iraq-Syria gas pipeline and the Basra-Aqaba line. There are exceptions of course. A system in the region that did get built as planned was the Baku-Tbilisi-Ceyhan (BCT) oil pipeline, a good example of a pipeline driven by politics and security of supply. BCT was competing with proposed expansion projects and thus was difficult to negotiate and expensive, but is now an important fixture in global oil infrastructure. There are also examples of pipelines successfully operating in parallel with other offtake routes for example, the long history of concurrent operation of LNG and gas pipelines from Algeria. LNG provides access to a greater range of markets and the volumes of gas in Algeria were sufficient to force a diversification of outlets.

Desert ghosts: political relations sometimes affect the pipeline process

The Middle East is littered with defunct pipelines: the best will in the world shall not bring the Kirkuk to Haifa line back to life, and its eerie pump-stations deep in the Jordanian desert are like 20th century ghost towns.

There is possibility, however, that the EastMed pipeline will operate in parallel with other export/import routes. Israel is already planning to export gas to Jordan and supplying gas for LNG outside of Israel may resurface.

The pipelines from Egypt to Israel and Jordan, and on from Jordan to Syria, are an interesting case study of infrastructure where the role has evolved. Originally intended to provide a link for exporting Egyptian gas, the system has been sabotaged so many times, it can be discounted as a reliable source of supply. After a period being empty, the Jordan leg is now the route for regasified LNG from Aqaba, and proving to be a valu-

able piece of infrastructure. The encouragement here is that pipelines may have an additional value attached, which alternative infrastructure does not. Pipelines can have particularly long lives if carefully operated. Discounted cash flow techniques diminish this value, but companies sitting on fully-depreciated assets, that are still delivering a steady and low risk revenue stream understand these benefits.

Back to economics...

The question is whether there is the prospect of sufficient gas to underpin a 12-15 b.c.m. line across the Mediterranean at a competitive price. Probably not yet. Or at least not enough to keep the line full for a significant proportion of its operating life. The Domestic Market Obligation in Israel, a substantial 60% may also stand in the way, although the Leviathan partners have procured additional export permits in the sale of other gas assets. The budding wild card is Cy-



The Egypt-Israel and Arab Gas Pipelines

prus, with potential multiple Zohr like discoveries lying it its waters, and if political considerations can be overcome, there may be a large supply of gas. It would be a bold investment to commit to a pipeline without this additional exploration success, but that may come quickly. As has been shown by Zohr, rapid development may follow. Ultimately, whether the EastMed pipeline materialises will not be decided by pure economics, but alongside the politics of this ancient region. And it may take a long time to pay back, but pipelines do have a habit of having a twist at the end of their tale.

Interests at stake

Nine states (Egypt, Israel, Cyprus, Greece, Italy, France, Turkey, Russia, and the USA) have major to very high stakes in the **"Big Game"** of South East Mediterranean's region. The experience of recent years suggests that ensuring peace and stability in the region, in order to flourish any investment plan, is first and foremost the responsibility of the regional powers.

Therefore, five of them have important to very high stakes in the development and operation at a full production and transport capacity, as soon as possible, of the existing or planned offshore/onshore facilities. The states with very high stakes are Egypt, Israel and Cyprus. All three shall become self-sufficient in gas energy, according to the aforementioned mid and longterm scenarios. Of these, Israel and Egypt have already made a major shift to covering their electricity production requirements using natural gas. Cyprus is lagging behind, in this sector. It is still in the design phase, but in the long term (2025) it is planning to cover all of its electricity requirements, excluding production from renewable sources, through the use of natural gas. In addition, it has been decided that a very large underwater electrical cable, the "EuroAsia Interconnector", is to be funded by the European Union, on

Fuel Consumption: Primary Consumption Data



ECEGA Tables 2017, Data sourced from the IEA and the BP Statistical Review of World Energy, 2016

the one hand in order to lift the energy isolation of Cyprus and on the other to transfer electricity from Israel, primarily, and Cyprus to Greece and Europe. The electricity that shall flow through the "EuroAsia Interconnector" will be produced mainly from the use of natural gas.

Greece and Italy have also significant interests in the integration of energy infrastructure in the Eastern Mediterranean. Large surplus quantities of natural gas shall be channelled into the underwater EastMed pipeline

EGYPT: A regional energy hub rises...

Regarding the massive Zohr, the largest Eastern Mediterranean gas field to date, construction of the production infrastructure commenced at once and today it yields around 2,300 barrels of oil and 1.2 b.c.f. of natural gas per day. Production will gradually reach 2 b.c.f. by the end of 2018 and 2.7 b.c.f. by the end of 2019. Zohr's discovery was catalytic as it confirmed that, the region of the South East Mediterranean contains huge deposits of natural gas. The above discoveries have been combined with the existense-exploitation of additional deposits in the Egyptian EEZ, more specifically in the wider maritime region outside the vast Nile Delta.

The Italian ENI operates in the Egyptian EEZ exploiting the Zohr gas field. These discoveries and the enormous infrastructure projects that immediately followed, have ramped up the Egyptian daily production to 156 m.c.m. and this is expected to reach 170 m.c.m. by the end of 2018. Egypt already has two major LNG terminals in the Mediterranean, the Idku (east of Alexandria), where the gas pool of Shell, Texas-based Noble Energy Inc. and Israel's Delek Drilling LP continue to hammer out a contract



which the European Union is planning to fund. This will initially channel 10 b.c.m. of natural gas from the Eastern Mediterranean via Cyprus and Crete to Greece, and from there via the - planned - Poseidon pipeline to Italy and Central Europe. Conclusively, all five states have very important reasons to seek to completion of the energy infrastructure in the South-East Mediterranean as soon as possible. We shall examine the nine states' and major stakeholedrs' interests in detail.



to service the liquefied natural gas plant, and Damietta (west of Port Said), with an import-export capacity of 10 and 5 b.c.m. respectively per year. This means practically, that around 62 b.c.m. of natural gas will be pro-

duced annually, when Egypt's own needs for 2016 only were 51.28 b.c.m. Concequently, at the end of 2018 the country shall become self-sufficient in natural gas, and all the extra quantities are to be exported.



In this context, following last September's tripartite meeting of Egypt's Foreign Minister Sameh Shoukry with his Greek and Cypriot counterparts Nikos Kotzias and Nicos Christodoulides, Cyprus' Energy Minister Yiorgos Lakkotrypis and his Egyptian counterpart Tarek El Molla, signed an agreement on the construction of an underwater pipeline in the Eastern Mediterranean, as part of a joint effort to commercialize the gas quantities found in the EEZ of the two countries. This pipeline will start from the sea area within the Cypriot EEZ, transferring the natural gas from Cypriot plots to Egypt, which has the necessary infrastructure to process and convert it into liquefied natural gas (LNG), with the aim of exporting it to Europe. The start will be made with plot 12 "Aphrodite". The pipeline is estimated to cost between \$800 million and \$1 billion, as the Egyptian Petroleum Minister Tarek El Molla stated. According to Sofronis Papageorgiou head of commercial affairs at the Cypriot embassy in Israel, four major investment

firms, have already, expressed interest in financing the construction of the pipeline. The banks and investment houses asked the Cypriot government for more information on the progress of the "Aphrodite" reservoir, whose gas **Royal Dutch Shell Plc** is considering buying for its facility in Egypt.

In parallel, last October's 6th Tripartite Summit of Greece, Cyprus and Egypt, was cocluded with a positive sign in Elouda Crete, where the leaders of the three countries and the Ministers participating certified the strategic co-operation that enhances the security, stability and prosperity of the Southeastern Mediterranean region. The various ongoing projects were discussed, such as the study on the East Med pipeline, and developments regarding the LNG terminals in Revithousa and Alexandroupolis which will be particularly useful to the creation of the "Eastern Mediterranean natural gas corridor", especially if some of the natural gas transferred from the East Mediterranean is in liquid form.

Navy and Air Force



The main Egyptian naval units are: 2 Mistral class L helicopter carriers-amphibious assault ships, 6+2 submarines SSK 4 (4 Romeo class, 2 Type 209-1400 class plus 2 more Type 209-1400 on order) 9 frigates (1 FREMM class, 4 Oliver Hazard Perry class, 2 Knox class, 2 Jianghu-II class 4), 5 corvettes (2 Gowind class on delivery, 1 Pohang class, 2 Descubierta class) and about 45 missile boats. Deliveries over of the past decade have included 2 French built Mistral class amphibious assault ships, 4 German class 209/1400 submarines, 1 French Fremm class frigate, 1 French Gowind class corvette and a second-hand Pohang class corvette of South Korean origin.

The **Egyptian Air Force's** major fighter aircrafts belong to four main types: F-16, Mirage 2000, Rafale and MiG-35. Specifically, Egypt has ordered 24 French Rafale fighters, deliveries of which began in mid-2015 and currently 14 aircraft are operational. That same year the country also ordered 46 MIG-35, of which 15 have been delivered and are already in operational use. Egypt also uses 18 Mirage 2000, 40 F-16 C/D Block (32 delivered in 1986 -1988), 138 F-16 C/D Block 40 delivered in 1991 -2002 and 20 F-16 C/D Block 52 delivered between 2013 - 2015. Finally, the Egyptian Air Force also has 9 E-2C Hawkeye 2000 AEW&C, which were upgraded to the 2000 standard during 2003-2007.

Jordan was agreed to for the next 15 years. Exports began in January 2017, yielding \$800 million last year. In February 2018, the Israeli company Delek Drilling and American Noble Energy, which operate the "Tamar" and "Leviathan" gas fields, signed agreements with the Egyptian company Dolphinus Holdings for the export of natural gas of a total volume of 64 b.c.m. and \$15 billion value, over the next decade.

The sea area between Israel and Lebanon is the most disputed area, which extends along the edges of three Lebanese gas exploration Blocks: 8, 9, 10 of which Block 9 is said to be the most profitable and is claimed by Israel. In the first half of February 2018, Lebanon signed a contract



for exploratory and production works with Italian ENI, French Total and Russian Novatek. Since the works are to be carried out in Block 9, Israel described Lebanon's action as "very provocative", paving the way for a military showdown. In response to it, the Hezbollah leader Hassan Nasr Allah threatened to target Israeli offshore gas platforms. The former US Secretary of State Rex Tillerson declared that Washington could help resolve the dispute between Israel and Lebanon, but Hasan Nasr Allah refused to have talks with the United States, a dishonest broker. Hezbollah is supported by Iran as is Lebanon by Turkey. Tel Aviv accuses Ankara of supporting Hamas, while Turkey says it merely defends Islam and Palestinians.

The EastMed project

Israel, the first country of the region to make major gas discoveries, was also the first mover in the economic and political game for its monetization, in terms of new export routes and infrastructure projects. In the following years, the Israeli, Cypriot and Greek energy ministers created joint task forces to evaluate the feasibility of several options. For exportation, they considered a pipeline (EastMed Gas Pipeline) to carry gas from Israel and Cyprus

ISRAEL: A major stakeholder ensuring regional security...

Israel initially exploited intensively for a decade and depleted the first two fields "Noa North" and "Mari-B" that had been discovered. Production from both fields has so far exceeded 25 b.c.m. and they are nearing depletion. Since 2013, the country has been exploiting the much larger "Tamar" gas field. A significant contribution to its rapid production was the infrastructure that had already been created for the two initially discovered fields. More specifically, active in the field of Israel's natural gas production are companies such as: American Noble Energy, Hellenic Energean and the Israeli Delek Group, Isramco Negev 2, Ratio Oil Exploration. Today, Israel covers about 65% of its gas needs and is expected to cover all of its needs in 2019, when the even larger "Leviathan" gas field goes into production. It is worth mentioning here that the country, over the past decade, has turned to natural gas for the production of electricity abandoning coal, causing an upsurge of the overall consumption of natural gas. In 2015, consumption reached 8.4 b.c.m. In comparison, Greece with a larger population consumed just 4.65 b.c.m. of natural gas in 2017 (a record year).

Since 2013, Israel has adopted and is already pursuing an aggressive export policy for natural gas. In 2014, the export of 2.2 b.c.m. of natural gas to



Bid Round Block Delineations, Source: The Ministry of National Infrastructure, Energy and Water Resources of Israel



to European markets through Greece, and a joint Israeli-Cypriot LNG plant near Vassilikos on the southern coast of the island. However, other projects were simultaneously evaluated by each government according to its own energy-security agenda and national interests.

On Monday 3 April 2017, eventually, the energy ministers of Cyprus, Greece, Israel and Italy met in Tel Aviv, warmly watched by the EU Commissioner for Climate Action and Energy. They gathered to sign a preliminary agreement to advance the EastMed pipeline. The co-Understanding Memorandum that was signed between the four countries consolidates their energy role in the project, but also upgrades them politically, strengthening them on the geopolitical chess board. The EastMed does not represent a simple gas supply pipeline, but a comprehensive strategic plan involving capital and other means, as well as the creation of security conditions in the region. The strong ties between Athens, Jerusalem, and Nicosia go well beyond the promotion of open communication links in the field of energy. The strategic triangle, and especially the close cooperation between Athens and Jerusalem, form a strong defense pact, emphasized by the numerous military exersises in the region, that can stem turkish revisionism and help the rest of the western world obstruct jihadists as they attempt to target western states.

Navy and Air Force

The major Israeli naval units are 3 corvettes, 8 missile boats and 6 **L** submarines. Delivery of the last 3 submarines has been taking place over the past 10 years. More specifically, the Israelis have 3 Eilat (Sa'ar 5) class Corvettes which entered service in 1994 and 1995, 3 Dolphin class submarines of German origin, as well as 2 state of the art Air Independent Propulsion (AIP) Tanin class submarines (HDW design with AIP) that entered service in 2012 and 2014. A third is expected to be commissioned in 2019. The Israelis also have 8 Hetz (Sa'ar 4.5) class fast attack missile crafts: 2 with a helicopter deck commissioned in 1980 and 6 commissioned from 1981 to 2003.

Israeli Air Force main fighter aircrafts are of 3 types: F-16, F-15 and F-35. Specifically, Israel has ordered 50 F-35I "Adir" with 11 delivered and been operational since December 2017. Deliveries will be completed in 2024. It is the first country in the region to operationally employ, such an advanced aircraft. Israel also has very large numbers of F-16C/D with the Barak 2020 refit completed in 2014 (78 and 48 aircraft respectively) and F-16I Block 52+ (97 aircraft). It also uses F-15E Ra'am (25 aircraft) which were gradually delivered starting in 1998, F-15 C/D with Baz-2000 refit (36 aircraft) which were delivered in the 1980's and F-15A/B (26 aircraft). The IAF has 4 Airborne Early Warning and Control (AEW&C) aircrafts: one B-707 Phalcon (a second might be in reserve) and 2 Gulfstream G550 Eitam (1 more on order). There are also 11 aerial refuelling aircrafts: 7 Boeing 707 and 4 KC-130.

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"ENERGY WARS"

CYPRUS: An important piece of the puzzle...



Cyprus has its own natural gas needs, on one hand to cover its electricity production and on the other to comply with European directives to reduce emissions. Its requirements are estimated to 1 b.c.m. of natural gas for the year 2020, and are estimated to be close to 1.8 b.c.m. by the year 2025. Exploration and drilling continue in the region. More specifically, the positive drilling results in February 2018 in the "Calypso" Block 6 of the Cyprus' EEZ, were one more positive development to the continuous discoveries of significant deposits in the area over the past decade. Exploration is being carried out by Noble Energy - Delek Group and Shell joint ventures in Block 12, ENI in Block 8, an ENI & Kogas joint venture in Blocks 2,3 and 9, ENI and TOTAL in Blocks 6 and 11. For 2018 an exploration well is planned by the Italian company ENI, at the "Soupia" drill site (Block 3), as well as two exploration wells by the Exxon Mobil - Qatar Petroleum joint venture, at the "Anthea", "Delphin" and "Glafkos" drill sites (Block 10) of the Cyprus' EEZ in mid-November.

