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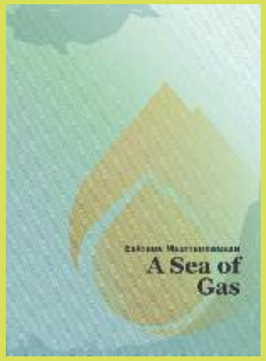
Hope for all

Security provided by the sea. The scenario on the horizon of the eastern Mare Nostrum involves an untapped abundance of energy resources just waiting to be recovered, providing an economic boost to the countries bordering this stretch of the sea. It allows Europe a sigh of relief in its laborious search for alternative oil and gas supply routes.
Turning oil and gas fields into profitable opportunities often requires the joint action of a political normalization process and substantial financial investment. There are also many key players in the field, all ready to play their role in driving development and constructive geopolitical debate. Cypriot President Nicos Anastasiades is convinced of this: he sees an end in sight to the island's energy marginalization in the infrastructure network planned for this area of the Mediterranean. Egyptian Minister of Petroleum and Mineral Resources Tareq al-Mulla is convinced of the potential to transform his country "into a key regional energy hub" in the wake of the discovery of the Zohr supergiant gas field. Lebanon's Energy Minister Arthur Nazarian sees an energy picklock that would free his country from its dependence on the energy imports that currently weigh heavily on its GDP by approximately 10 percent. Israel, in the words of the country's head of energy for the government of Jerusalem, Yuval Steinitz, will gain access, together with Cyprus and Egypt, to almost 400 trillion cubic feet of gas. This "dormant" wealth in the depths of the sea also intersects with the interests of Athens, which, as emphasized by Energy Minister Panos Skourletis, is ready to accommodate the passage of some of the most important planned pipelines, such as the Trans-Adriatic Pipeline (TAP), with the goal of serving as the Mediterranean's gas hub. This goal unites Homer's country with neighboring Turkey, which, according to the President of the Turkish National Committee of the WEC, Hasan Murat Mercan, claims a key role in this arena. The number one commercial partner for Mediterranean gas is certainly the European Union which, speaking through the voice of Vice President of the European Commission for Energy Union, Maroš Šefčovič, welcomes the timeliness of the new discoveries and emphasizes how they could provide a "win-win" opportunity for the countries involved, not only from an economic and energy perspective, but especially in terms of political stability. This is a tempting vision, which is still paid for by the uncertainty that weighs on infrastructural projects, the freezing of the more "capacious" South Stream and Turkish Stream to the TAP and EastMed options, while the motion to extend the LNG transport network is increasingly advancing through the development of new terminals in all countries concerned. This success raises hopes for a positive outcome of the talks that currently seem within reach of an agreement in a region often beset by ideological and religious raids, as documented by historian Franco Cardini's article.

C O N T E N T S

infographic

THE FUTURE MEDITERRANEAN ENERGY SCENARIO



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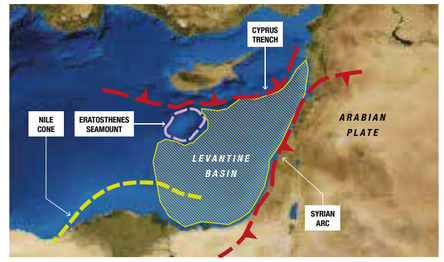
A wealth under the sea