In order to secure its energy plans, Cyprus participates in two tripartite cooperation alliances: The Israel-Cyprus-Greece and the Egypt-Cyprus-Greece. These alliances, together with the support of the E.U. and especially the U.S.A., that has stated will not remain idle in case Turkey tresspasses Cyprus' EEZ either by drilling actions or harassment and interidiction of the programmed drillings, provide the necessary diplomatic and defense context against Turkey's increasing threats.

Additionaly, the political decision to participate in the construction of the EastMed pipeline confirms the significance of Cyprus, in a project which beyond its main energy nature also possesses a clear geopolitical and geostrategic one. It may even take on the guise of a security subsystem that will alter not only the military but also the energy and economy balances between Cyprus, Greece and the E.U. on the one hand, in comparisson to



those between the E.U. and Turkey, on the other. EastMed creates a new geopolitical and geostrategic environment that serves a dual strategic purpose:

- 1. Maintaining the present status quo, stregthening the existence of the Republic of Cyprus on the one hand and deterring its dissolution as well as the Turkish threat on the other.
- 2. Making secure the exploitation of natural gas in the region.

The strategic importance of the island was underlined also by the recent, on Tuesday 6 November 2018, "Statement of Intent" on strategic development of bilateral relations, signed between the Minister of Foreign Affairs of

MAIN GAS FIELDS IN THE EASTERN MEDITERRANEAN SEA



the Republic of Cyprus Nikos Christodoulides and the and Assistant Secretary of State Wess Mitchell, during the former's visit in Washington where he met the US Secretary of State Mike Pompeo. Three issues dominated the agenda of the meeting:

1. The strengthening of bilateral relations at all levels and the common desire for cooperation in the field of security.

2. The important role that the Republic of Cyprus plays in developments in the region through its tripartite partnerships with neighboring states.

3. The Cyprus issue was the third to be discussed between Pompeo and Christodoulides. The US expressed support for both the UN Secretary-General and the efforts of Jane Holl Lute. There was also an exchange of views on the chapter on security and guarantees, which is an important issue in the effort to resolve the Cyprus issue.

Navy and Air Force

yprus realizing its strategy to become the outmost E.U. frontier in the region whatever it takes, together with the growing needs for the defense of its EEZ, plans a new rearmament program for its National Guard. Conforming to EDA's guidelines and decissions, this programme of about €100 million aims to the aquisition of european weapons systems, as well as U.S. ones, should the arms sales embargo raises. In this context, a program of bilateral Defense Cooperation has been signed between the MoDs of Cyprus and France, as well as Egypt and Israel.

Navy and Port & Marine Police units are: 1 Offshore Patrol Vessel (OPV) Al Mubrukah class of british origin, 1 israeli Offshore Patrol Vessel (OPV) Saar 62 class, 4 italian Patrol Boats C382 type, 1 finnish Patrol Boat Ammohostos class, 2 Patrol Boats FAC-23Jet type, 1 Patrol Boat Shaldag Mk.I class, 2 Patrol Boats UFPB type, 5 Motor Launches SAB-12 type, 2 Special Forces Patrol Boats (SFPB) Rodman 55 type of spanish origin.

Air Force units consist of: 11 Russian Mi-35P attack helicopters, 4 French SA341L1 Gazelle attack helicopters, 3 AW139, 2 Bell 206L3 Long Ranger SAR.

GREECE: At the crossroads of the new european energy sources...

Greece aspires to become an energy hub (gas and electricity) towards Italy and the Balkans, while also diversifying its own sources of supply. It also hopes that the major energy interconnections (electricity-natural gas) shall lift Crete's energy isolation, an island that annually costs about €600-€800 million/ year, depending on international oil prices, to the Greek economy, as it utilises electricity produced from fuel oil. Greece is already in the process of completing or commencing very significant energy infastractures such as: the aforementioned upgrading of its LNG terminal at Revythousa, and the constructions of TAP, IGB and the Alexanroupolis FSRU. It participates too, to the proposed EastMed project as an integral part, as well as the tripartite alliances of Israel-Cyprus-Greece and Egypt-Cyprus-Greece.

Moreover, an "esoteric" Greek hope is that the completion of the gas transport infrastructure to Italy and the Balkans, shall in the future also be used for the transportation of Greek gas reserves which, has good reasons to believe, exist in the maritime areas of Western Greece and the South and West of Crete, an area which exhibits similar geological charactheristics to that of the South Eastern Mediterranean.

More specifically, in the Ionian Sea the advantage is that a deposit has already been discovered (Katakolo, Peloponisos), while for the southern Cretan Sea the estimate is that it is a high risk area, due to the great sea depth, but with high-yielding potential, should deposits be discovered. In this context, the Minister for the Environment and Energy, Giorgos Stathakis, has awarded the Total - ExxonMobil - Hellenic Petroleum joint venture the two "Western" and "Southwest Crete" plots, while negotiations

Navy and Air Force

Peliveries over the past decade have included 5 AIP submarines: 4 "PAPANIKOLIS" class type 214 and a completely upgraded type 209/AIP, as well as 2 "ROUSSEN" class, Super Vita type missile boats. Another two Super Vita boats are being built in Greece, but the





are in progress with regard to the lease agreements of the regions and the completion of the procedure. Greece believes that the theoretic, for the time being, gas fields shall become a basic source of national wealth in the coming years and that they shall contribute to the country's exit out of the long-term economic crisis that has been plaguing it for nearly a decade. And on the other hand, will enhance its geostrategic role and its deterrence against the on-going turkish revisionism and acts of bullying as well.

program has suffered very long delays. The main Greek naval units are: 4 Hydra class type MEKO 200HN frigates, of German origin, which entered service from 1992 to 1998, 6 KORTENAER "S" frigates of Dutch origin, modernized in the years 2007-2010, 3 KORTENAER "S" frigates that have not been modernized, 11 submarines (3 modernized Type 209-1100, 1 modernized Type 209-1200 with AIP, 3 non-modernized

Type 209-1200, 4 Type 214HN. Two additional Type 214HN are on contract but their status is uncertain yet) and 17 missile boats (5 British SUPER VITA, 4 modernized French Combattante III, 5 also French Combattante IIIB and 3 former German S148).

The Hellenic Air Force's major fighter aircraft force consists of 3 main types: F-16, Mirage 2000/2000-5 Mk5 and F-4. Deliveries over of the past decade have been 30 F-16 Block 52+ Advanced during 2009 - 2010. Very recently, it was decided to modernize 85 F-16 (55 Block 52+ and 30 Block 52+ Advanced) to F-16V (AESA radar) standard. In addition the country is modernizing 5 P-3B naval co-operation aircrafts. The Hellenic Air Force fleet has 17 Mirage 2000B/EGM-3 (delivered 1988 - 1992), 24 Mirage 2000-5Mk 2 (delivered 2007 - 2009), 32 F-16C/D Block 30 (delivered 1989-1990), 38 F-16 C/D Block 50 (delivered 1988-1992), 55 Block 52+ (delivered 2002-2004) and 34 F-4E upgraded to Peace Icarus 2000 standard, during 2003-2004. Finally, the Hellenic Air Force also has four Erieye EMB-145H (delivered in 2008) AEW&C aircraft.



ITALY: From "Mare nostrum" to "Mediterraneo Allargato" (Wider Mediterranean)

Italian exports to the countries in the Mediterranean area already account to 9.8% of all Italian exports. If the Gulf countries are included, the Italian total trade with the region is worth about €70 billion. Italy is also the 4th largest trade partner (after the United States, China and Germany) of the Italy aggregate MENA Region. Its main trading partners in the region are, in order of importance: Turkey (€17 billion total trade value), Algeria (€7.9 billion), Saudi Arabia (€6.7 billion), UAE (€6.3 billion), Tunisia (\in 5.1) and Egypt (\in 4.6). About the 65% of Italian import-export is transported by ship.

anon, areas where significant deposits as Zohr and Calypso have been found. It is worth noting too, that ENI has obtained the concession for exploration offshore of Crete, making Italian commitment in the area very intense in the near future.

The Mediterranean pipelines that currently carry gas to Italy are the Green Stream (operated 50% by Eni and 50% by the Libyan National Oil Company, through GreenStream BV) and the Trans-Mediterranean Pipeline (from Algeria, operated 50% by Eni and 50% by the Algerian company Sonatrach, through Transmed S.p.A). 2020 is also the year new gas will

ALL THE PIPELINES LEADS TO ITALY Gas pipelines already existing, under construction and currently being defined ELME .00. Green Stream Since 2004 IGI Poseidon Currently being defined TRANSMED Since 1982 TAP/TANAP Currently being implemented - 2020 **EASTMED** Currently being defined – estimated implementation 2025 **ELMED** Currently being defined (transmission grid) Turkish Stream Currently being implemented - 2020

In terms of energy security, the Mediterranean significance for Italy is unquestioned. It imports almost the 90% of its primary energy and Italian main energy companies have heavily invested in the Eastern Mediterranean, in Northern and Western Africa. To date, more than 37% of imported gas comes from the Mediterranean region; this percentage increases to about 50% if you factor in flows shipped by LNG carriers. Italy is a big stakeholder in the Eastern Mediterranean where the presence of ENI, SAIPEM and SNAM is massive between Egypt, Cyprus and Leb-



doubled to 20 b.m.c./year), completing the southern gas corridor. Looking ahead, the project will increase the weight of Mediterranean flows to about two-thirds of total flows. Italy's objective to become the southern hub for European gas, predictably

be delivered through the Trans Adriat-

ic Pipeline (10 b.m.c./year, which can be

around 2025, is linked to the development of substantial gas resources in the Eastern Mediterranean (the so-called Levantine basin that includes the offshore areas of Israel, Cyprus, Lebanon and Syria), as well as the Zohr gas field in Egypt (discovered by ENI in 2015, and currently operated by ENI, Rosneft and BP), as well as the construction of the TurkStream (a gas pipeline from Russia to Turkey through Black Sea). This would lay the ground for what could be seen as a doubling of the Southern Gas Corridor.

The link between TurkStream and the EastMed project (Israel-Cyprus-Greece) would be IGI Poseidon (an equally owned joint-venture between the Greek company **DEPA and Edison**), with a total yearly rated capacity of approximately 30 b.m.c. After 2025, the percentage of gas reaching Italy from the Mediterranean would therefore approach, ceteris paribus, three quarters of the country's total supply.

"Overseas Projection Force"

In order to secure its vital interests the Italian government has created a new comprehensive strategy: the «Wider Mediterranean» (Mediterraneo Allargato). The focus is the security of all the main routes, sources, and national interests in a wide area, from the Atlantic to the Pacific Ocean. Italy's role in the Mediterranean is also highlighted by its continuous effort in the UN peacekeeping missions. It is present in Lebanon (UNIFIL), Cyprus (UNFICYP) and the Balkans (UNMIK) being the bigest contributor of troops among western countries, not mentioning its "heavy" presence in the disintegrated Libya. Over the years, it has taken part in 22 peace missions. The Italian Strategy foresees a number of possible scenarios, including symmetric and non-symmetric operations such as:

- Counterterrorism and counter piracy
- Peace Keeping and Peace Enforcing
- Recovery and protection of Italian overseas infrastructures
- Seaways patrolling and shipping escort missions

The scope is to set a technological hedge over potential regional threats, with a full range of force multipliers available. Another pillar of this strategy is the participation of the Italian Armed Forces to International PK and PE missions, always including "combat" status. All personnel are 100%

Joint Stars 2018

by Stefano Peverati

The readiness of the Italian Armed Forces is prepared and tested in L annual joint exercises such as "Joint Stars". For the first time, the Joint Stars 2018 joint exercise, the most important at joint-services level in Italy, took place at full power under the direct management of the "operative arm" of the General Staff of Defense, i.e. the Inter-operational Summit Command. The exercise involved two phases: Livex, the real one, which took place in the beginning of June at Capo Teulada in Sardinia, during which a landing of units of the Regia San Marco (Marina) and Lagunari (Army) was simulated. The second simulated phase, however, was held at the Air Operations Command of Poggio Renatico in the second forthnight of the month, which allowed, inexpensiveness, to simulate a situation of Crisis Reponse Operation between two imaginary countries and the subsequent intervention from Italy on a UN mandate. The 500 soldiers present, under the orders of a Team Admiral (OF-9), had to be able to respond to threats of various kinds coming from Trinacrium, the hostile country, but also to win the hearts of the people of the distressed country, Carbonium.

In the first phase Livex, the naval and terrestrial structures had the main role, while in the second phase the joint services management was in the hands of the Air Force, with the task of managing the aerial means of all the forces in the field. The second phase missions provided for the use of at least 20 airplanes with an average of 100 daily sorties, with the aid of the Joint Terminal Attack Controller coordinating the ground attack units. "Joint Stars 18" allowed the Italian Armed Forces to achieve important results in the training field by improving and strengthening the Command and Control capabilities, JTAC, in missile defense (Theater Ballistic Missile Defense), cyber defense and planning and management of Joint Personnel missions Recovery.

The importance of the Joint Stars 2018 Operation was underscored by the presence on the final day of the Minister of Defense, Elisabetta Trenta, who was able to see full success in achieving the objectives set, making her compliments to all the staff involved. Together with the Minister attended the hierarchy of all the armed forces Chiefs of General Staff: Difesa Generale di Corpo d'Armata Graziano, Esercito Gen. C.A. Farina, Marina Ammiraglio di Squadra Girardelli, Aeronautica Generale Squadra Aerea Vecciarelli.



professional soldiers. All these result in new operational profiles for the Italian Armed Forces, especially the Italian Navy and the Air Force, both called upon to operate in completion in order to defend present and future platforms and aerial, naval and underwater pipelines. The Army and the Navy supply another basic tool to the structure: the amphibious brigade (reinforced upon request by assets supplied from other units) and the Special Forces for very fast and effective force projection. The basic projection tool the Italian Military has foreseen for a rapid overseas operation is called «Overseas Projection Force» (Forza di Proiezione dal Mare - FPM). The FPM is the instrument of first intervention in case of international crisis requiring the protection of Italian citizens, assets, and/or interests overseas.



Navy and Air Force

The main Italian naval units are: the Cavour class and the Giuseppe Garibaldi class aircraft carriers, (in January 2019 the CVL Cavour will undergo a major rehaul to increase its flight group capacity, for almost 2 years the CVL Garibalid will still operate the AV-8B Harrier Group), 3 San Giorgio class (San Giorgio, San Marco, San Giusto) amphibious assault ships, class amphibious assault ships, 8 submarines (4 Todaro class, 2 Primo Longopardo class, 2 Pelosi class), 4 destroyers (2 Orizzonte class and 2 Durand de la Penne class), 15 frigates: 8+2 Bergamini class (4 general purpose, 4 anti-submarine warfare + 2 General Purpose under construction), 5 Maestrale class, 1 Minerva class corvettes.

Deliveries over the past ten years have included the 8 Bergamini class frigates, the 2 Orrizonte class destroyers, the Cavour aircraft carrier, and the 2 (out of 4) Todaro class (Type 212) submarines. The Orizzonte class destroyer and Bergamini class frigates are the only ships capable of launching mid-range surface to air missiles of the Aster 30 type (120 km maximum range). Both types of vessel use the same type of vertical launcher, the MBDA SYLVER A50 VLS. The destroyers have a 48-cell missile launcher and the frigates a corresponding 16 cell launcher. Today an additional 2 Bergamini class (general purpose) frigates are under construction, with the final one expected to be commissioned in 2021.

A new class of ships is under construction adding to the main combatants fleet. This class is the so called PPA (Pattugliatori Polivalente d'Altura), coming in three different versions (PPA Full, PPA Light +, PPA Light). The first three are already under construction. The 2 x PPA Full type, a 6.000 tons vessels, will operate as DL (not FFG), with evolved EW, ATBM, AAW (32 cells Aster 30/15), ASuW and Land Attack capacities. The 3 x PPA Light +, a 4,500 tons vessel, will operate as FFGs adding capacity to the FREMM line, being armed with evolved EW, AAW (16 cells

Aster 30/15), ASuW capacity. The PPA Light, 4.200 tons, will operate as Oceanic OPV with limited AAW (Aster 15) and ASuW capacity.

The Italian Air Force's main fighter jets are of four main types: Eurofighter Typhoon F/TF- 2000A, Panavia Tornado IDS & ECR (Ret 7 & 8), AMX A/T-11 Ghibli and F-35 A/B. Deliveries over the past decade have been 27 F-2000 Tranche 1 upgraded to Block 5 (delivered 2007-2008), 47 F-2000 Tranche 2 and 21 Tranche 3a (delivered 2013 -2018), 11 F-35A (delivered 2016 - 2018) and 1 F-35B (delivered January 2018) The Italian Air Force also has 62 Tornado IDS and 34 AMX-11. Additionaly, has aerial refueling aircraft on strength: 4 KC-767A (delivered 2008 - 2009) and 6 KC-130J (delivered in 2005). Italy has also ordered 60 F-35A and 30 F-35B (15 for the Navy + 15 for the Air Force all suitable for embarking of FOB). The latter shall operate off the Cavour aircraft carrier.

Rickards Ricka

FRANCE: Reenforcing security and stability in the region...

France is present in every ocean and in most continents, thanks to the overseas territories which – in addition to their economic and strategic importance – provide a special relationship with countries far away from Europe, making it a recognised partner – and often the only European one – for numerous regional organisations. The French EEZ, which covers some 11 million km² – i.e. 3% of the surface of the world's seas – is second only to that of the United States. It contains numerous fisheries, mineral and energy resources, whose exploitation constitutes a major asset for its economy, in a global market experiencing very fierce competition.

France is also a major Mediterranean power. As a result of its geography, and the strength of the economic and energy ties with the southern shores of the Mediterranean, Paris both in the past and today takes a strong interest in Africa and the Middle East. It enjoys multiple common interests (many bi-national citizens, French investments, strategic supplies) in the area stretching from the eastern shores of the Mediterranean to the AraboPersian Gulf that is a priority in itself. This region, concentrates risks of serious conflict that may have a global impact on the planet. Apart from the existence of newly discovered substantial energy reserves, it is one of the main transit routes for the world economy.

The risk of a security void in the region is a potential challenge for the whole of the Mediterranean and Southern Europe. France and Europe have regularly been involved in crises arising in the Eastern Mediterranean, including Lebanon, crises linked to the Israel-Arab conflict, Libya and, today, Syria. The United States has dominant strategic influence in the region, but France is stepping up its presence and defence cooperation. It has defence agreements with four states in the region (Qatar, Kuwait, United Arab Emirates and Cyprus) and has established a joint military base in Abu Dhabi and Limassol port as well. A military cooperation agreement has been signed with Bahrain and France entertains close relations with Saudi Arabia. As a result, France over the past few years has deployed thousands of troops throughout the region. France's military operations abroad, including airstrikes in Syria, also serve another purpose. France is not the European Union's leading economic power, however by maintaining a formidable military and playing a role in military interventions abroad, it ensures that Paris still has a seat at the table in international negotiations, from talks on the future of Ukraine to Syria and Iran.

In this context, in order to safeguard French interests in the South Eastern Mediterranean hydrocarbon exploration, where **Total is active** **both in Cyprus and Egypt**, last spring boarding the French Navy frigate "Languedoc", which was patrolling in the region, the French Minister of Defense mrs. Florence Parly sent out the clear message that France would protect its interests, despite threats by Turkey that it would obstruct oil and gas exploration within territory it claims for itself. The same strong message of support to Greece and Cyprus, was sent recenlty by the French Foreign Minister Jean-Yves Le Drian, who reassured both Greeks and Cypriots that France is "*vigilant and in solidarity*" with its two European partners in issues that concern them with regard to tensions in the Eastern Mediterranean.

Moreover, this position was expressed in no uncertain terms at the European Council of March 22 by **President Macron** himself. Mr. Le Drian, also, stressed that France has always supported Cyprus's sovereign right to explore and develop its natural resources, in accordance with European and international law. "We have said this clearly to the Turkish authorities", noting that French warships dock in the island according to the program of bilateral Defense Cooperation that was signed recently between the Ministers of Defense of Cyprus and France.

Naval and Air Forces in the region

To guarantee its capability for autonomous reaction in the event of a crisis, France has a permanent National Emergency Force on alert, enabling it to constitute an Immediate Reaction Joint Force (FIRI) of 2,300 men that can be mobilised to intervene over a radius of 3,000 km in seven days. The forces engaged in this capacity are composed of the equivalent of a joint-force brigade representing 6,000 to 7,000 land troops, along with special forces, the required sea and air components and the associated command and support means. France is an important naval power that has been conducting carrier operations in the Mediterranean. In order to maintain its current operational tempo in Africa and the Middle East, Paris has been developing new models of partnerships, and cobbling together new "minilateral" or "plurilateral" military arrangements such as:

operations as part of a coalition (in the framework of the European Union, an established alliance such as NATO or on an ad hoc basis) in which France may take the initiative and command, or in which it will exercise a dominant influence

 operations as part of a coalition in which France will make a contribution, but where command is entrusted to an allied nation, most commonly the United States

France maintains a **strong naval presence** in the eastern Mediterranean sea that occasionally included a battle group around the aircraft carrier Charles de Gaulle (R91). Recently the only aircraft carrier of the French Navy returned





to service for trials last September. The carrier will join the fleet by the end of the year or early 2019, as the aircraft group (Wing) that operates Rafale M regains full operational status. The last two years the French naval presence consisted of one or two ships, including one of the Horizon class destroyers (with area defence capability), a FREMM class or Lafayette class frigate or smaller corvette size combatants. It is believed that the French Navy maintains a nuclear powered submarine (SSN) in the area, although French naval command never releases details about such deployments. It is able to rely on permanent naval deployment in one or two maritime regions, on its United Arab Emirates base and on several sites in Africa and recently Cyprus.

French Air Force maintains a number of Rafale fighters (of section size) in an undisclosed location in the area, believed to be northern Jordan. Rafales are collectively contributed by squadrons of the Armee de l'Air that operates the type as well as the French Navy Flottiles (squadrons) and their number fluctuates between 6 to 10 aircraft.

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U.S.A.: Facilitating the stability and the construction of a secure regional energy market



The United States leadership, both diplomatic and strategic, is required to asses the full geostrategic potential of East Mediterranean's energy sources and to use this assessment to reverse a worsening regional security situation. The United States conceives the Mediterranean, not as a sea, but as "a highway" for the projection of its power "deep into the heart of the land mass of Eurasia and Africa". Through NATO and its alliance with Israel, dominated the region during the Cold War and aspires to do so today, showing signs that it has returned to the region for good, after a short but critical period that will be labeled in the historical analysis as one of cognitive denial. A period during which Russia took the opportunity to reestablish itself in the region.

The United States has a vested interest in building a regionally integrated energy system around the Eastern Mediterranean. This is, partially, simply direct self-interest: increased regional cooperation creates a better business environment for American businesses across all sectors, not just energy. Both the U.S. and Russia, respectively the world's largest and second-largest producers of natural gas, are poised to play a vital role in brokering, and benefiting, from the coming "Eastern Mediterranean Big Game". The benefit to the United States by involving itself in the Eastern Mediterranean will be the creation of a system of stronger alliances that could, in time, help to reduce U.S. burdens and bring new capability to bear against the hard security problems that now face. Its overall goal is to build a redoubt of self-sustaining strength with the region's energy producers at the core. In this new era, it may discover that has distinct advantages. Increased domestic energy production will be a net benefit to the U.S. economy and industry and, over the next decade if more North American energy sources are sold internationally, then global energy prices could moderate and may even fall. If the East Med gas bonanza is simultaneously realized, it could multiply the geostrategic benefits of the global energy renaissance for the West. It could also combine to weaken the economic basis of the regimes in Russia and Iran, whose domestic rule and external outreach, both depend in large measure on high-energy prices.

Simultaneously, there is a growing competition between Washington and Moscow over the European gas market. Each side is attempting to prevail over the other and become the major leader of the gas market in Europe. According to the Quarterly Report on European Gas Markets of the European Commission, in the last quarter of 2017 Russia remains the main supplier of natural gas to the E.U., accounting for 43% of total gas imports, while LNG retains a share of just 12%. The fact that Russia, through Gazprom, steadily increases gas exports to E.U. countries and the Balkans,

appears to have alarmed the U.S., which is attempting to reverse the status quo and enhance its presence in the European LNG market, putting an end to Moscow's tactic, of using its natural gas exports to exercise economic and political influence in Europe.

U.S. main regional concerns...

Washington's interest in having and maintaining capable alliances in the region will become even greater. Both the U.S. and E.U. favorite the defense-economic alliance, with a well-shaped military character between Israel, Cyprus and by extension Greece, aiming both to replace the strategic depth Israel lost after the termination of the defense cooperation with Turkey, and defend Cyprus' rights and jurisdiction over the EEZ of the island, denied even while U.S. company Noble Energy was carrying out exploratory drilling off the island's southern coast. The same applies to the tripartite alliance between Egypt, Cyprus and Greece. Over time, the economic returns from tapping East Med's energy will enable Israel, Egypt, Cyprus, and Greece to build up their own defenses and dedicate real capability to tackling the hard security challenges in the wider region. U.S. strategy should take advantage of this and seek to enlist the full support of its allies, in making a better business environment for the South Eastern Mediterranean.

Since the first natural gas discoveries in Israel and Cyprus, Washington has supported Israeli and Cypriot plans to develop the resources in their respective EEZs and defended U.S. economic interests in the region, represented by Noble Energy. In parallel, however, Washington has advocated, including revenue sharing from energy resources in Cyprus talks, and has quietly urged Cyprus and Israel to remain open to Turkey's involvement in future projects when political circumstances permit. There are, nevertheless, obstacles to the above approach, such as the deterioration of Israeli-Turkish relations that created serious concerns in Washington; the Obama administration was keen to shift responsibilities for maintaining stability to regional powers. The war in Syria has further complicated U.S.-Turkey relations, which have recently been under additional strain by the 2016 failed coup and Ankara's request for the extradition of Fethullah Gulen, as well as the strong rapprochement with Russia and Iran and the possible purchase of the russian A/A system S-400 Triumph, which caused the freezing of the Turkish F-35s fighter aircrafts delivery.

With the growing Russian involvement in Syria, however, the prospect of Israeli-Turkish rapprochement cemented by a pipeline deal would be particularly welcome in Washington, leaving aside the current troubled relations. This cooperation would also relaunch the prospect of a settlement

of the Cyprus' question. The new Israel-Cyprus-Greece alliance may offer Greek Cypriots, as well as Greece, an enhanced security prospect and thus greater flexibility towards Turkey and in negotiations with the Turkish Cypriots. All in all, a similar scenario would provide the United States with many political benefits, in the U.S.A.-Erdogan relations, including reduced Turkish dependence on Russian gas and possibly, if other resources are discovered in the Eastern Mediterranean, support for the E.U. energy diversification strategy, another ongoing concern in Washington.



The "new Cold War" in the Mediterranean

Securing a prosperous and safe future for the region will not be easy. In the Cold War era, the threat to U.S. national security interests in the Eastern Mediterranean came not from vulnerable or collapsed states, or from the diversity of revisionist actors and ideologies that now face, but from Soviet surface ships and submarines. Today's threat matrix is larger in geographic scope and broader in diplomatic complexity. The U.S. present-day challenges are also potentially far more grave, because of the possible spread of nuclear and ballistic missile technology in a region where ruling regimes could be more willing to accept risk, in pursuit of foreign ambitions, than the old relatively conservative leadership of the Soviet Union in the late Cold War. NATO, back in 2011, released its Alliance Maritime Strategy that tried

ITALY

now active

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to synchronize the alliance's maritime efforts with the 2010 NATO Strategic Concept. Clearly, this was a welcome development that revealed the growing importance of maritime strategy in 21st century international politics. Nevertheless, the 2011 Strategy does not reflect the deep strategic changes that occurred since then in the region of the Eastern Mediterranean, due to the Syrian Civil War mainly, and the subsequent extensive Russian involvement there. In contrast, Russia revised its own Maritime **Doctrine** in 2015, modifying its strategic center of gravity from a post Cold War land force to a Naval one. Helping Assad was never the main goal. It was part of a broader Russian strategy to rebuild its geostrategic position.

The Russians have deployed weapons to Syria that have nothing to do with the war against terrorism. They have reportedly sold a highly capable anti-ship cruise missile "Kalibr" to the Syrians

and deployed advanced air defense systems there. The terrorists of ISIS have neither ships nor planes. These systems are aimed at denying NATO the ability to operate freely in the Eastern Mediterranean, as well as helping to crush all opposition to Assad. Syria's Russian-supplied air defense system ranges well into Turkey, and is as close to an offensive air-defense system as can be imagined. It is used to challenge Turkey's and NATO's ability to fly even in Turkey's own airspace. Putin has also deployed long-range air-superiority fighters that can operate all along the southern NATO flank. The recently downed russian Il-20 advanced surveillance aircraft, by the same S-200 A/A system Russia sold to Syria, was part of the nucleus of a sophisticated long-range air-defense and precision-strike complex, which has been recently upgraded with an additional S-300 A/A battery installed.

Simultaneously, U.S. intelligence agencies are closely monitoring Russian military activities in Libya for signs that Moscow may soon build a military base in the divided North African state. There are sound intelligence reports that Russia recently moved troops and missiles into Libya in a bid to enforce a new stranglehold on the West, adding that Vladimir Putin wants to make Libya "his new Syria" and that "Russia's devastating Kalibr anti-ship missiles and state of the art S-300 A/A missile systems are also now believed to be on the ground in Libya". These intelligence report that Moscow aims through this move to seize control of the biggest illegal immigration route to Europe, with one government source warning that this move could turn on a fresh tidal wave of migrants crossing the Mediterranean "like a tap". Moreover, the british newspaper "SUN" recently revealed that: "Dozens of officers from the GRU military spy service, as well as its Spetznaz special forces wing are already on the ground in eastern Libya, initially carrying out training and liaison roles".

Two Russian military bases are already functioning in Benghazi and Tobruk, using the cover of the controversial Russian private military forc-



es that operate in eastern Libya since March 2017, including the RSB Group that has deployed several dozen armed mercenaries to join forces with Haftar militias. News reports from Libya stated recently that the RSB Group mercenaries are engaged in advance work, scouting locations for a Russian military base in Tobruk or Benghazi. In addition to RSB, the notorious "Wagner Group" of Russian mercenaries is also operating in eastern Libya, reportedly to service Gen. Haftar's Russian-supplied weaponry. Wagner mercenaries are also helping set up an intelligence network for the general's forces.