The Levantine Basin, in the eastern Mediterranean, covers the territorial waters of various countries (Egypt, Israel, Lebanon, Cyprus, and Syria) and an area of approximately 80,000 km^2. From a geological point of view, the basin borders to the South with the wide sedimentary Nile Cone, to the North with the underwater Eratosthenes High and the Cyprus thrench and, to the east, with the Syrian Arc and the Arabian plate. A large part of this sedimentary basin is characterized by deep water. The central area of the basin is an abyssal plain with an area of approximately 14,000 km^2 with water depths exceeding 2,000 meters. The basin, which was unexplored until 2009, is currently a region rich in hydrocarbons where, over the past 6 years, many high profile gas discoveries have been made, including some "giants" gas fields. The southern part of the basin—the part of the so-called "NEMED" (North East Mediterranean Deepwater) block—has been intensively explored during the '90s and 2000s in Egyptian waters with some sub-commercial gas discoveries. Subsequently, in January 2009, the basin revealed its great potential in Israeli waters when a joint venture operated by Noble Energy announced the discovery of the Tamar gas field, followed in December 2010 by that of the Leviathan giant gas field and then by many other fields of smaller size. In December 2011, a joint venture also operated by Noble Energy made the first gas discovery in Cypriot waters. The discovery, named Aphrodite, is located in Block 12.
All of these discoveries were made in clastic rocks (sandstones) of Miocene age, which have proven to be good "reservoir" rocks. In these clastic turbidite deposits over 40 trillion cubic meters of gas were discovered in the Tamar and Leviathan gas fields in Israeli waters. The hydrocarbon discovered in Israel and Cyprus is "lean gas", essentially almost pure methane of biogenic origin. A small thermogenic contribution has also been identified in some fields, likely indicating the presence, in the basin, of a deeper active hydrocarbon system; however, as previously mentioned, almost the entire volume of hydrocarbons discovered is "lean gas" of biogenic origin.
The breakthrough of 2015 in the exploration of the Levantine was the discovery made by Eni of the "giant" Zohr gas field in Egyptian waters. The discovery of Zohr was considered a significant event by the oil industry (specifically referred to as a "transformational discovery") not only due to the substantial size of the hydrocarbon accumulation and therefore its strategic importance for Egypt, but also because it marked the start of a new exploratory "play" in the Basin. Zohr, in fact, is a giant accumulation of methane contained in carbonate rocks of Miocene and Cretaceous age. Although rocks of a similar kinds had previously been identified near the coast of the borders of the Levantine Basin, no significant exploratory success had been achieved on this type of sequences, due to the difficulty in finding the basic necessary conditions for the entrapment of hydrocarbons.
The Levantine, therefore, until August 2015, was considered a basin with a great potential for hydrocarbons in clastic sequences, with approximately 35 trillion cubic feet of recoverable resources from existing fields discovered offshore Israel and Cyprus. However, to change the paradigm, in the summer of 2015 came the discovery of Zohr, a discovery "geologically" different from the others, made precisely by drilling a new exploration "play". The well was drilled at a water depth of approximately 1,500 m in the Shorouk Block. The discovery well, Zohr 1, hit a 628 m of continuous gross gas column, 430 m net pay and with a potential of gas in place preliminary estimated at 30 TCF. Indeed, this well has changed the existing dogmas of the basin exploration as the reservoir is provided by Miocene and Cretaceous limestones, in a carbonate reef and lagoon build-up at the southern margin of a very large carbonate platform.
Zohr definively opened up a new play concept with material potential in the Basin and also suggests a different model for the paleogeographic evolution of the Levantine Basin. It had been assumed that, with the exception of the brief Messinian salinity crisis, north of the Nile Delta deep water conditions had prevailed across the basin during the Neogene.
However, the Zohr carbonate platform required shallow water conditions during the Miocene and the Cretaceous clearly indicating the presence of a shallow water basin north of the Nile Delta Cone.
How this shallow water basin is spread out might have consequences for future exploration potential.
The exploration maturity of the basin is in fact at different stages in the various countries. Israeli waters are today the most explored, followed by Egyptian and Cyprus waters. Lebanon waters and Syrian waters are still untouched since no licenses have been assigned so far. Zohr is a "play opener" and most likely we will see other discoveries in this new play type of the Prolific Levantine Basin.
For what concerns the development of these discoveries the games have just started. So far only one field is in Production, Tamar Field in Israelian waters, producing with a subsea tie back to a new platform on Mari B Location and delivering gas to Israeli domestic market.
The PODs of Leviathan, still In Israel and of Aphrodite in Cyprus and Phase 2 of Tamar are in progress, while Zohr development plan has recently been approved by the Egyptian Authorities.
All the gas of Zohr will be routed onshore near El-Gamil plant and will then enter into the Egyptian grid.
Zohr discovery once again tells us that also areas previously explored with limited success can provide great surprises when committed and competent geologists and geophysicts, making the best use of the leading edge technology and developing new geological models and play concepts, decide to challenge new paradigms in exploration.
The Exploration of the Levantine Basin will still provide in a near future further surprises and will confirm the basin as an outstanding gas reserves holder that can feed large volumes to the nearby counties and to Europe in the years to come.



The eastern Mediterranean could become a new gas hub. The potential of recent gas discoveries in the area is truly significant and could rewrite both the political and energy future of the entire region. Europe is also watching the development of these gas fields with interest: the need for gas imports to Europe in 2030 is expected to rise by about 50 percent. The graph shows the main gas fields in the eastern Mediterranean, the extraction potential and a focus on strategies, resources and infrastructure of all countries concerned

The Mediterranean gas hub

(Including the Levant Basin, Nile Delta and deep water basins of Egypt, Israel and Cyprus)

Extraction potential (U.S. Geological Survey)

(Resources yet to be identified)

NILE DELTA	223 tcf (6.3 tcm)*
LEVANT BASIN (OFFSHORE ISRAEL AND LEBANON)	122 tcf (3.5 tcm)*

Cyprus' offshore potential has not yet been quantitatively assessed. (*) Estimate

+50 %

2030

The need for gas imports in Europe in 2030 is expected to rise by about 50 percent

Gas field
Gas production
Oil production
Economic value
Oil pipelines
Gas pipelines
Gas pipelines under contruction
Planned gas pipelines
tcm trillion cubic meters
tcf trillion cubic feet

Greece

Turkey

Cyprus

Syria

Lebanon

Israel

Egypt

Main gas fields of the Mediterranean gas hub:
1 Zohr
2 Aphrodite
3 Leviathan
4 Tamar

CYPRUS
LEVANT BASIN
NILE DELTA

Greece

The country hopes to host transport infrastructure and LNG terminals which would provide considerable revenue for the public coffers. For Athens, security guarantees offered by Israel to Cyprus are an important support for the strategy of containing a never-waning Turkish threat. Greece also benefits from a historic relationship with Russia, with which it shares Orthodox Christianity, in addition to hostility towards Turkey.

Resources and infrastructure

(PLANNED) Burgas-Alexandroupoli

AGREEMENTS FOR THE CONSTRUCTION AND DEFENSE OF ENERGY INFRASTRUCTURE
Greece-Cyprus-Israel

Turkey

As a nation with no significant energy resources, Turkey has benefited from its geographical position, acting as a strategic hub for the transit of oil and gas pipelines that should join the Caucasian and Middle Eastern regions of eastern and southern Europe. The currently operational infrastructure comprises the Baku-Tbilisi-Ceyhan and Kirkuk-Ceyhan oil pipelines, which allow for the transport of crude oil to Turkey from Azerbaijan and the autonomous region of Iraqi Kurdistan, respectively. Energy infrastructure is one of the main elements of the strategic policy of President Recep Tayyip Erdogan, who, in past years, has had strict agreements with various producer countries, specifically Russia, Iran and Azerbaijan.