The push for a Russian military presence in Libya is being led by retired Maj. Gen. Khalifah Haftar, whose militia forces, the Libyan National Army, control eastern Libya, after Islamist rebels, backed by the Obama U.S. presidency, overthrew and killed Libyan strongman Moammar Gadhafi in 2011. Warlord

Khalifa Haftar has reportedly given the go-ahead for the Russians to deploy in Libya in a bid to minimize the E.U. influence, especially the Italian one. Haftar is also seeking the Russian, in addition to Egyptian and the UAE, help to extend his power from the east to the entire country, especially Tripoli.

Back to the sea front. Russian submarine activity according to NATO reports, has increased the Eastern Mediterranean where the Soviet base in Tartus can provide them with a robust maintenance facility. These submarines may threaten both seaborne and land targets and if they range the entire Mediterranean, no NATO capital that happen to be within the range of Kalibr missiles installed on the naval platforms, is safe. These moves will be a problem for the alliance, not only strategically, but in terms of the war on terror. NATO has long relied on its ability to strike terrorist targets along the North African coast and throughout the Middle East from Mediterranean-based ships, subs and aircrafts participating in the Standard NATO Maritime Group 2 (SNMG2), which nowadays patrols the axis Black Sea-Aegean-South East Mediterranean. President Putin has found a brilliant way to impose either great cost or great risk on the U.S. to pressure and possibly even split NATO, and to start re-establishing Russia as a global military



power - his stated strategic objective.

In his book "Entangled Allies: U.S. Policy Toward Greece, Turkey, and Cyprus", former US Ambassador to Athens Monteagle Stearns wrote: "The interests of the US in the Eastern Mediterranean are basically military, and our ability to protect them depends on agreements for military facilities that we conclude from time to time with local governments". American strategy should consider the Eastern Mediterranean not as a European subregion, but rather the nexus of the Middle East, North Africa, and Southern Eu-

Defensive Positions at Bassel al Assad Air Base



rope. Thus, its allotted military force there should reflect the aggregate security-environmental demands of these three locales. It must also recognize the economic constraints faced by the Pentagon and operate with "economy of force".

Firstly, the message to its closest allies in NATO couldn't be clearer: "We are making European security a high priority, while still keeping "economy of force" in mind". This is classic "assurance of allies" -a theme emphasized in the U.S. National Security Strategy- at an affordable cost. Signaling U.S. support to NATO allies now, will likely pay off in the future: It is precisely these allies to whom it is most likely to turn to for assistance down the road. Along with assurance, it also gains credibility and persuasiveness when asking its allies to spend more on defense in NATO forums. Secondly, this Mediterranean force pays a triple dividend in that it responds to the strategic challenges faced by three geographical commanders: Central Command, African Command, and European Command. Finally, the Russians will see a powerful naval response, and not one necessarily aimed only at them. Most important, they will perceive that a security vacuum no longer exists in the Mediterranean.

A New Maritime Strategy

In the past, NATO's naval "cloud" in the troublesome Eastern Mediterranean benefited from Turkey's military capabilities, as well as from other allied naval powers' deployments such as France and the United Kingdom. However, any U.S. diplomacy aimed at facilitating stability and the construction of a secure regional energy market will **drastically benefit** from reconstituting the 6th Fleet. Diplomacy usually fails in deeply contested regions, without the requisite hard power to support it. Shoring up its NATO allies in the region, which is also a crescent of growing Middle East littoral instability, would have several advantages: protecting the Atlantic Alliance; helping safeguard the energy deposits that have been, and are being, discovered in the region; ending the power vacuum that the 6th Fleet's virtual departure caused; and reasserting U.S. influence where its absence can only lead to more uncertainty. Naval strategy here equals enlarging the presence of the combat fleet, specifically one that can project amphibious and strike power ashore. U.S. policymakers' recollection of this essential fact of sea power, seem to re-shape the U.S. strategy to regain influence in the region, that is commensurate with the commercial and security interests and its closest allies and partners.

Washington, naturally, is expected to lead NATO posture in the Mediterranean, however cannot alter its two present naval hubs, the Western Pacific and the Gulf, for a more robust permanent presence in the Eastern

Mediterranean due to tense security environments in these regions. Furthermore, due to budgetary constraints, the U.S. is unlikely to drastically increase its surface and submarine arsenals. Under these circumstances, the strategic significance of littoral states in the NATO alliance is increasing. In this context, Standing NATO Maritime Group 2 (SNMG2) monitors the substantial Russian naval activity in the Eastern Mediterranean and plan the schedule for its routine exercises in order to enhance NATO's awareness of this activity. SNMG2 ships including the Netherland's HNLMS De Ruyter as flagship, French HMCS Ville de Quebec, Greek HS Elli and Spanish ESPS Cristobal Colon, in coordination with additional Allied navy units in the area, is supporting Maritime Situational Awareness throughout the region.

In the meantime, additional measures can be taken to bolster the sub-regional security architecture that has begun to emerge on its own. Increased cooperation, especially at sea, between the United States, allied and friendly states committed to the liberal order in the East Med, is a positive sign that the situation is being addressed with the seriousness it deserves. Several Allied nations border the Eastern Mediterranean Sea and have a vested interest in maintaining awareness of activities in the region. The concerted effort by Egypt, Israel, Greece, and Cyprus to increase their cooperation, largely in response to what they see as Turkish threats, is a reminder that economic relations can deepen into security ones. And so they have.

In this context, the U.S. Assistant Secretary of State for European and Eurasian Affairs Wess Mitchell is expected to visit Cyprus in November. He has stated, in numerous occasions, that Greece and Cyprus play an important part in the US strategy in the Eastern Mediterranean. "I will be traveling to Cyprus in a few days and what we really try to do there is to have U.S. more present not only in the bilaterally with these countries, but in **the Greece**, *Cyprus and Israel dialogue*", he said. "*I think there is a real case to be made* for seeing eastern Mediterranean as a frontier and a very vulnerable frontier".

Realistically, however, without an increased and permanent U.S. commitment, any alliance would be unable to establish an enduring deterrent in the face of emerging challenges. The U.S. Navy's 6th Fleet current presence in the Mediterranean aims to match its strategic capabilities as well as NA-TO's, during a time of instability as is the current state of affairs, given the recent turmoil in Libya and Syria, as well as the troubled relationship with Turkey and the monitoring of Russian activities.



Additionaly, U.S. efforts are coupled with a tangible increase in the allied nations' naval capabilities. Without a doubt, such capability development would necessitate an increase in military spending, more NATO nations would need to meet the 2% military expenditure/GDP ratio, although Cyprus and Greece, mainly, experience grave economic restrains. Considering the fact that the Trump Administration has already asked for more contributions from its NATO allies, the Allied naval posture in the Mediterranean should be addressed more of a defense economics and foreign policy issue, as opposed to a military strategic calculus concerned with force-to-force ratio.

U.S. Naval and Air presence in the region



U.S. Navy's 6th Fleet, responsible for the Mediterranean, has recently increased its rather depleted presence in the past, due to the Syrian civil war and the extensive Russian presence in the region. The deployment patterns of U.S. ships has taken them to the Eastern Mediterranean, to monitor and deter any possible hot incident that may occur. The aim is to act as an all-purpose, permanent American Mediterranean Task Force. The 6th Fleet, is composed of a Carrier Strike Group (CSG), comprising 4 Arleigh Burke class Destroyers equipped with Tomahawk missiles and 2 submarines.

The Harry S. Truman Carrier Strike Group (CSG) was present in the region, composed of the flagship Nimitz-class aircraft carrier USS Harry S. Truman (CVN 75); the nine squadrons of Carrier Air Wing (CVW) 1; Ticonderoga-class guided-missile cruiser USS Normandy (CG 60); and Arleigh Burke class guided-missile destroyers of Destroyer Squadron (DESRON) 28, USS



Arleigh Burke (DDG 51) and USS Forrest Sherman (DDG 98). Other Harry S. Truman CSG assets operating now in the region include Arleigh Burke-class guided-missile destroyers USS Bulkeley (DDG 84), USS Ross (DDG-71) and USS Carney (DDG 64). The submarine escort is consisted of the Ohio Class USS Georgia (SSGN-729) which may carry up to 154 Tomahawk missiles, and the Virginia Class USS John Warner (SSN-785) which may carry only up to 12. Their current positions are unknown.

At the time of writting the Harry S. Truman Carrier Strike Group was integrated as part of a NATO Expanded Task Force during the tactical phase of exercise "Trident Juncture 2018" in Norway. The exercise began on October 25th and ended on November 7th. It is unknown whether it will return to its original station in South East Mediterranean, or will be replaced by another Carrier Strike Group.

CVW-1 squadrons, embarked on Harry S. Truman include: the "Red Rippers" of Strike Fighter Squadron (VFA) 11; the "Checkmates" of VFA-21; the "Sunliners" of VFA-81; the "Knighthawks" of VFA-136; the "Rooks" of Electronic Attack Squadron (VAQ) 137; the "Seahawks" of Carrier Airborne Early Warning Squadron (VAW) 126; the "Proud Warriors" of Helicopter Maritime Strike Squadron (HSM) 72; the Dragon Slayers" of Helicopter Sea Combat Squadron (HSC) 11; and a detachment from the "Rawhides" of Fleet Logistics Support Squadron (VRC) 40.





The Security Challenges

 $P_{\rm ast}$ and recent history of the Mediterranean has taught us that there are no unilateral, political or military, solutions to stabilise the region. Several ongoing issues threaten the exploration, production, and transit of energy resources in the Eastern Mediterranean, especially the security environment, the territorial disputes, and the macroeconomic climate. Recent developments, together with the uncertain future of the wider area (Middle East, North Africa), suggest the need for enhanced security. Ongoing territorial disputes between several Eastern Mediterranean countries, especially the Turkey-Greece-Cyprus disputes over their respective EEZs, could hinder exploration and development in the region, particularly in the offshore Levant Basin. Disputes over maritime boundaries jeopardize joint development of potential resources in the area and could limit cooperation over potential export options.

At the same time, the **security requirements** of the already existing or to be constructed Critical Energy Infrastructures (CEI) are highlighted. Offshore drilling rigs, either fixed or floating, underwater drill sites, underwater pipelines for connecting the rigs to the drill sites, pipelines transporting the gas produced from platforms to the coast, and finally the EastMed and EuroAsia Interconnector pipelines, make up a very extensive energy infrastructure grid, extending across the South Eastern Mediterranean and reaching Crete, the Greek mainland and onwards



to Italy. There are two main sources of potentially significant security threats in the region and possibly a third: Turkey's revisionism and Islamic terrorism, as well as Russia's intention to interdict any possible change in the current energy status quo in the region, or turn the odds on its favor.

C* TURKEY: From West's stability pivot turning to a potential threat...

In the post-Cold War era, Turkey announced its ambitious strategic expansion to the old Ottomman regions and beyond, using as instrument the oil and natural gas pipelines, stressing the importance of the hydrocarbons of the post-Soviet democracies and those of the Middle East. After the collapse of this strategy, an uneven energy relationship with Russia was established, which eventually became dependency. Since 2001, Turkey's consumption of natural gas has experienced one of the fastest rates of increase in the world. At its peak in 2011, the country consumed roughly 1.5 t.c.f. annually. Around 60% of that fuel comes from Russia, and another 19% from the Kremlin's closest strategic ally, Iran. In effect, the President Tayip Erdogan has maneuvered Turkey into a strategic prison of its own making. In Turkey, Russia and Iran have acquired a new energy dependent client. Both powers have thus taken a significant step toward neutralizing the only natural bulwark between them and their ambitions in the East Mediterranean.

In an agonizing effort to minimize its energy dependency from Russia, as well as to confirm its aspirations of becoming a significant energy hub between East and the West, Turkey is the only country in the region that feels left out from what is happening in the energy sector in the Southeast Mediterranean. It has neither endorsed nor ratified the New 1982 Law of the Sea Convention, which defines a state's rights to the exploitation of its coastal marine waters, i.e. the definition of the EEZ. It is, however, surprising that the country took advantage of the new Convention's provisions and declared an EEZ in the Black Sea in 1986. The boundaries with what was then the Soviet Union were based on the previous 1978 agreement for the Continental Shelf. Later, in December 1997, Turkey agreed and delimited an EEZ with Bulgaria.

In its effort to find alternative energy sources for its internal consumption, as well as for the realization of its strategic aims to become a significant peripheral stakeholder, Turkey strives to subverse the current status in the South East Mediterranean with high risk actions and statements, aiming to become a significant player in the planning of new energy routes in the re-



Turkey's Oil and Gas Pipeline Network

gion. Turkey declares urbi et orbi that as far as the energy resources of the Cyprus EEZ are concerned, the two communities, Greek Cypriots and Turkish Cypriots, both have equal rights. Having refused to recognize the Republic of Cyprus, as an independent and sovereign state, a member of the U.N. and the E.U., Turkey is actively contesting the right of the Republic of Cyprus to exploit underwater energy resources. Unfortunatelly for Turkey, these resources have currently been identified, in the maritime area that extends to the south of the Cyprus coasts, which belong to the Republic of Cyprus, and not to the Northern part of the island occupied by the Turkish armed forces.

Turkey goes far beyond the statements of contention, refusing to recognise the bilateral EEZ boundary agreements between Cyprus, Israel, Egypt and Lebanon. It also does not recognize the agreements for the allocation of exploration and production in Blocks of the Cyprus EEZ, that the government of the Republic of Cyprus has signed with the aforementioned foreign energy colossus. Specifically, the dispute concerns gas Blocks, i.e. areas into which waters around Cyprus have been divided in the case of Blocks 4, 5, 6,

and 7, through which - according to Ankara - passes the Turkish maritime border.

It has the habit of carrying out air and naval exercises in the area concerned, deliberately scheduling these for when the Republic of Cyprus has issued NAVTEX warnings for the facilitation and safety of international shipping during exploratory - drilling activities by companies operating in the Blocks of the Cyprus EEZ. In February 2018, made a bolder gesture when turkish warships blocked and temporarily cancelled the planned exploratory drilling by the floating drilling rig "SAIPEM 12000" of the Italian company ENI at the Soupia (Block 3) drill site of the Cyprus' EEZ, located south-east of the island between Cyprus and Lebanon, without any Italian or even E.U. realistic reaction. From then on, the turkish President Tayip Erdogan, as well as other members of his government and officials are launching multiple oral threats about their determination to interdict any attempt of planned drilling.

In order to strengthen the above message, the Turkish government decided to rename its drilling ship "Deep Sea Metro 2", acquired in 2017 from South Korea by TPAO-Turkish Petroleum Corporation (Turkiye Petrolleri Anonim Ortakl) to "Fatih" (the Conqueror: Fatih Sultan Mehmet II was the Ottoman ruler who conquered Constantinople in 1453. Mehmet II also conquered many more territories, like Serbia, Morea, Bosnia, Albania, the Black Sea Coasts). In its drilling activity "Fatih" is being supported by the research



vessel RV "Barbaros Hayreddin Pasa" also operated by TPAO (Barbaros Hayreddin Pasa, was an Admiral of the Ottoman fleet, born in the Greek island of Lesvos. Barbaros is reminded for its victory in the battle of Preveza, being also the author of a number of raids on the Italian coasts, up to the Ligurian town of Diano Marina, in the 16th Century).