Resources and infrastructure

AZERBAIJAN - TURKEY
Baku-Tbilisi-Ceyhan

KURDISTAN - TURKEY
Kirkuk-Ceyhan

BEREGOVAJA - ANKARA
Blue Stream

TURKEY - IRAN
Tabriz-Ankara

(UNDER CONSTRUCTION)
Tanap and Tap

(PLANNED)
Turkish Stream

Egypt

President Abdel Fatah al-Sisi hopes to exploit gas fields on the Mediterranean seabed to reduce his country's dependence on aid from the Gulf monarchies and to boost the national economy. The recent gas discoveries off the coast of Egypt, especially of the Zohr gas field, could ultimately alleviate the shortage of energy that has affected the country for several years, with consequences for industrial production and the people. Egypt is now forced to import gas—by launching production in new gas fields, it could become an exporter, even able to supply Europe.

Resources and infrastructure

NATURAL GAS FIELD
Zohr

Cyprus

The waters of the Mediterranean island are rich in gas, but Nicosia fears the influence of Turkey, which has exerted strong pressure so that the gas extracted from the exclusive maritime zone of Cyprus is transported to Europe via Turkey. The Cypriot government therefore turned to its natural allies: the Greek motherland and Israel. The Presidents of Cyprus, Greece and Israel are considering developing common infrastructure for transporting gas: an offshore liquefaction system and an LNG terminal in Greek territory, in which Egypt could also take part, by providing its equipment. Moreover, when oil prices eventually rise, the four countries may seek to construct a gas pipeline that reaches Crete, then the Greek mainland and, finally, the European markets.

Resources and infrastructure

NATURAL GAS FIELD
Aphrodite

LINE OF CREDIT OPENED BY RUSSIA
€ 2.5 billion

Lebanon

The total lack of onshore energy resources has made Lebanon historically dependent on imports from countries in the region. The country also suffers from a lack of infrastructure, especially in the south. In this context, the discovery of major oil and gas fields in the Levant Basin, which includes part of the waters of economic interest of Israel and Cyprus, has raised hopes for Lebanon's energy independence and, therefore, its future stability. To date, the capacity and nature of the gas fields in the territorial waters of Lebanon has not yet been revealed. Their exploration and future exploitation are linked to the political impasse—Lebanon has not had a president since May 2014—which has effectively halted tenders for the granting of licenses.

Resources and infrastructure

IMPORTATION OF ENERGY RESOURCES
7 million tons (10% of the GDP)

Syria

From 2011 Syria has seen the total suspension of activities involving the exploitation of oil and gas fields following the conquest of the country's main wells by the Islamic State. With the imposition of international sanctions in 2012 the main active energy companies abandoned the country. In recent years, ISIS has been the only subject to be able to exploit the oil fields. The latest available data dates back to October 2015, when estimated production was approximately 40,000 barrels a day. Like Lebanon, Israel and Cyprus, Syria also has untapped oil and gas field potential of its Mediterranean coast, in the context of the so-called "Levant Basin."

Resources and infrastructure

PRODUCTION IN 2010
385,000 b/d

PRODUCTION IN 2010
5.3 billion m³/year

PRODUCTION IN 2015
40,000 b/d

2015 PRODUCTION VALUE
1.5 million per day

PRESENCE OF UNEXPLOITED OIL AND GAS FIELDS
in the Levant Basin

Israel

The discovery in 2010 of the Leviathan gas field has converted the country from an importer to an exporter of energy resources, while providing an important tool for the country's economic and geopolitical goals. Along with Egypt's Zohr, discovered by Eni, Leviathan is one of the main gas fields of the Mediterranean and, given its position, able to supply gas to several countries in the region as well as to southern Europe. The importance of the discovery of the Leviathan goes far beyond economics: Israel has a strategic interest in stabilizing the political and social situation in Egypt and in reducing Egypt and Jordan's dependence on the influence of the Arab monarchies of the Persian Gulf.