At the time of writting, Turkey tried Cyprus and Greece's intentions when the Turkish seismographic vessel "Barbaros" had, on October 17th, been off the coast of Cyprus at the margins of blocs 4 and 5 of Cyprus' EEZ, preparing for illegal gas exploration following the issuance of a NAVTEX which violated the sovereign rights of the Republic of Cyprus and Greece in their EEZ and Continental Shelf respectively. The southeastern edge of the area tied up by the Turkish NAVTEX was at a distance of about 100km of the first two ExxonMobil drilling targets, in Bloc 10 of Cyprus' EEZ. The western edge of the area was 220km from Rhodes, and the eastern edge was 150km from the coast of Paphos. The Greek frigate HS "Nikiforos Fokas" was only a few nautical miles from the "Barbaros", which was reportedly in plain sight of the Greek vessel. The Greek warship remained within the limits of Greece's Continental Shelf and was shadowing the "Barbaros" in a signal that Greece has the necessary deterrent force. When the turkish vessel tried to violate the Greek Continental Shelf, the greek warship warned it against and interdicted its course.

Ankara following its strategy in the field of energy, on the 31st of October sent the drilling ship "Fatih" to start the first drilling at "Alania 1" South East of Antalya and at "Finiki 1" West of Antalya, within the turkish continental shelf and 50km. approx. from Kastelorizo island. According to turkish announcements the drilling operations are planned to last till April the 29th

TURKEY'S OFFSHORE EXPLORATION OF GAS AND OIL South Cyprus and Greece's Attempt to "Fait Accompli" Natural Richness in the Eastern • The underground resources explored in the Eastern Mediterranean: After the discovery of the resources in the nean, the Greek Cypric Natural gas: 3.45 trillion m3 They mapped out the so-called Exclusive Economic Zone and the Eastern Mediterrar Offshore Jurisdiction Zone • Oil: 1.7 billion barrels Approximate worth: 3 trillion dollars Greece claimed rights on the maritime zone of Turkey With this natural richness, the region covering the Eastern Mediterranean ar Cyprus Island is inevitably one of the most critical regions in the world They annexed the energy fields owned by Turkey and the TRNC to their own zone Turkey, US, Russia, UK, France, Italy and Since 2008, the Greek Cypriot Adminis ved 40 warships in the The aim of these countries: To have a share of the energy resources in the reg Make deals on maritime sabotage restriction Issue drilling license to various countries and Sign share and distribution agreements wir countries that have a coast in the Mediterra (Israel in particular) except Turkey All of these efforts are against internat They overlook Turkey and the TRNC's rights European Union (EU) supports the Greek Cypriots and Greece

2019. This somewhat timid action was due to the fact that "Fatih" has not yet the appropriate specialized crew for its expedition, which is proved most difficult to be attracted in order to work for the accomplishment of the turkish plans. In addition, the recent debacle of turkish Lira and the according downfall of turkish economy, have seriously undermined its aspirations of becoming a strong stakeholder in the region that is able to act accordingly to its declarations/threats, making a "tour de force" either by its planned drillings or by more bolder gestures with its warships.

Another potential conflict in the region, is the one between Turkey and Egypt over the rich Zohr gas field. Ankara does not recognize the 2003 Cypriot-Egyptian EEZ accords and the 2013 sea border agreements between Cairo and Nicosia, which assign the Zohr gas field to Egypt. Last February, the Egyptian government warned Turkey that further interference in this area would be met with a decisive reaction. The relations between Turkey and Egypt are already strained. Though Turkey was a supporter of the Egyptian Brotherhood and Mohamed Mursi, who took power in Egypt in 2011, nowadays there is no love lost between Ankara and Cairo, because in 2013 the Trukey-friendly government was toppled. In a 2016 interview, President Erdogan gave vent to his anger, calling the current Egyptian President Abdel Fattah al-Sisi a "putschist" who killed thousands of his own people.

Although Turkey set the goals for its energy upgrading long ago, due to the feeling of the "danger" of beeing left behind in the region's "Big Game", seems to act jittery, eventually undermining its own strategy and position. In this context, all the major stakeholders have decided not to permit a repetition of last February's turkish bullying, sending significant naval units to safeguard their respective interests. As a result, during 2018 there has been an increased U.S. naval presence which, apart from monitoring the developments in Syria due to the increased presence of russian naval vessels, is also connected straightforwardly to the downward turn in U.S.-Turkish relations and the former's intention to inderdict possible provocations from Ankara.



French and Israeli naval and air units are following suit.

On the other hand, U.S. Assistant Secretary of State for European and Eurasian Affairs Wess Mitchell, recently stated that what the U.S. has tried to do in the Eastern Mediterranean was first and foremost to stabilize their relationship with Turkey. "I think we have come a long way in the last few days with the release of Pastor Branson. We are hoping to move the Turkish

Navy and Air Force

The main **Turkish naval units** are 16 frigates: 8 ex-US Oliver Hazard Perry class, 4 MEKO 200TN Block I and 4 MEKO 200TN Block IIA/B, 9 Corvettes: 3 ADA class built in Turkey under the MILGEM National Ship Program, and 6 D 'ESTIENNE D'ORVES class of French origin, 12 submarines: 4 Type 209/1200 (2 upgraded), 4 PREVEZE class Type 2009T1/1400 and 4 GUR class 2009T2/1400 mod and 21 missile boats.

The 8 ex-US Oliver Hazard Perry class frigates were delivered in 1998-2001. They are the only naval assets with an area air defence capability equipped with SM-1R mid-range anti-aircraft missiles. The 4 Track IIA/B frigates of German origin entered service during 1995 to 2000. The 4 MEKO 200 4N Track I frigates, also of German origin, entered service during 1987-1989. The three Turkish-built ADA class MILGEM corvettes, entered service during 2014-2018 and the 6 D'ESTIENNE D'ORVES' class were acquired second-handed from France during 2001 to 2002.

DELIVERIES OVER THE PAST DECADE HAVE INCLUDED:

- 3 ADE class corvettes (one more expected to be delivered in 2019)
- Completion of the modernization program for 4 GIRESUN class frigates (formerly Oliver Hazard Perry class). This involved the installation of a ESSM RIM-162B missile Mk41 vertical launch missile system (22 km range), retaining the Mk13 launcher for the SM-1MR missiles (37 km range) and installation of a new GENESIS combat system.
- Completion of a modernization program for the Track II A/B frigates. This entailed the installation of two Mk41 vertical launch system 8 cell



government away from S-400 and help it look at other options and keep Turkey not only on a trajectory towards the political west, but also towards the strategic west. And I think that is in Turkey's interest as well" Mitchell remarked. Maybe, Turkey's recent exemption from US sanctions against Tehran, allowing to continue buying and thus importing oil and gas from Iran, was a gesture of good will in the same direction.

modules and replacement of the Mk29 Mod 4 rotating launcher, installation of a new 3D SMART-S Mk2 air and surface surveillance main radar and installation of a new GENESIS Combat Management System.

• Completion of the modernization program for the 2 type 209/1200 submarines with the installation of the American Raytheon INS system, German Zeiss periscopes and the underwater version of the ARES-2 electronic support system (ESM) by Turkish-Aselsan.

UNDER CONSTRUCTION TODAY ARE:

- the fourth Turkish-built ADA class MILGEM corvette.
- The first (out of a planned acquisition of four) Turkish-built ISTANBUL class frigates under the MILGEM national ship program. Estimated delivery of the first ship is in 2020.
- 6 type 214TN AIP submarines although the program is suffering from major delays. Estimated delivery of the first submarine is in 2020 and then deliveries of one per year for each new submarine until 2025.
- An ANADOLU class aircraft-helicopter carrier, capable of carrying 6 F-35B (VTOL) fighters (delivery unknown), 4 attack, 8 utility and 2 anti-submarine helicopters.

The **Turkish Air Force's** major fighter aircrafts belong to 2 main types: F-16 and F-4. Deliveries over the last decade were of 30 F-16 Block 50+ Advanced during 2011-2012. In 2005 it was planned to upgrade 162 F-16 aircraft (99 Block 40 and 73 Block 50) to F-16 CCIP (Common Configuration Implementation Program) standard. Their capabilities are almost identical to those of newly-acquired F-16 Block 50+ Advanced. Also being structurally upgraded since 2015, are 35 F-16 Block 30 that are currently further modernized. During 2001-2003 Turkey completed the upgrading of its F-4E aircraft to F-4E 2020 Terminator standard. Today, 42 aircraft of this type are operational. The Turkish Air Force has 4 E-7A (737-700) Peace Eagle AEW&C aircraft (delivered 2014-2015), and 7 KC-135 Stratotanker Aerial refuelling aircraft, that were delivered used from the USA during 1995-1998. Finally, Turkey has ordered 100 F-35, which are being funded gradually and so far acquisitions account for 30 of them. The first 2 aircraft ordered that were expected to be delivered in 2019, were typically delivered in the United States and remain in American soil since the summer 2018, due to the downgrading U.S.-Turkey relations.

Apart from the really impressive armaments programme, one must have in mind that the Turkish Armed Forces are still struggling to recover from the mass purges that began on 27 July 2016, that is two weeks after the failed coup attempt. The officer group most affected by the purges was the **Turkish Air Force (THK)** pilots. Before the attempted coup the THK had two pilots for each of its 320 combat aircraft. The dismissal of 240 pilots reduced that ratio (aircraft/pilots) to almost 1/1.2 already from September 2017. It is obvious that for the THK to get back to its pre-coup level in terms of available pilots, training e.t.c. may take up to 2-3 years. From the above figures it is evident that not only the Turkish President Erdogan doesn't trust his county's officer's Corps, but if he continues the purges with the same pace, sooner of later he will be confronted with the eloquent question of what is the real strength of the Turkish Armed Forces, and how it may realize its aims/threats in both regions of the Middle East and the South East Mediterranean.

The Islamic Terrorism

Given its strategic importance and evident vulnerability, Critical Energy Infrastucture (CEI) is an attractive target for terrorist attacks. Terrorism is one of the tools used by organizations and individuals that wage asymmetrical warfare against a superior foe. Some groups use terrorism as the first step in an armed struggle, for example to raise public support for its cause up to the point of sufficient strength to conduct conventional warfare. It can sometimes also be used as a supplement to conventional warfare, when it is employed to distract the enemy and distract and disrupt the enemy by attacking vulnerable targets at the enemy's rear. This strategy is used by the Afghan Taliban and also by ISIS.

In many countries where insurgencies have occurred, CEI was an important element, target, or an instrument of warfare. The entire infrastructure supporting the oil and refined products industry is quite complex and is vulnerable to damage by insurgencies with belligerent purposes. Centralized energy systems controlled by the government attract insurgent attacks in order to damage the government's credibility in the eyes of its citizens and potential investors and thus undermine its funding and economic stability. CEI is therefore an attractive target to control or to damage by insurgent groups.

Al-Qaeda is responsible for a number of terrorist attacks against CEI, mostly located in the Middle East and North Africa region (MENA) between 1998 and 2013. According to Global Terrorism Database (START, 2015), these attacks include, for example, the 2002 attack on an oil tanker in the Bay of Aden; five attacks on gas pipelines in Algeria; 22 attacks on

Number of attacks against CEI by perpetrator				
Perpetrator	Number of attacks (2000-2014)			
FARC	170			
Baloch Republic army	94			
ELN	52			
Al-Qaeda	42			
РКК	23			
ISIS	21			
MEND	20			

Source: START, 2015a

pipelines and four attacks on oil production and refining facilities in Yemen; three attacks on gas system and power generation capacities in Iraq; and an attempted attack on the world's largest oil producing center Abqaiq in Saudi Arabia in 2006. In January 2013, one of the largest terrorist attacks in the history of energy industry took place in In Amenas, Algeria. Over four days an Al-Qaeda franchised group attacked the In Amenas natural gas production facility. The assailants took foreign workers as hostages purposefully not harming Algerian employees. 40 workers were killed during the attacks and the facility was shut down. A bullet hit a high voltage transformer causing a blackout in the area and a shutdown of the facility. Later, the assailants detonated a bomb at one of the processing trains that caused extensive explosion damage and a large fire at the facility. The production shutdown caused serious economic losses to the Algerian government, considering that the In Amenas facility alone contributes 20% of the country's total natural gas production.

The so-called Islamic State is a militant movement that has declared



a Caliphate in the territory of western Iraq and eastern Syria, territories that encompass about 6.5 million residents as of 2014. While the group has evolved from al-Qaeda in Iraq and has members with terrorist history, it is much more than a terrorist group. The group has demonstrated its ability to conduct insurgent warfare across large swathes of territory and has also engaged in conventional military battles against Syrian and Iraqi forces. ISIS as an insurgent militant group expressed a profound interest in CEI. Control over oil wells and other CEI generated substantial revenues and provided the militants with means to continue with their military efforts against the Iraqi government. In addition, CEI has been considered as an attractive target for the ISIS forces and their leaders in their effort to weaken Bagdad and its military capabilities. CEI controlled by ISIS was also one of the primary targets of the Anti-ISIS air campaign, considering its importance in the financing of its operations. The importance of CEI in asymmetric warfare is unquestionable regarding the threat posed by ISIS in the Middle East and North Africa. Specifically, attacks on oil infrastructure are an imminent threat to the stable balance of powers, global realm, energy prices, and therefore this threat to CEI should be of major concern to Western countries.

On Egypt's Sinai Peninsula, a separatist movement is active, the Egyptian branch of the Islamic State, with particularly close affiliations to ISIS, aiming to autonomy for the province and the establishment of a caliphate. The movement essentially began in 2011, taking advantage of the collapse of the Hosni Mubarak regime and the turmoil that followed in the country. There followed successive Egyptian army operations in the region to suppress the separatist movement, which were stepped up after the current president General el Sisi came to power in 2013. Very recently, in February 2018, forces of the Egyptian military and the interior ministry launched yet another large-scale operation, both in the Central Sinai and in areas of the Nile Delta. Recent operations started as a result of a blind but very bloody terrorist attack by armed separatists on Sinai's Al-Rawda Mosque on 24 November 2017.

The situation now appears to be under control by Cairo, but the autonomous movement and the fanatical Islamists with various international connections (ISIS, ISIL, al Qaeda, e.t.c.) still remains a serious - potential - threat to Egypt's energy infrastructure, mainly on land and secondly at sea. It should also be kept in mind that in February 2011 near El Arish the separatists attacked and destroyed the gas pipeline connecting Israel and Jordan with Egypt since 2009. Several bombings against the pipeline followed that same year, leading to a disruption of natural gas flow in July of that year. Since then, dozens of similar attacks have been staged (October 2014, May 2015, January 2016). East Mediterranean Gas (EMG), the manager of the pipeline of the same name, and Israel Electric Corporation (IEC) have claimed and received, following arbitral proceedings in Switzerland, \$1.8 billion in damages for the interruption of the pipeline's flow. The

Greece and Israel as "fronier states"



Greece and Israel both have important roles to play as western frontier states. The coming period will be characterized by challenges all along the periphery lines between the western and the Muslim worlds. This will not be a confirmation of the Clash of Civilizations of S.P. Huntington, because jihadist groups target Muslim states as well, but a recognition that a new era has arrived with frontier states having more responsibilities to strengthen collective security than before. The strong ties between Athens, Jerusalem, and Nicosia go well beyond the promotion of open communication links in the field of energy. The strategic triangle, and especially the close cooperation between Athens and Jerusalem, can help the rest of the western world obstruct jihadists as they attempt to target western states. How do Athens and Jerusalem help in this regard?