Resources and infrastructure

NATURAL GAS FIELDS
Leviathan / Tamar
Dalit / Mari-B

Sources: texts by Fabio Squillante, Eni 2015 data

The Mediterranean surprise

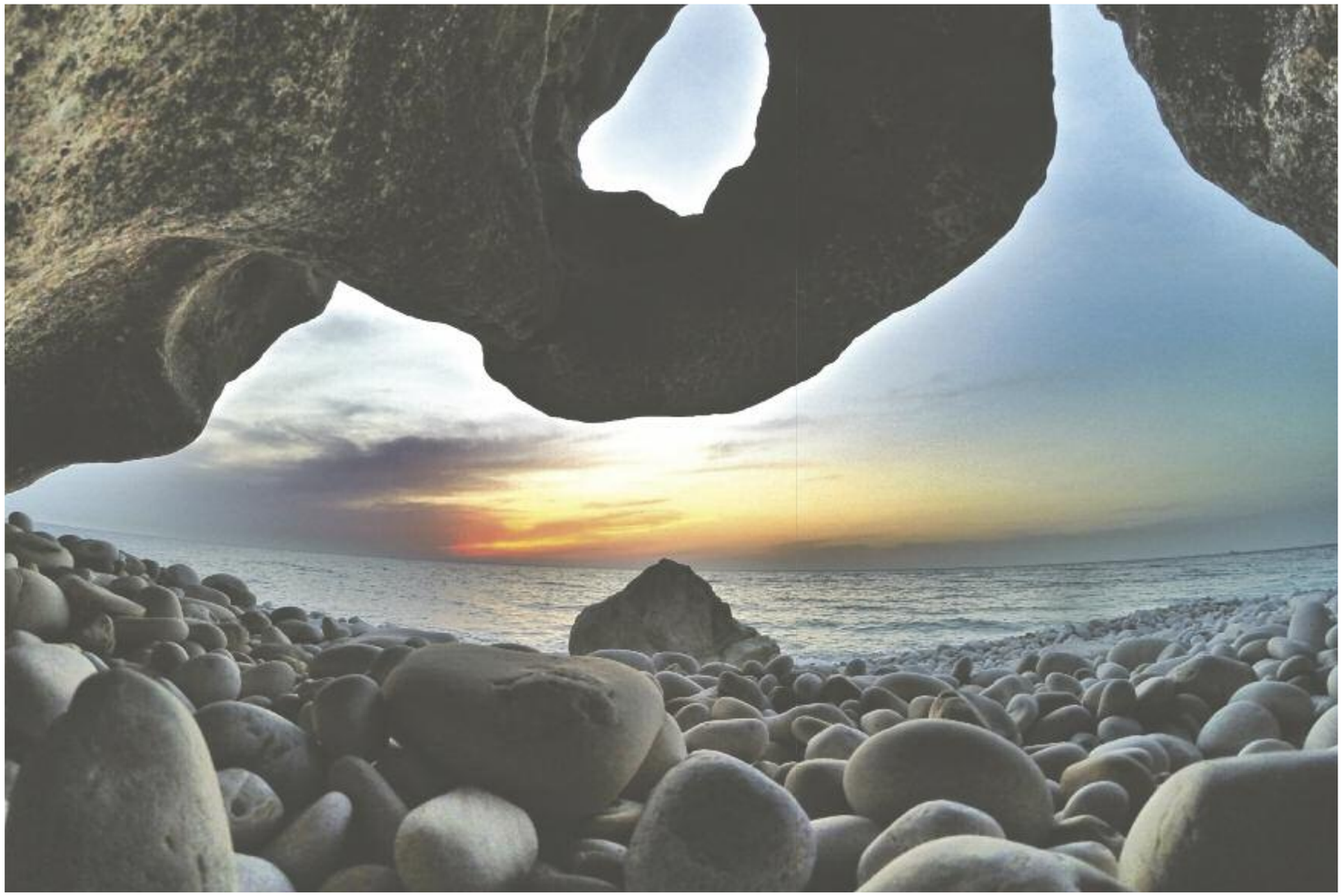
The cradle of civilization, this corner of the world has always been characterized by instability. Now, thanks to energy, it could become a new focal point of development and unexpected opportunities

MOISÉS NAÍM

He is a distinguished Fellow at the Carnegie Endowment for International Peace, in Washington, D.C. and a member of *Oil*'s editorial board. His most recent book is *The End of Power*.

The eastern Mediterranean was the cradle of three great religions, bureaucracies and market institutions. Alexander the Great was born there, the region was the center of the Roman Empire and its ocean was known as Roma's "mare nostrum." Centuries later, the countries bordering the eastern Mediterranean became the Byzantine Empire, and this is also the region where Islam reached its golden age. Cyprus, Greece, Lebanon, Syria, Israel, Turkey and Egypt, the countries touched by this sea, were as alluring as they were unlucky. Recurrent drought, famine, mass migrations, pirates and constant wars made the region dangerous and chronically unstable. In early modern times, between the 16th and 19th century, successive waves of European invaders regularly destabilized the region. Inevitably, the fragmentation →

AN IMPORTANT DEVELOPMENT
Revolutionary technologies used to explore and produce oil and gas deep in the Mediterranean have led to the discovery of hydrocarbons that, once commercially available, will rewrite the energy map of the Middle East and Europe.



and poverty that besieged them took a toll and led to the decline of the region's weight in the world.

The present is even more turbulent

Surprisingly, despite their deeply troubled past, the countries of the eastern Mediterranean and their neighbors are even more dangerous and unstable today than ever before. Syria is rocked by prolonged and bloody civil war, the Shia-Sunni clashes boil over throughout the region. Israel and Palestine seem to have abandoned any hope that peace negotiations can lead to a desirable solution to their old, intractable disputes. Egypt's turmoil is repressed by an increasingly tough military dictatorship. Turkey's economic success has faded from the news and been replaced by news of an increasingly authoritarian government that feels threatened by Islamic terrorists, separatist insurgents, bellicose neighbors and an opposition bent on stopping the hegemonic ambitions of those in power. The Syrian crisis has produced not only over 200,000 deaths but has also spurred the largest movement of refugees in Europe since the end of World War II. Huge numbers of desperate individuals and entire families flee into Turkey and other countries in the region, as they try to seek permanent refuge in Europe. A new version of the Cold War seems to be emerging in the region, as Russia boldly increased its military presence in Syria only to leave a few months later. Powerful terrorist groups such as ISIS have risen in the region while Iran and Western powers surprised the world–and especially the Middle East–by agreeing to an improbable deal in which Iran forsakes its nuclear ambitions in exchange for the lifting of the severe international sanctions it has long suffered and which have ravaged its economy.

A new force is changing the eastern Mediterranean: gas

While the eyes of the world were trained on the multiple tragedies of the region, a major development that has not attracted as much media attention as the conflict may spark unprecedented changes. Revolutionary technologies used to explore and produce oil and gas lying under deep Mediterranean waters have led to the discovery of hydrocarbons in volumes that, once commercially available, will reshape the energy map of the Middle East and, perhaps, Europe. A changed energy panorama will inevitably alter the geopolitical landscape, thus creating new opportunities—and perils. Between 2010 and 2011, when oil prices hovered around $80 per barrel and the price outlook for the medium term was rosy, international energy companies engaged in an ambitious effort to find oil and gas in the Mediterranean Sea. And they did. In fact, their efforts yielded far better results than anyone had expected. In 2010, they discovered the Tamar and Leviathan gas fields in Israeli territorial waters. These fields have combined estimated reserves in the order of 25 trillion cubic feet of gas, a volume that would place them among the 30 largest gas fields in the world, larger—for example—than most gas fields found in the North Sea. These gas reserves are roughly equivalent to two years of Europe's gas consumption. The U.S. Geological Survey estimates that some 122 trillion cubic feet of natural gas could eventually be found in the Levantine Basin, in the eastern Mediterranean Sea, a volume that would make the region an important player in the world of energy. The costs of developing these resources will be high, as a typical development well drilled in that basin will cost between $80-90 million and a gas pipeline to Europe is expected to cost as much as $15-20 billion. These high costs and the technical complexity of the operations had delayed exploration efforts for years. Now, these important discoveries have sparked not just great hopes of energy self-sufficiency for the countries of the eastern Mediterranean but also of an important source of export revenues for their economies.

Two problems: prices and rules

The elation in the region about the natural gas finds has been dampened by the current outlook for oil and gas prices. At current and expected midterm prices, the economics of these new finds are not that promising. In addition, Israel's stance on its domestic pricing of the gas and the regulations that are being considered regarding about the volumes of gas that will be available for exports have raised some concerns among the foreign operators, concerns that could also appear among operators of the newly found Egyptian gas finds if their regulations track those of Israel. The regulatory and tax frameworks are still being debated and negotiated and therefore their final design is still uncertain.
In order for the eastern Mediterranean gas discoveries to become commercially feasible, the international price of oil will probably need to return to the levels that made exploration an attractive proposition in the first place, about $70-80 per barrel.

Will new gas create new friends?

Although these obstacles have generated some skepticism and even the argument by some that these gas fields may never be developed, the magnitude and, particularly, the strategic location of these gas discoveries, close to the European market, are so important that their positive impact will likely outweigh the impact of prices that are too low or regulations that are overly onerous. Prices and regulations will fluctuate, the size and site of the fields will not. In fact, the regional expectations of energy self-sufficiency have already triggered surprising new political alliances and pacts among the countries in the region. Perhaps the most important is the recent alliance of Israel, Greece and Cyprus, which according to the official statement aims to "promote a trilateral partnership in different fields of common interest and to work together towards promoting peace, stability, security and prosperity in the Mediterranean and the wider region." The countries hastened to add that such an alliance did not exclude other parties, possibly referring to Turkey. It is easy to mock the empty rhetoric of these official communiqués but, in this case, a powerful economic reality undergirds the goal of a closer economic partnership among the countries that partake in the eastern Mediterranean energy boom. This alliance of nations that so far have been more prone to be divided than integrated rests on the fact that a joint approach will maximize the benefits of exploiting their shared geological riches.
The core of this alliance is the East Med Pipeline project from Israel and Cyprus via Greece that would export the eastern Mediterranean gas to the European market. This alliance represents a major change in the traditional foreign policy of the countries that take part in it. Greece, for example, had traditionally maintained close links with Palestine but it is now forging a new, energy centered, alliance with Israel. Other potential political and policy moves also triggered by the findings of the Israeli Leviathan and Tamar fields and the smaller Cypriot Aphrodite field include those related to possible gas supplies from Israel to Turkey, and the potential supply of Israeli and Cypriot gas to Europe through the use of existing Egyptian LNG facilities, which are currently underutilized. Egypt had already signed letters of intent to import Israeli gas, in order to re-export it to Europe through its LNG terminals. With the 2015 discovery of the Zohr gas field in Egyptian waters, this possibility now looks more distant. Nonetheless, representatives from the companies developing the Israeli Tamar gas field have argued that the Tamar field is already producing gas, so it will be much faster and cheaper to build a pipeline to the LNG terminal in Egypt than to develop a new field. These uncertainties and fluidity of negotiations about the future utilization of the gas and the norms that will govern its development illustrate the geopolitical complexities prevailing in the eastern Mediterranean region, where multiple economic agendas and political attitudes coexist within a compact geographical area. Nonetheless, it is good news that, despite the problems, the flurry of activity generated by the gas discoveries has brought new energy companies and private investors into the region, attracted by the promise of major economic trade between eastern Mediterranean countries and Europe.

The region between old patterns and new promises

The new gas-driven alliance between Greece, Israel and Cyprus could add further complications to the instability that plagues the eastern Mediterranean nations. Turkey, Palestine or even Egypt might feel excluded and try to respond by launching their own counterbalancing pacts. Will the eastern Mediterranean region be condemned to stay in turmoil forever, or shall its newly found energy muscle provide the necessary impetus for the emergence of a new vibrant and more stable region? There are reasons for optimism, but as Lawrence of Arabia said to Ali in the great Hollywood epic: "Nothing is written."

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Cyprus/An exclusive interview with President Nicos Anastasiades

Our strategy? To bring gas to Europe

The goal is to create a corridor for exporting blue gold to the European Union. The trilateral alliance with Israel and Greece—not only in terms of energy but also politics—will be crucial to this prospect

After emerging from a tough economic crisis that broke out three years ago, Cyprus speeds on towards its goal: to play a leading role in promoting energy cooperation between the countries, most notably between Israel, Egypt and Greece. But the island's ambition is also political and diplomatic, as President of the Republic of Cyprus Nicos Anastasiades explains in this exclusive interview with *Oil*.

SIMONA MANNA

She is a journalist for the *Agi* news agency and contributes regularly to *Oil* and *Abo.net*. Previously, she worked both in the print media (*Corriere della Sera*, *Il manifesto*, *El Pais*) and radio (*AGR*, RCS MediaGroup agency).

Approximately two years ago, the production test began at the Aphrodite gas field in block 12. An event then defined by the Energy Minister, Giorgos Lakkotrypis, as "very symbolic." Since then, what has been happening in the Levante Basin?