- By establishing a network of flow control of refugees now that Turkey seems unable and unwilling to do so. Jihadists make use of the continuous flow of refugees into Greece through the Aegean corridor in order to gain access to the West.
- · By putting preemptive military operations into action from Greek, Israeli, and Cypriot ground against human smugglers acting in the Eastern Mediterranean. Greek military naval capacity combined with the Israeli military air force can transform the Eastern Mediterranean into a region relatively immune to external jihadist action.

Israel is a tech leader while Greece has a large soft power capacity. This combination can lead to the creation of a political narrative that can counter the power formula of jihadist Islam in the Eastern Mediterranean. For all of these to be implemented and to influence developments in the Eastern Mediterranean, the Middle East, and Southeastern Europe, the U.S. as well as the European Union will have to maintain their open support to both states. The decision by the White House to move the U.S. Embassy to Jerusalem was a strong political gesture in this direction. So too should Washington enhance the status of frontier state to Greece. The radicalization of Islam will continue as a new generation of Takfirism, a hybrid form of nihilism and ultra-religious fanaticism, is growing in Libya, Syria, and the Sahel. The strategic importance of Israel and Greece as the last frontiers before the stormy Muslim archipelago, considering as well the Russian and Chinese poles of influence, reveals the embryonic capabilities the two states possess as the two major western actors in the region.

In this context, the U.S. Assistant Secretary of State for European and Eurasian Affairs Wess Mitchell is expected to visit Cyprus in November. He has stated, in numerous occasions, that Greece and Cyprus play an important part in the US strategy in the Eastern Mediterranean. "I will be traveling to Cyprus in a few days and what we really try to do there is to have U.S. more present not only in the bilaterally with these countries, but in the Greece, Cyprus and Israel dialogue", he said. "I think there is a real *case to be made for seeing eastern Mediterranean as a frontier and a very* vulnerable frontier". In the recent past, Wess Mitchell reffering to Cyprus too, had stressed that the U.S. will not remain idle in case Turkey tresspasses its EEZ, either by drilling actions or harassment and interidiction of the programmed drillings.

amount of the compensation is merely an indication of the significance of financial damage caused by the violent disruption of the pipeline's operation.

Israel is a country constantly targeted by Islamic terrorism, and in the past terrorist attacks have taken place on the country's shores with attackers infiltrating from the sea. In July 2006, a rare incident occurred when an Israeli corvette, INS "Hanit", participating in the naval blockade of Lebanon, sustained a hit from an anti-ship missile launched by the Palestinian Hezbollah organization. The ship suffered major damage and four crew members were killed. The projectile was allegedly of Chinese design - origin, a type C-802 which had been launched from the coast of Lebanon. The corvette's crew was taken by surprise, as such an attack had not been expected and it seems that the automatic missile detection and anti-missile systems available on the ship had not been activated. This proved in practice the Islamic organizations' ability to obtain and effectively use such sophisticated anti-ship missiles. Consequently, even today an attack on an oil rig at sea cannot be ruled out. Hezbollah group has threatened in the recent past to attack Israel's offshore gas rigs, some of which it asserts are operating in Lebanon's territorial waters, a claim that Israel rejects.

The Israeli Navy, having fully assimilating the lessons learned from the seaborne attacks, carried out multiple scenario exercises against seaborne threats, no earlier than the first week of June 2018. This particular exercise concerned two scenarios repelling attacks on the high seas. In the first scenario, an aircraft simulated a missile threat against an Israeli gas rig. The threat was detected aboard a Saar 4.5 fast attack missile craft, and was shot down by an interceptor missile launched from the ship. The Israeli Navy noted that the ship had recently been fitted with state-of-the art detection and observation systems, including the new Fire Sickle radar system which significantly improves a vessels missile tracking capabilities. The exercise was the first live test of the ship in its new configuration. In the second scenario, a seaborne target simulating an enemy ship was struck by two cruise missiles launched from the vessels INS "Lahav" (Saar 5 class corvette) and INS "Kidon" (Saar 4.5 class fast attack missile craft). The target was successfully hit and destroyed.

In mid-January 2018, a new form of threat from the forces of Islamic terrorism, against Russian targets in Syria was tested, that of the massive simultaneous use of bomb carrying drones. Specifically, Russian sources revealed that 10 drones carried out a simultaneous attack against the Russian Hmeimim AFB, while three more attacked the Russian naval base at Tartus. According to Russian information sources, 7 drones were shot down by anti-aircraft missiles, while another 6 were placed under Russian guidance control and were landed without hitting their targets. This form of attack is categorized as a "swarm attack". This term defines the simultaneous use of numerous bomb carrying drones, or drones that simply carry explosives or explosive devices.

According to the same Russian sources, the drones took off from a village in the south of the Idlib province in northern Syria, actually from a region that had been agreed as a de-escalation zone between Russia, Turkey and Iran. Obviously, this was done by the attackers in order to achieve surprise which, according to these sources, seems to have been avoided. Therefore, the fanatical Islamic forces have wide accessibility to this form of technology and equipment and so swarm attacks against energy infrastructure either in the form of drones - UAVs, or even in the form of USVs (Unmanned Surface Vehicles) should not be excluded. Potential take-off or launching sites could be the coast of Lebanon, but even a fishing or merchant vessel among the dozens that cross the area every day.

The more recent example, is that of the two of Libya's biggest oil ports which stopped loading after last summer's clashes, that erupted between rival forces for control of the country's economic lifeline. The NATO-backed war, that overthrew and killed Libyan strongman Moammar Gadhafi in 2011, gave way to years of fighting among rival Libyan groups in which the country's oil installations became prized targets. A group known as the Benghazi Defense Brigades launched the attack, resulting in a fire at a

storage tank used by Harouge Oil Co. Storage tanks, as the terminals had already been damaged in previous bouts of fighting. This recent fighting at Es Sider and Ras Lanuf terminals led to the loss of about 240,000 barrels of Libva's daily oil production. National Oil Corporation, the state energy producer, evacuated staff from both terminals which account for 40% of Libya's oil exports, and declared force majeure on shipments.

Sabotage

Sabotage should be considered and analyzed as a separate form of modern warfare, due to its unconventional nature of targeting CEI. Sabotage in modern warfare often takes the form of cyber-attacks, which take advantage of CEI reliance on Information and Communications Technology (ICT). Technologies provide a means to attack the enemy from distance, sometimes through third parties, which leaves no proof of the perpetrator. Cyber warfare is



considered to be a part of modern warfare and its importance is expected to increase in the future. Cyber-attacks and sabotage against CEI have taken place in recent history, such as the Stuxnet malware attack against Iranian nuclear facility, which have showed the great potential of cyber warfare in political and military conflict. Cyber operations like this also display the vulnerability of energy infrastructure to external attacks that are often concealed.

Sabotage and cyberattacks on energy infrastructures can potentially lead to loss of energy supplies for military forces and thus loss of combat power. In addition, disabling generation facilities such as power plants could cripple any modern, energy-dependent society and thus create further challenges for security. Therefore, cyber-defense and counter-sabotage measures should be focused on neutralizing the threats in regards to CEI. Designated as targets are power generations facilities, water treatment facilities or oil and natural gas pipelines. CEI relies heavily on SCADA control networks and Industrial Control Systems (ICS), collectively called Information and Communications Technology (ICT). These networks were designed to provide management and control reliability, however many such systems did not provide a mechanism to prevent unauthorized access or deal with cyber security threats originating from external networks. According to security analysts the threat on CEI from cyber-attacks is significant and growing, as energy system operations become more electronically interconnected. Cyber-attacks on CEI have the potential to impact service of the infrastructure and hence threaten energy security of nations and public safety.

Baku-Tbilisi-Ceyhan (BTC) Pipeline: On 5 August 2008 an explosion occurred on the BTC pipeline on Turkish territory. According to U.S. intelligence officials, the perpetrator was Russia. The Kremlin discursively disapproved the construction of the BTC pipeline, due to its circumvention of Russian territory, and consequently a potential loss of influence over energy exports from the Caspian region. Some days after the explosion, Russian fighter jets dropped bombs on the borderline with Georgia. Simultaneously, Alexander Dugin, an advocate of Russian expansionism and at that time advisor to the Russian Parliament, stated that the BTC pipeline was dead. However, from recent investigations, it appears that the cause of the explosion was not a physical attack but a cyber-attack: hackers had shut down alarms, and cut off communication systems, and super-pressurized the crude oil in the line, provoking an explosion. Nevertheless, the Turkish government publicly blamed a malfunction

and PKK terrorists claimed credit for it. Western media claimed that Russia had a direct interest by cutting the West's vital energy connection to the Central Asia and Caspian Sea. Georgia and Caucasian states would have no choice but to obey to Kremlin.

Stuxnet Operation in Iran (2009-2010): On 23 November 2010, it was announced that uranium enrichment at Natanz, Iran, had ceased several times because of a series of major technical problems. It was believed to be caused by the Stuxnet malware, designed to attack industrial PLC (programmable logic controllers), which are used to control machinery. A serious nuclear accident, which shutdown some of its centrifuges, occurred at the site during the first half of 2009. Statistics provided by the Federation of American Scientists shows that the number of enrichment centrifuges operational in Iran rapidly declined from approximately 4,700 to about 3,900 around the time that the incident would have occurred. The attack was designed to



enforce a change in the centrifuge's rotor speed. Firstly, raising the speed and then lowering it. This would likely cause excessive vibration and distortions, which would destroy the centrifuge. If the goal was to quickly destroy all the centrifuges in the Fuel Enrichment Plant (FEP) - Stuxnet failed. However, if the goal was to destroy a limited number of centrifuges and set back Iran's progress in operating the FEP the operation had relative success, as it made detection of the malware difficult.



RUSSIA: Endeavouring to avoid the regional energy evolution...

The elephant in the room, it is often called. Rightly so. Discussions on the Eastern Mediterranean gas potential are often placed in a context of grand energy liberation strategies from the eastern gas behemoth, and yet not much attention is directed towards Russia's potential involvement in all of those diversification plans. This is a key development to follow and with the potential to actually disrupt the regional energy dynamics. The reconfiguration of the power balance in the Eastern Mediterranean in recent years offered Russia the opportunity to proceed in a reestablishing of its energy and defense cooperation with almost every country in the region. The motives behind those actions are obvious.

Russia tried to undertake pre-emptive action against everything that can undermine its hegemonic position as energy-provider to the European Markets and to the countries of the Eastern Mediterranean as follows:

In December 2011, Russia and Tur-

key signed an agreement on the South Stream natural gas pipeline, allowing Russia to build the South Stream gas pipeline through Turkey's EEZ. On the same day, Gazprom signed an annex to its gas contracts with the Turkish corporation BOTAS, which allows it to increase the supply of Russian gas, possibly leading to a significant reduction in its price.

In July 2012, President Vladimir Putin visited Israel to promote a Gazprom deal with the Israeli government that would give it control of Tamar's



gas and access to the Asian market for its liquefied natural gas. Moreover, there has been serious Russian interest in developing Leviathan, either alongside existing partners or in the event of pulling out Noble Energy, the US company conducting the drilling in the region, of the project. This raises the prospect of Russia pushing for a field development program focused on Floating Liquefication Natural Gas. A few months later, however, Russia started negotiations with the Palestinian Authority on a possible development of the Gaza Marine Field. In any case the Israeli-Russian relationship is quite complicated. Notably, Russia is Israel's largest supplier of crude oil and a big recipient of agricultural imports from it. On the other hand, Russia's deployment of advanced surface-to-air S-400 missiles has been of grave



concern to Israel, as Tel-Aviv never stopped fearing the transfer of advanced weapons from Iran or Syria to archenemy Hezbollah. For several years, additionaly, Gazprom's main concern has been that Israel's entry into European gas markets would severely undermine the company's market power.

From 2013 onwards and especially under President Abdel-Fattah El-Sisi, Moscow also revived its strong relationship with Egypt as it became obvious, in the array of cooperation agreements on trade and nuclear energy that have been signed. Moscow and Cairo are also deepened military cooperation, while Egyptian diplomacy appeared to have paved the way for the Saudi-Russian rapprochement. Egypt has also very quietly endorsed the Russian approach to resolving the Syrian conflict, as it supports preserving the Syrian state and its institutions, included President's Bashar al-Assad regime.

In October 2013, Russia and the Lebanon signed an energy cooperation Memorandum of Understanding for developing natural gas fields off Lebanon's shore. Several Russian companies also bid for the Lebanese exploration tender, while the Russian state-owned Soyuzneftegaz Gas Company clinched an agreement with the Syrian Ministry of Energy in December 2013 in order to explore in its Offshore Block 2, but with the outbreak of war and the rise of ISIS, no further development was possible. That very promising 25-year deal signed with the Damascus regime appears to have been an additional driving force behind Moscow's gambit to further bolster Assad, as it is estimated that the existing energy finds in the Levant Basin extend into Svria' s offshore territory.

The involvement in Syria, in particular, might reverse the poor results Moscow obtained in trying to enter the Eastern Mediterranean gas-monetization game through the front door. Indeed, between 2012 and 2013, Russian companies made efforts to be involved in the Tamar and Leviathan Israeli gas fields, but without success. Finally, Russian companies also took part in the Cyprus offshore bidding round, and Russia has supported Nicosia's offshore plan, condemning Turkey's interference. However in this case too, Russia was not able to enter the Levantine energy game. Cyprus preferred to include European companies and international oil majors. This situation was

partially reversed only at the end of 2016, when the Russian company Rosneft reached a deal with the Italian ENI to buy a 30% participating interest in the Shourouk Concession, offshore Egypt, where the gas field Zohr is located.

Once the war in Syria is finished, Russia will have the exclusive rights to drill in Syrian waters that just might belie some gas deposits identical to the ones found in Zohr. These projections would compromise any E.U. diversification plans, and yet, seem not to be even accounted for in any E.U. East Med scenarios. Russia's potential involvement in the Southern Gas Corridor attests to the new strategy of the gas behemoth versus the E.U. The Southern Gas Corridor is meant to transport Azeri gas to Europe via Turkey, thus reducing Europe's dependence on Russian gas. Nevertheless, the Russian Lukoil has a 10% stake in the consortium developing the Shah Deniz Pipeline, one of the Southern Gas Corridor's legs. The Russian company has also been granted more than \$200 millions from the European Bank for Reconstruction and Development to develop the Shah Deniz gas field. The Russian TurkStream potential entry point into TANAP is also much overlooked in the discussions surrounding the Southern Gas Corridor.

It is more than evident that Russia continues to have an interest in avoiding a possible route connecting the Eastern Mediterranean resources with the E.U. market, the major outlet for its pipeline gas. On the other hand, Russia also has an interest in avoiding an Israel-Turkey rapprochement cemented by a long-term pipeline deal, from both a wider geopolitical point of view and an energy perspective. In the first case, as mentioned, this would increase U.S. influence in the region. With regard to the energy dimension, Russia is committed to maintaine a strong presence in the Turkish gas market, on which rests an important outlet to expand Gazprom exports, especially owing to the problem the Russian company is having in the E.U. with the proposed Nord Stream 2 pipeline.

Military presence is increasing in the region

Russian President Vladimir Putin, never shy of taking advantage of an opportunity to expand his country's international influence, became keenly aware of the Mediterranean power vacuum several years ago. The Russian Navy is pivoting back into the same European waters it became very familiar with during the Cold War. Russia apparently is deploying, and intends to continue to deploy, its navy in the Eastern Mediterranean Sea. During his visit to the Black Sea Fleet in last February, Russian Defense Minister Sergei Shoigu stressed that the Mediterranean region is the core of all essential dangers to Russia's national interests and that continued fallout from the Arab Spring increased the importance of this region. Shortly thereafter, he showcased a new Russian naval policy by announcing the decision to establish a Navy Department Task Force in the Mediterranean "...on a permanent basis".