Since the production test in the Aphrodite gas field, the exploration activity in Cyprus' EEZ continued in all five licensed blocks. In June 2016, the B12 Contactor submitted a preliminary Field Development and Production Plan, an event of paramount importance towards the exploitation of the Aphrodite gas field. Moreover, Eni's announcement last August of the world class "Zohr" gas discovery offshore Egypt is also a very important milestone, since it confirms the significant gas potential of the East Med region. The aforementioned discovery, which is only 6 km away from Cyprus' EEZ, has proven that apart from the conventional reservoirs that originated mostly by the Nile Delta Basin and with which all previous gas discoveries were associated, there is now a new carbonate reservoirs concept, which changes the exploration focus in the eastern Mediterranean region and is fully associated with the Eratosthenes Continental Block within our →

Nicos Anastasiades

Elected President of the Republic of Cyprus on February 24, 2013, he was previously a member of the country's House of Representatives, to which he was first elected in 1981. During his lengthy term he has served in the Parliament as Chairman of the Committees on Foreign Affairs and on Educational Affairs.

COOPERATION ON THE FRONT LINE

Cyprus, an E.U. member state with a stable legal and political environment, has traditionally implemented a policy based on regional cooperation and the establishment of good and long-lasting relationships with all of its neighbors. The trilateral summit that was held recently in Nicosia (in the picture, a view of the city) with Israel and Greece, form part of this policy.

EEZ. This development has attracted the interest of multiple oil majors, not only for exploration purposes but for investments as well. Consequently, the Council of Ministers of the Republic of Cyprus has decided to launch a third licensing round for oil and gas exploration in the Cyprus EEZ.

The eastern Mediterranean has amazing energy potential. What value can it have for Cyprus, in terms of exports and energy independence?

The Government of Cyprus continues to advance its strategy for the creation of an export gas corridor from east Med to Europe. Ensuring security of energy supply through the exploitation of our indigenous resources is, in fact, one of our main goals. The Aphrodite discovery has brought us a step closer towards achieving this objective. Our energy plans include using Cyprus' natural gas reserves, initially, for electricity generation and, subsequently, to attract energy-intensive industries. Moreover, we hope that possible future hydrocarbon discoveries in our EEZ will further enhance the great potential of east Med to become a gas supplier to both Europe and Asia.

Earlier this year, European Commission Vice President in charge of energy union Maroš Šefčovič visited Cyprus. What is the European Union's position towards Cyprus' energy policy?

Europe's main target regarding Cyprus is to end its energy isolation, interconnecting the island with the energy infrastructure of mainland Europe and LNG storage facilities in Europe. This is also reflected in the support we receive from the E.U. regarding projects of common interest. It is also one of the main policy pillars of my government, and during his visit to Cyprus, Commissioner Šefčovič was very supportive of our efforts. As Mr. Šefčovič pointed out, these objectives will improve Cyprus' security of energy supply, will increase its competitiveness as consumers will have access to multiple sources and will allow the sustainable development of its resources, including renewables. At the same time, he reaffirmed that the European Commission expects the Cypriot and east Med gas to enhance the E.U.'s security of energy supply, by introducing alternative sources and routes of natural gas.

Do the results of the trilateral conference held on January 28, 2016 in Nicosia, attended by the Prime Ministers of Israel and Greece, also have a political importance for Cyprus or is the cooperation limited to the field of energy?

Cyprus, an E.U. member state with a stable legal and political environment, has traditionally implemented a policy based on regional cooperation and the establishment of good and long-lasting relationships with all of our neighbors. The trilateral mechanisms established between Cyprus, Greece and countries in the region form part of this policy. During the Cyprus–Israel–Greece trilateral summit that was held recently, all countries agreed to strengthen their cooperation in order to promote a trilateral partnership in different fields of common interest and to work together towards promoting peace, stability, security and prosperity in the Mediterranean and the broader region. It was also agreed that all parties will further examine practical means for cooperation, as well as for the implementation of joint projects and the exploitation of synergies in the fields of energy, tourism, research and technology, environment, water management, combating terrorism, and migration. Therefore, it is evident that Cyprus—and all countries involved in the trilateral mechanisms—has a lot to gain through this cooperation, not only in the energy sector but at the political level as well. Concomitantly, the recent trilateral summit held in Nicosia is highly important from a political point of view. One of the core aims of Cyprus' foreign policy is the upgrading of Cyprus' regional role, as a friendly country with a positive agenda for the region, the nurturing of constructive, good relations with all our neighboring countries and the promotion of regional stability through close cooperation and mutual understanding. I consider the trilateral summit to be an important step towards this direction, and it is for this reason that the political dimension of the trilateral mechanisms is equally important as the energy dimension. In fact, the energy plans cannot be implemented without the necessary political framework and support.

The eastern Mediterranean could be a new energy hub, strategic even for Europe as an alternative to Russian gas. Among many export routes for Levantine gas, which option seems more viable?

As far as the "Aphrodite" discovery is concerned, prior to the selection of the optimum monetization option for the field's resources, detailed analysis of all alternative options was performed. The block 12 Contractor, in collaboration with the Ministry of Energy, concluded that the most economically viable option for the monetization of the Aphrodite resources, based on existing financial and commercial conditions, is through regional subsea gas pipelines to Cyprus and Egypt. In the case of future discoveries, we will again examine all available options.

The renewed interest in energy reserves in the region relies on the important discoveries of new gas fields in Egypt. Is Egypt also participating in this cooperation between Cyprus, Greece and Israel? What role is it expected to take?

We consider the promotion of cooperation in the field of energy, between Cyprus and our neighboring countries with mutual interests in the area, as one of the top priorities of the Cypriot government. To this end we put a great effort in maintaining good relations with all of our neighbors: Lebanon, Israel, Egypt, Jordan and Greece. Therefore, we aim at extending the high-level meetings between Cyprus-Greece-Israel and between Cyprus-Greece-Egypt to include more countries in the region.

Does the process of reconciliation between Israel and Turkey worry you? Is it possible that this rekindling of relations between Tel Aviv and Ankara will somehow be resolved to the detriment of the cooperation with Cyprus and Greece?

No, the possibility of reconciliation between Israel and Turkey does not worry us at all. We have been informed of the dialogue between Israel and Turkey from the start and we are not opposed to this process in any way. Firstly, it should be stressed that relations between Cyprus and Israel have reached a level that now has its own dynamic, such that other developments will unlikely have a negative effect on them. As for the trilateral cooperation, Israel has already agreed to host the next summit in the second half of 2016. The value of the trilateral cooperation also remains, regardless of the development of relations between Israel and Turkey. What we propose is to fill a political vacuum in the eastern Mediterranean, where a multilateral forum for debating issues of common interest, such as terrorism, immigration, energy and other, between all countries, is lacking. Finally, we do not consider our relations with Israel as zero-sum game. We maintain excellent relations with Israel but, at the same time, we also have excellent relations with the Arab world. In conclusion, we not believe that the revival of relations between Israel and Turkey may have negative effects on our bilateral or trilateral relations.

Beyond gas discoveries, what are your long-term energy projects, also in terms of renewables?

The government of Cyprus has prepared a Master Plan for Vasilikos, a heavy industrial area that will host the Energy Centre. The overall objective of this Master Plan is to offer a complete picture of the area and to examine whether the existing facilities and the proposed future projects and general development of the area, for the next 30 years, will be compatible with current facilities, based on risk, safety, security, environmental and social considerations. The LNG plant, the liquefied and LPG storage facilities, as well as gas-based industries and other energy infrastructures that may be needed in the future, could be accommodated in this area. In addition, the Government of Cyprus is currently promoting three projects that were selected by the European Commission as Projects of Common Interest (PCI's). The first project is the so-called "Euro-Asia Interconnector," an electricity interconnection between Israel, Cyprus and Greece, supported by all three Governments. The second is the gas pipeline project called "EastMed Pipeline," which will connect Cyprus to Europe via Greece. The third project aims at "Removing internal bottlenecks in Cyprus to end isolation and to allow for the transmission of gas from East Med." In effect these projects aspire not only to lift Cyprus' isolation, but they will also constitute the means through which the eastern Mediterranean will be linked to the E.U., Regarding renewables, Cyprus has cooperated with the International Renewable Energy Agency (IRENA) to develop a roadmap for the deployment of renewable energy sources (RES) in order to achieve, by 2020, 13 percent RES share in the gross final energy consumption of the country and 16 percent RES share in the electricity production. The resulting Renewable Energy Roadmap provides a detailed analysis of deployment options and delivers quantitative insights to assist Cyprus with upcoming energy policy decisions. The roadmap indicates that deployment of renewables could greatly reduce energy import dependence, while also lowering the cost of electricity generation in Cyprus.

Cyprus by the numbers

Surface area: 9,251 sq km (of which 3,355 sq km is controlled by the Turkish Cypriot)
Capital: Nicosia
Population: Republic of Cyprus 840,407 (Cyprus census in 2011), 858,000 (estimated at end-2013); *de jure* population in the north (excluding Turkish military personnel) 286,257 (Turkish Cypriot census in 2011), of whom 104,641 were born in Turkey
Language: Greek (official)
Government: Republic

MAIN ECONOMIC INDICATORS
GDP (purchasing power): $27.91 billion (2015 est.)
GDP growth rate: 0.5%
Public debt: 107% of GDP
Inflation: -0.3%

OIL
Production: -
Consumption: 48 thousand barrels/d (2015)

GAS
Production: -
Consumption: -

Source: Eni world oil & gas review 2015; Economist Intelligence Unit (surface area and population)

Egypt/The opportunity to become a crucial regional energy hub

Self-Sufficiency by 2020

According to Tareq al-Mulla, Minister of Petroleum and Mineral Resources, the start of production at new natural gas fields, led by Zohr—planned for 2017—offers the opportunity to achieve this goal

HEND SOLIMAN
[AGENZIA NOVA]

She has worked at *Agenzia Nova* since 2013 as a correspondent in Cairo. As a professional journalist and member of the Egyptian Journalists' Union, she started her professional career with the Cairo daily newspaper, Youm7, where she worked for six years, dealing with internal politics and social policies.

Egypt is on course and tells of an ambitious future, made particularly rosy by the discovery, in August 2015, of the Zohr gas field. A treasure of 30 trillion cubic feet of gas, Zohr should enter into production in 2017. This important event, as explained to Oil by Egypt's Minister of Petroleum and Mineral Resources Tareq al-Mulla, offers the country "the opportunity to become a key regional energy hub," and to focus, with the entry into production of various discovered gas fields, "on achieving self-sufficiency in the natural gas industry by 2020." Not to mention foreign investment, which, if the rest of the world were to suffer a setback, would continue to be made in Egypt and, with Zohr, are expected to increase. Ultimately "this discovery should persuade international oil companies to invest and intensify exploration activities in the region, opening new horizons to other discoveries."

At the end of August, Eni's discovery of the Zohr gas fields caused a stir around the world. What are your expectations in relation to this resource, and when will this gas field become operational?