The Russian Navy shipbuilding and modernization account is receiving an increasingly large share of national defense appropriations, amounting to more than \$132 billion between now and 2020. Russia's desire to a more energetic role of its navy in the region has also resulted in its failed desire to purchase Mistral-class amphibious assault ships from France, a dramatic increase in Russian naval-school enrollment. All told, the Russian Navy is showing signs of growth in geographical deployments, inventory, and sophistication. Russian President Vladimir Putin insistently asserts that the drastic upgrade in Russia's defense forces is a logical response to U.S. and NATO efforts to tip the strategic balance, while making pointed reference to the new NATO missile-defense system in Europe. Putin further contends that Russian military responses must be well calculated and quick. Any naval analyst would naturally point out that "quick" suggests the need of forward presence. Why does the Eastern Mediterranean -a sea with no Russian seacoastqualifies for this even more aggressive response? Firstly, Russia's only exit to the open ocean for its Black Sea Fleet is the Eastern Mediterranean. Russia, also, has long-standing economic ties to many regional states, including Greece, Syria, Libya, Cyprus, and Algeria, and is buying or selling arms with a number of the Mediterranean littoral states. The permanent presence is one more step to the enhancement of Russia's strategy for political influence in



the Middle East and North Africa (MENA). Foreign Ministries are not the only ones to shape external policy. Any port call is a diplomat mission, providing an opportunity for official meetings and public diplomacy, with the events covered by media. Naval visits reflect foreign policy trends. Moreover, some experts argue that Moscow is using its ports in the Mediterranean, from Gibraltar to the Levant, as a tool for testing the solidarity of NATO and E.U. at a time of crisis.



Another consideration is the logistical node in Tartus, a location of increasing strategic importance during this period of ongoing Syrian conflict. Due to the fact that this naval base is its only one outside Russian territory, with ongoing military developments in Syria, in the recent past naval officials were considering other locations as their primary regional port. Unofficial rumors suggest Russia considered ports in Cyprus, Montenegro, and Greece in addition to Syria. Of these, Cyprus has gotten the most attention, owing to the close economic relations between Moscow and Nicosia. Cypriot Defense Minister acknowledged a close relationship with Russia, however denied any discussion about a permanent base in Cyprus for Russia, even though since 2012 Russian naval vessels had been using the Limassol port for refueling. In the same context, back in August 2013, the Kremlin submitted an official request to rent the "Andreas Papandreou" AFB near Paphos.

X The Mediterannean Task Force

A midst the flurry of diplomatic and po-litical activity accompanying the Syrian crisis, the Russian Navy declared that at least four warships, a spy ship, and a repair ship located at Tartus, would join other units of Russia's new permanent Mediterranean Task Force. Since last July, a 15-strong Mediterranean Task Force was established to be based out of Tartus. Ever since, this force provides, mainly, support and protection to the Assad regime, as well as monitors the southern flank of NATO and its activities in the region, including the Black Sea. The Russian Navy conducted, also, six international exercises demonstrating its global presence and power projection capability, communicating the message: "The Mediterranean Sea has ceased to be a NATO Lake dominated by the U.S. 6th *Fleet....American vessels don't own these waters*

anymore. As a great power, Russia has its own interests in the region and has a powerful naval force permanently deployed to defend them".

The most recent Russian Navy's massive exercise -involving 24 ships, two submarines and 30 airplanes- was held between 3rd and 8th September as a show of force, to send the NATO the message not interrupt the simultaneous Idlib's offensive. Its primary goal was to give a message to the West that Russia this time will not let conduction of any airstrike against Syrian military bases, similar to the one carried-out earlier this year by U.S., France and the U.K. To enforce this message, they symbolically blockaded RAF Akrotiri's airspace especially when the AFB was defenceless, due to absence of any Type 45 Destroyer. Earlier on April 14th, when the Royal Air Force took part in the cruise missile strike against Syria's chemical warfare facilities, Royal Navy's Type 45 Destroyer HMS Duncan (D37), which carries 48 Aster 15 and Aster 30 Surface to Air Missiles for its Sea Viper Principal Anti Air Missile System (PAAMS), was in the south of the air base protecting it from danger of any possible retaliation of Russian armed forces.



Recently, the Russian Navy deployed one guided missile cruiser, an anti-submarine destroyer, five frigates, three corvettes, two Kilo class submarines, two landing crafts, an oiler and two minesweepers mostly from Baltic Sea fleet. They were: "Marshal Ustinov" (055) Slava-class guided missile cruiser, "Severomorsk" (619) Udaloy-class anti-submarine destroyer, "Pytlivy" (808) Burevestnik-class Frigate, "Admiral Grigorovich" (494), "Admiral Essen" (490) and "Admiral Makarov" (799) Admiral Grigorovich-class frigates; "Yaroslav Mudry" Neustrashimy-class (777) frigate; "Grad Sviyazhsk" (652), "Velikiy Ustug" (651) and "Vyshny Volochek" (609) Buyan-M class corvette; "Ivan Bubnov" Boris Chilikin-class Replenishment oiler; Orsk and Nikolay Fil'chenkov Project 1171 Alligator-class landing ships; "Turbinist" Projekt 266M and "Valentin Pikul" Projekt 266ME ocean-going minesweepers; "Velikiy Novgorod" (B-268) and "Kolpino" (B-271) Kilo class submarines.

Российские корабли в Средиземном море



To support the Navy ships and submarines, the Navy Aviation participated with seven Su-30SMs, four Su-33s, two Il-38s and two Tu-142MK maritime patrol airplanes. Four out of the seven Su-30SMs were belonging to the 43rd Independent Maritime Assault Aviation Regiment (43rd OMShAP) which has a total of 11 Su-30SMs in Saki Air Base, Crimea peninsula. The remaining three Su-30SMs belonged to the 72nd Aviation Base of Russian Navy which has a total of 8 Su-30SMs at Chernyakhovsk, Kaliningrad. The four Su-33s were all belonging to the 279th Independent Shipborne Assault Aviation Regiment (279th OKShAP) at Severomorsk-3 AB. All four Su-33s were recently upgraded by 10th Aircraft Repair Plant and have SVP-24 "Hephaestus" targeting system enabling them to carry-out more precise bombing. A pair of Il-38s of Russian Navy, both belonging to the 7050th AvB (former 403rd OSAP) at Severomorsk-1 were deployed to Hmeimim AB, to be used for daily maritime patrol missions and observe the Standing NATO Maritime Group 2 (SNMG2) which is monitoring the Russian Navy.

In support of the Medieterranean Task Force, the Russian Air Force also has deployed a fleet of eight Su-24M2 and eight Su-34 strike bombers as well as four Su-35S interceptors, four Il-78Ms of the 3rd Aviation Squadron, 43rd Training Center Ryazan Air Base, to Hmeimim Syria. These Il-78Ms were used to refuel the Su-30SMs and Su-33s every day of the recent exercise, keeping them in air for at-least four hours in each combat air patrol flight. These Il-78Ms also refuelled three Tu-160 Strategic bombers which flew from Engels-2 to Syria, on 5th September and returned to Russia without stop in the same day. The Tu-160s simulated launch of cruise missiles at the RAF Akrotiri in case of confrontation with the west, during last September's naval exercise.

Last but not least, the Russian Anti-access/Area Denial (A2/AD) architecture in the Eastern Mediterranean is centered on a network of layered onshore and offshore disruptive weapon systems. In this regard, Moscow has deployed a three-layer air and missile defense system in Syria by deploying S-400, S-300V, BukM2E (SA-17), Pantsir S-1 (SA-22) batteries to cover long, medium, and short ranges respectively. Furthermore, this formidable air-defense architecture is networked with the Syrian Air Defense Force's assets, sea-based S-300FM systems embarked on missile cruisers, as well as Krasukha-4 electronic warfare (EW) system deployed in the Hmeimim Airbase. Russian military perceives A2/AD as a component of strategic operations, as opposed to a separate, independent effort. In this context, A2/AD, along with cyber/information warfare, and traditional warfighting components, are postured so that they can be used simultaneously. More importantly, these strategic operations are designed for providing maximum options to the Russian political leadership while minimizing those of the adversary.

Areas of strategic importance: Cyprus & Crete

When attempting to plan the defence and security of an enormous region such as the Southeast Mediterranean, where a complex grid of offshore/onshore energy infrastructures is already being developed and is expected to develop further, one cannot avoid focusing on the two major islands-"floating bases" that dominate the region's routes: Cyprus, Crete and the Dodecanese islands as well.

Cyprus: Disproportionately large EEZ and FIR in relation to its land area...

The strategic importance of Cyprus for the Middle East and the Eastern Mediterranean regions had been recognized since antiquity. A very recent historical example is the presence of the two Sovereign British bases on the Island (Dhekelia, Akrotiri). The first includes port facilities and the second an extensive air base. The preservation of these particular bases and of oth-

er facilities (such as the radar on the summit of Mt. Troodos, the highest peak in Cyprus) was defined as an inviolable term by Britain prior to its consensus in 1960, on the Proclamation of Independence for the state of Cyprus which until then had been British territory. More specifically, the southern and eastern coasts of today's Republic of Cyprus, which are about 60% of the island, completely control the



area between Cyprus, Egypt and Israel where the energy infrastructure and natural gas fields are currently located.

In the southern part of the island there is the "Andreas Papandreou" AFB at Paphos. The base was constructed in the 1990s as part of the implementation of the joint declaration of the "Single Greece - Cyprus Defence Area" doctrine. The base was constructed in order to accommodate Greek fighter planes staging in Cyprus. Today, it is used as the main base for the Cypriot National Guard's Air Arm, where all its air assets are stationed (armed and attack helicopters, search and rescue helicopters, etc.). The base



with its hardened aircraft shelters can accommodate the relocation of a reinforced aircraft squadron. Also, on the territory of the Republic of Cyprus is the Larnaca international airport with the capacity to serve large-sized commercial, as well as military, aircrafts.

The Republic of Cyprus has two major commercial ports in the cities of Limassol and Larnaca, with the one in Limassol being the main port of trade for Cyprus and also an international transit trade hub. Near the city of Limassol, is the "Evangelos Florakis" naval base, which at the moment can only accommodate small sized vessels. That is why Cyprus, within the framework of the European Union PESCO (Permanent Structure Cooperation) initiative, needs to upgrade and expand the naval base and shall also modernize the air base and the Zenon operation centre in Larnaca.

The question is whether Cyprus is adequately defended, as it possesses no combat aircraft nor any major naval units. Nevertheless, Cyprus exploits its strategic position through the installation of anti-aircraft and anti-ship systems. In terms of anti-aircraft systems, the Cyprus National Guard has

6 self-propelled BUK M1-2 type air defence systems of Russian origin, 6 self-propelled TOR M1 short-range air defence systems also of Russian origin and finally 12 Skyguard A/A systems, which each of these consists of the FDC (Fire Direction Centre), 2 quad ASPIDE-330 rocket launchers and 2 twin GDF-0052 35mm guns. For strikes against enemy naval units, Cyprus has since the mid 1990's acquired 3 EXOCET MM40 Block

to a Score surface radar unit, the launcher unit consisting of a quad MM40 Block II missile launcher mounted on a Renault TRM 6X6 vehicle, plus an additional self-propelled NS-9003/A passive acquisition unit made by Israeli ELISRA. The passive acquisition units, acquired around 2000, have been mounted on STEYR 14M18 trucks and allow the location and acquisition of targets, with the minimum operating time of the Score radar to prevent its location by enemy countermeasures.

II surface to surface coastal batteries, with a maximum range of 70km. Each battery consists of a self-propelled Command and Control Centre, linked



Another particularly strategic parameter for Cyprus is the fact that, owing to its insular nature and its distance from both the Asian and African coasts, the island has a **disproportionately large EEZ and FIR** in relation to its land area. Cyprus' really large EEZ is due to the provisions of the new 1982 Law of the Sea convention. The very large Nicosia FIR is one of the benefits of the British legacy, as its limits were defined at a time (1947) when Cyprus was still British territory. Countries such as Israel with a very small airspace and a limited FIR, need a much larger airspace for their air force to practice in, which requires application and approval by the air traffic management authority of the state controlling the neighbouring FIR. Today of course this is possible due to the excellent Israel-Cyprus relations.



Crete: A high valued "aircraft carrier" at the energy crossroads...

The strategic importance of Crete for the Central and the Eastern Mediterranean region had also been recognized since antiquity. During the Second World War, it was strongly fought over by the Germans and the British, and was eventually captured by the Germans after they conducted the greatest and bloodiest airborne operation until that time.

Nowadays, Crete hosts the Souda Bay Naval and Air bases where U.S.A. and, generally, NATO forces are accommodated. Souda Bay is the second in importance naval base for the Greek fleet after its main Skaramangas naval base on the island of Salamina, adjacent to the port of Piraeus. The Souda port facilities are huge with the larger installation being Quay K-14 constructed with NATO funds. Its length, about 300m and width about 100m, allow

an aircraft carrier to berth and it is the only NATO naval base to provide such facilities in the Eastern Mediterranean. The significance of the Souda Bay is bolstered by the fact that U.S. monitoring operations are being executed at large, gathering imagery intelligence (IMINT), telemetry intelligence (TELINT), and signals intelligence (SIGINT).

Last summer, Assistant Secretary, Bureau of European and Eurasian Affairs Wess Mitchell, analyzing how the US plans to build a stronger US presence in the Eastern Mediterranean, referred to the geopolitical role of Greece as well as the upgrading of Greek-American relations. "We support Greece as a pole of stability in the Eastern Mediterranean and the Western Balkans" he said, referring to the Draft U.S. Defense Budget for 2019 that includes 2 sums of \$47,850,000 and \$2,220,000 for future infrastructures at the U.S. Suda Bay Navy Base. These sums are considered as a big investment and obviously show its high importance to the U.S. and NATO, together with the commitment to its upgrading, as well as their presence in the region.

The military airfield of Akrotiri, Chania, which serves the Souda base is home to the Hellenic Air Force's 115th Combat Wing with two squadrons of F-16 Block 52+ fighters. These aircrafts were obtained from the outset with external conformal fuel tanks, in order to be capable of long range operations and can carry out **missions reaching Cyprus**. The Akrotiri AFB is itself part of the broader Souda infrastructure complex, serving thousands of flights per year by American and NATO transports, fighters and every other type of aircraft. It has been used extensively in all operations in the Gulf region (Desert Strom - Desert Shield in 1991, Iraqi Freedom in 2003 e.t.c.) and it was the base for NATO and Allied fighter jet sorties in 2011 against the supporters of the dictator Gaddafi in Libya.

Additionaly, the island also has several civilian and military airports, such as Heraklion International Airport, Sitia Airport and the airfields at

Monitoring operations from the sky

During the last September's Russian naval exercise, SNMG2 had support of three types of maritime patrol airplanes: firstly a Boeing P-8A Poseidon MPAs of the US Navy's VP-10 "Red Lancers" of NAS Signonella, secondly a single German Navy's Lockheed P-3C Orion of MFG3 and finally a French Navy's Atlantic 2 of 21F Squadron. NATO spy flights for monitoring the Russian Navy in Eastern Mediterranean Sea began with an EP-3E of US Navy based in Souda Bay, Crete. Additionaly, USAF's RC-135V "Rivet Joint" belonging to the 38th RS, 55th Wing and flying from Souda Bay was used for SIGINT while an anonymous RC-135U "Combat Sentinel" was used for collecting technical intelligence on adversary radar emitter systems on 5th September. It is believed that it was used to gather radar signals of the Russian Navy air defense systems during the recent ex-



Tymbaki (southwest of Heraklion on the South Mediterranean coast) and Kastelli (south-east of the city of Heraklion). At the latter location, the construction of the new international airport of Crete has begun to replace the one at Heraklion which is already congested.

Greece attaches great importance to the security of Crete. As already mentioned a complete HAF's Combat Wing is stationed on the island, equipped with F-16 Block 52+ fighters and there are always Hellenic naval vessels at port at Souda. Additionally, the island is home to an Airborne Brigade, and particular attention has been given to its Anti-Aircraft protection: Crete is home to a long range air defence squadron equipped with the S-300 PMU missile system of Russian origin, whose anti-aircraft umbrella is complemented by 6 self-propelled TOR M1 systems, also of Russian origin. Finally, located in Eastern Crete, on Mt. Ziros, is a major Air Force radar installation which is one of three area control centres in the Greek territory with a range of more than 450 km.

The strategic values of Cyprus and Crete are obvious, as the routes of the proposed EastMed and EuroAsia Interconnector will pass through their areas. The "Achilles Heel" for these pipelines is the vast expanse that lies between Cyprus and Crete, which pose a challenge for security along the length of the energy routes.

The Dodecanese islands

A secondary but quite important role as support bases and EEZ boundaries, shall be played by the Eastern Aegean islands of the Dodecanese and mainly Rhodes and Karpathos.

Today, Greece has built and operates an advanced military airfield

ercise. In the last day of the exercise, one of three RC-135Ws, of the Royal Air Force and on deployment at Souda Bay, carried-out another intelligence gathering mission which lasted almost six hours. Russian



news websites claim that the RC-135W was intercepted by two Su-30SMs of the Russian Navy and was forced to keep its distance from the No fly zones. Intelligence gathered by these aircraft flying out of Souda Bay is processed on the base, which is also the site of the National Security Agency's (NSA) Consolidated Reconnaissance Operations Facility (CROF), and then relayed back to the United States for analysis by the security agency.

on Karpathos, while on Rhodes there are two landing grounds, the large Rhodes international airport and the military airfield at Maritsa. The latter is the development of the old Italian airfield, which after the Second World War was upgraded and was used as the island's civilian airport which, following the construction of the new international airport, continues to operate as a military airfield.

Another tiny island but of particular importance, as it is located halfway between Rhodes and Cyprus is Kastelorizo. As an integral part of Greek territory, it shall have a major impact, along with its surrounding islets, on the dispute between Turkey and Greece about the size of the Greek EEZ, when this is proclaimed by the Greek side. Kastelorizo is a natural harbour often visited by Greek naval units. It has a small airport and there is a mil-

The major security questions

All stakeholder countries seem to be able to safeguard the part of their EEZ, where the energy resources are located and where their own production infrastructure is being developed. However, a major security issue arises concerning the vast sea area between Cyprus, the Dodecanese and Crete. Through this area will pass the routes of the proposed EastMed and EuroAsia Interconnector pipelines, being the area via which the energy transfusion to Europe shall take place. Therefore, significant security issues arise primarily during the preparatory-planning phase as well as during the pipeline construction phase. Pipelines at such depths, once laid, are relatively safe of asymmetric threats, as there is no such international precedent, but such a possibility should not be ruled out. Surveillance and providing security over such a large maritime area requires:

- Constant aerial surveillance: Navy co-operation and surveillance aircraft, such as Greece's P-3Bs which are being upgraded, designed to cover large distances, are a good but extremely expensive solution. Constant surveillance using long-range UAVs may be a solution with a reasonable cost. Today, available UAVs for this role are the Israeli Heron and Hermes 900, the American MQ-1 Predator and the highly sophisticated MQ-9 Reaper/ Predator B. Predators can remain over an area being monitored for over 24 hours.
- Local presence or readiness of naval units of appropriate size for patrols on the high seas even in adverse weather conditions, but also capable of dealing with a variety of different types of threats. The most suitable ships are considered to be the size of a frigate or larger, having extensive air-defence capabilities. Considering the fleets of the five countries (Italy, Egypt, Israel, Greece and Cyprus), it is easy to see that only the Italian Navy has instantly available ships that meet all these requirements, apart from the U.S. 6th Fleet's vessels that are already burdened with multiple operations in a very large area and in many cases outside the Mediterranean, as well as the French Navy which shares same restrictions with the U.S. Navy.

The Orizzonte class destroyers and Bergamini class frigates are the only ships capable of providing area air defence, as they are equipped with the combination of the MBDA Sylver A50 VLS vertical launcher system and the Aster 30 surface to air missiles. For any other naval unit to sail in the Eastern Mediterranean in relative safety from aerial threats, it should be accompanied by fighter jets, which practically means conducting a joint and prolonged aeronautical operation. This could potentially be implemented by having fighter aircraft in a state of high-readiness at a nearby air base (e.g. "Andreas Papandreou" in Cyprus), while at the same time adequately monitoring both land and airspace.

In times of tension or crisis, things would become even more difficult. In this case the continuous presence of an aircraft carrier that ensures the imme-



itary garrison, both on the main island and the major islets of the complex that surround it.

diate availability of fighter aircraft is the greatest deterrent. Here, too, the Italian Navy is the only one with the capability to provide long time presence with its Ca-



Israel and Egypt as well as Greece -with restrictions- have such equipment however, any prolonged tension or crisis will exhaust their national capabilities relatively quickly. Therefore, the combined presence of equipment from countries with common interests which, obviously for this reason too, practice together extremely demanding and complex operational scenarios, would particularly facilitate their implementation. Finally, the mutual provision of the facilities for stationing - servicing combat aircraft in other countries' air bases would greatly diminish this problem.



The inclusion in the fleets of the region's countries of Air Independent Propulsion submarines complicates the problem further. These submarines can remain on patrol for many days without having to surface, forcing their potential rival to conduct particularly complex anti-submarine operations in order to counter this particular threat. Naval co-operation aircraft with increased detection and anti-submarine capabilities, the availability of naval units capable of transporting two (rather than one) anti-submarine helicopters as well as the increased anti-submarine capabilities of surface vessels, will "make a difference". Here too the Bergamini class frigates, both general purpose and anti-submarine warfare versions, excel against the others, with the exception of the single Fremm class frigate recently acquired by the Egyptian navy.

Common aeronautical exercises

Military might and military means have become more important for littoral states and major stakeholders, regarding several critical issues ranging from energy competition to diplomacy messages. Thus, the Eastern Mediterranean is witnessing more ambitious defense modernization programs and a significant increase in game-changing naval developments. Over the past decade, and while gas fields were consecutively being discovered, the countries of the region were entering into a simultaneous sort of arms race. This was no coincidence. Valuable national resources discovered at sea require naval and air forces for their safeguarding.

The recently forged Israel-Cyprus-Greece and Egypt-Cyprus-Greece tripartite alliances, under the auspices and assistance of U.S.A., include a wellshaped military character. Indeed, in spring 2012, Israel and the United States invited Greece to join them in joint military exercises, through which Israel sought to replace strategic depth it had lost after the termina-



tion of the defense cooperation with Turkey. An important annual naval event in the Mediterranean was the codenamed "Reliant Mermaid" that was first held in 1998 and originally involved Turkey. However, from 2011 onwards, after Turkey withdrew, Greece was invited to take its place. With Athens on board, the exercise was renamed to "Noble Dina" and the overall mission of the training was changed from search and rescue exercises to attack and defend scenarios that included repelling enemy assaults, anti-submarine warfare and aircraft operations, as well as attacks on offshore natural gas and oil rigs.



"NAIAS 2018" is another biannual multinational naval exercise executed in Aegean Sea, organized by the Hellenic Navy, with the participation of Standing NATO Maritime Group Two (SNMG2) consisted of the flagship HNLMS De Ruyter (Netherlands) and ESPS Cristobal Colon (Spain), while the rest HMCS Ville De Quebec (Canada) and HS Elli (Greece) continued routine patrol in the East Mediterranean. Participating units had the opportunity to train in multi-threat warfare events, including anti-asymmetric warfare, maritime interdiction and counter-terrorist events. For connection with the real world, the scenario of the exercise reflected the contemporary challenges threatening the maritime security. Hellenic Navy also assumed recently the leadership of "Sea Guardian" the standing anti-terrorism operation in the region.

Of great interest is the fact that Egypt, Israel, Greece and Cyprus have been intensively involved in the Eastern Mediterranean during the last 5 years, mainly in bilateral exercises. The bilateral "MEDOUSA" the largescale, for air and naval forces, exercises between Greece and Egypt began in December 2015, and were repeated in December 2016, August and October 2017. The exercise scenarios are gradually being expanded, but the participating forces are also increasing both in size and in the variety of the hardware involved.

Within the framework of this practice, between 23-29 June 2018, one more joint exercise was held, "MEDOUSA 6", in which the Armed Forces of Cyprus were invited to participate in the exercise being upgraded to tri-national status. The exercise area was the naval base of Alexandria and the offshore area north of the city, within the Egyptian FIR. The breakdown



of the participating forces indicates the scale of the exercise. Greece participated with: 2 frigates and their on-board S-70 Aegean Hawks helicopters, one 214 type submarine, 8 F-16 aircraft (four of which operated from an Egyptian air base), 1 C-130 aircraft, 1 Erieye AWACS aircraft, 1 CHINOOK helicopter, 2 AH-64 attack helicopters and special forces personnel. Egyptian forces participated with: a MISTRAL class helicopter carrier, 2 frigates, 1 submarine, 2 missile boats, 6 F-16 aircraft, 2 RAFALE aircraft, 1 E2-C AWACS aircraft, 1 helicopter and Special Forces personnel. Cyprus participated with: an offshore patrol vessel and Special Forces personnel. The main objectives of the combined operation and training included:

- Improving the functionality of the participating forces
- Exercising of naval forces in anti-submarine and surface warfare
- Exercising of air forces in protecting and attacking surface targets
- The staging of amphibious operations
- Facing asymmetric threats
- Practice of Search and Rescue (SAR) procedures, naval boarding and Maritime Interdiction Operations
- Live fire and surface to air guided missile launches.

Exercise "BRIGHT STAR 2018" is a multilateral U.S. Central Command (USCENTCOM) command-post and field training exercise as well



as senior leader seminar, held with the Arab Republic of Egypt and other partner nations. Participation strengthens military-to-military relationships between U.S. forces and their partners in the Central Command area of responsibility. The exercise enhances regional security and stability by responding to modern-day security scenarios. The joint American-Egyptian training was held during the period from 8 to 20 of September, with the participation of the forces of Egypt, U.S.A., Greece, Jordan, Britain, Saudi Arabia, UAE, Italy, France and 16 other countries as observers.



Cypriot and Israeli forces have been participating in corresponding large scale bilateral exercises ("Onisilos - Gideon", "Nikokles - David", "Jason") since 2014. In 2017 two large-scale exercises were held in the territory of Cyprus (March and December) and in March 2018, the first exercise for this year took place, aimed at counteracting a possible annexation of Cyprus by Turkey. This is why the presence of Israeli troops in Cyprus is perceived by President Erdogan as interference in the Turkish sphere of influence.



Finally, the combined military exercises and co-training of Greek and Israeli armed forces have increased over the past five years and include the whole range of exercises (army aviation, Special Forces, air and naval

forces). Israeli aircraft also participated this year (March 2018) in the "INIOCHOS 2018" multinational exercise at the Air Tactics Centre at the Andravida AFB. Recently, at the beginning of June 2018, dozens of Israeli aircraft were deployed in long-distance missions, with constant air refuelling, from Israel to the greater airspace of Crete. Between **18-20** June 2018, once again, Israeli F-16I, F-15I and F-35I Adir aircrafts flew en masse inside the Greek FIR, south of Crete, practicing the use of AIM-120 AMRAAM and PYTHON-5 air-to-air missiles, against radio-controlled targets.

At the time of writting, the most recent developments are the 3 large scale international naval exercises, involving local, regional and international forces in and around the Cyprus' EEZ, till the 20th of November. The purpose of the large-scale multinational search and rescue exercise



"Nemesis 2018" was to further develop effective cooperation and coordination between all of Cyprus' relevant services with neighbouring states, for the immediate response to emergencies on merchant vessels and oil rigs as well as to other humanitarian operations in the eastern Mediterranean. There were also two more multinational exercises in the region: a joint exercise between Cyprus and Israel took place in Cyprus, and a third large-scale multinational exercise, with the participation of the navies of the US, France, Germany, Britain, Italy and Greece in the region south and southwest of Cyprus.



Commenting on the above exercises, one may note that they go beyond the usual level of combined exercises to exchange experiences and strengthen bilateral relations. Their scenarios are extremely complex with a very large number of participating forces and hardware, indicating that all four countries are intensely promoting their military cooperation to a great extent and very frequently, to prepare for combined military action if necessary, but also to send convincing messages to anyone who might attempt to prevent this kind of co-operation, which includes cooperation - consensus on the exploitation of the energy resources in the Southeastern Mediterranean.





Not only would the wealth of the energy resources but also ancillary businesses, associated with the advancement of those resources, provide the basis to encourage the stakeholder states in the region for common projects. More specifically, the need for new energy infrastructure, new investments in the region, joint development projects, new refineries, increased transportation channels are likely to contribute to diminish the

on-going conflicts as peace dividends. In other words, cooperation on technical issues linked to energy production, i.e. environmental protection, safety and security of energy installations, can help to build confidence and attenuate risks of confrontations among the related parties.

The prospect of joint developments and trade in natural gas has already resulted in unprecedented cooperation initiatives in the region. **Israel, Cyprus, and Egypt**, which did not develop warm relations in the past, have become economically and politically more reliant on one

another, as the result of new common initiatives in such sectors as energy production, geostrategic alliance and other. Such kind of functional cooperation examples between Israel and Cyprus, accompanied by Greece as well, gradually led to discussions and further initiatives in new and sometimes political-strategic issues. They agreed on the setting up of working groups to examine the feasibility of an **Eastern Mediterranean Energy Corridor** enabling gas exports from Southern Cyprus and Israel to Greece and then on to Italy. If accomplished, such a corridor - the possible result of low-level, technical cooperation and negotiations - would connect Europe and the Middle East in a much broader sense. **Greece** and **Cyprus** have already involved, with **Egypt**, in regional planning to develop and exploit natural gas fields. Referring to its partnership with Israel, Cyprus has offered to mediate between Lebanon and Israel over their maritime border dispute.

The Eastern Mediterranean is a strategic region where zero-sum com-

petition is the regional characteristic. More importantly, the gas findings may complicate relations further in this fragile and volatile region, placing efforts to encourage regional cooperation at the centre of any desirable policy response. The above-mentioned examples show us that the Eastern Mediterranean countries, in line with the functionalist approach, have already formed small scale cooperation models based on the energy sector. However, they could not yet reach to an overarching regional framework. The question here is

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whether broader political and economic integration would be achieved as the inevitable result of bilateral or multilateral agreements in the region. In other words, it is worth asking whether the limited cooperation in energy would be transformed into a formal rules-based structure, covering the whole region and other regional concerns of international stakeholders such as the U.S.A., France, Italy and the E.U. as a whole, as well. If this would be achieved, the gas of the Eastern Mediterranean would play the role of coal and steel in the 1950s Europe.



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