The discovery of the Zohr gas field, announced by our partner Eni in El Shorouk, within the concession area belonging to the Egyptian EEZ [Exclusive Economic Zone] in the Mediterranean Sea, has revealed the existence of 30 trillion cubic feet of gas that will mainly be used to cover part of the needs of the local natural gas market. According to the development plan, agreed between the Egyptian Natural Gas Holding Company (EGAS) and Eni, the gas field is expected to enter into production in 2017. Currently, activities are underway for the construction of onshore facilities for receiving gas through the offshore pipeline linking Zohr to the refining zone in Port Said, so that it can be injected into the national gas grid. The formation of the Petro-Shorouk Development Corporation is also being provided for in order to accelerate the development of the first phase of production of wells and in order to make them fully operational by the end of 2017. Moreover, the drillship Saipem 10000 has already reached the gas field and begun its drilling operations on the Zohr–2 well, which will be completed shortly. This discovery—a new hydrocarbon-rich geological formation, in an area in which gas has never before been discovered, neither in Egypt, nor in the Mediterranean—should persuade international oil companies to invest and intensify exploration activities in the region, opening new horizons to other discoveries, which will help to increase natural gas production rates in Egypt. There is no doubt that the discovery of Zohr will encourage international companies operating in the Mediterranean region to reconsider their operations and existing exploration facilities, and will lead to an acceleration of processes and drilling activities by virtue of the excellent results that can be achieved in the region.

What is your view on the front line role that Egypt might play in the region, in light of its current and future potential?

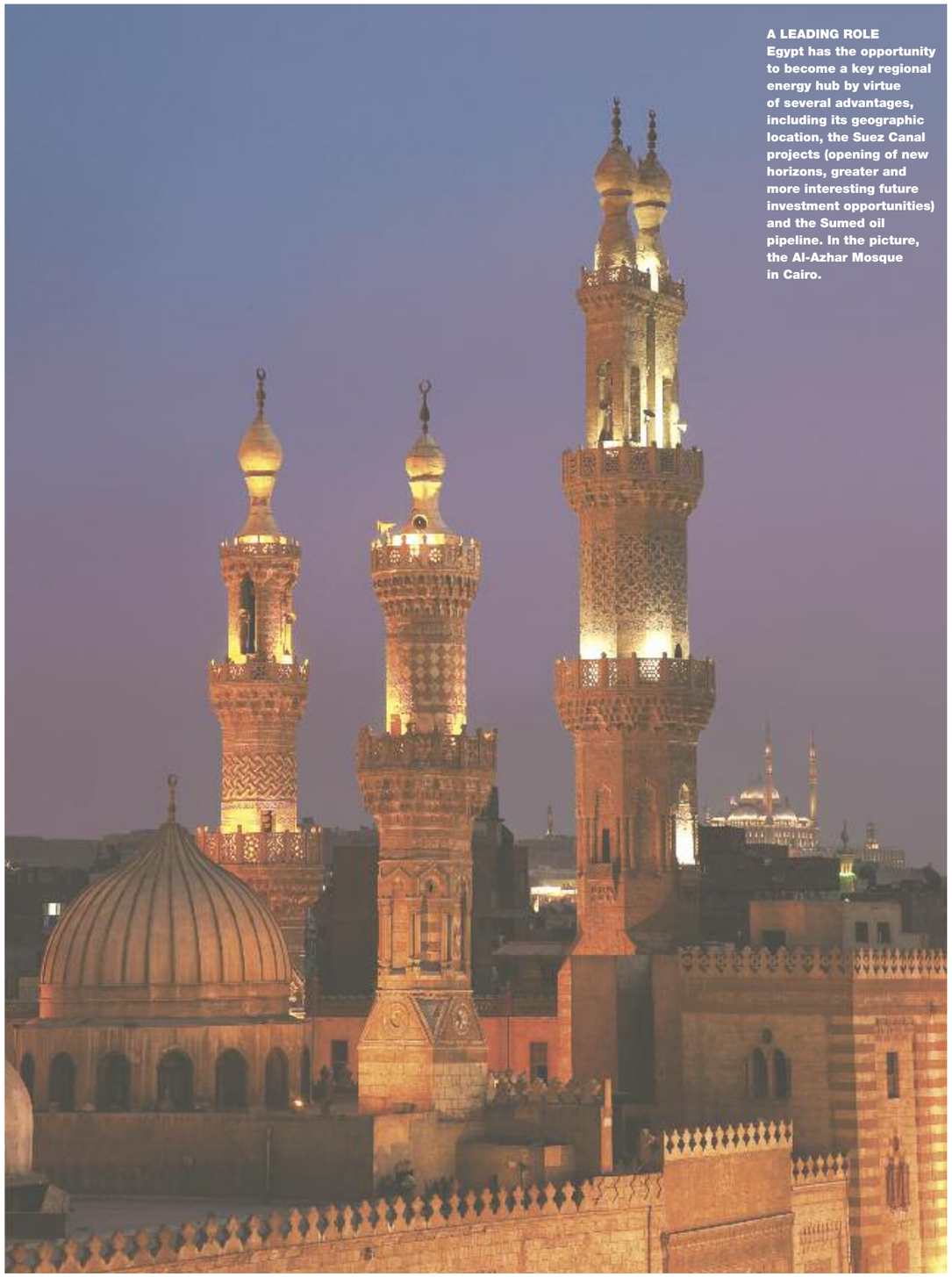
In effect, Egypt has the opportunity to become a key regional energy hub by virtue of several advantages, including its geographic location, the Suez Canal projects (opening of new horizons, greater and more interesting future investment opportunities) and the Sumed oil pipeline, in addition to the availability of oil and infrastructure for gas within an integrated network of oil pipelines for the transport of oil, gas and LNG, projects in the refining and petrochemical industry and, above all, qualified, expert human resources.

What can you tell us regarding new Egyptian projects in the gas industry over the coming the years?

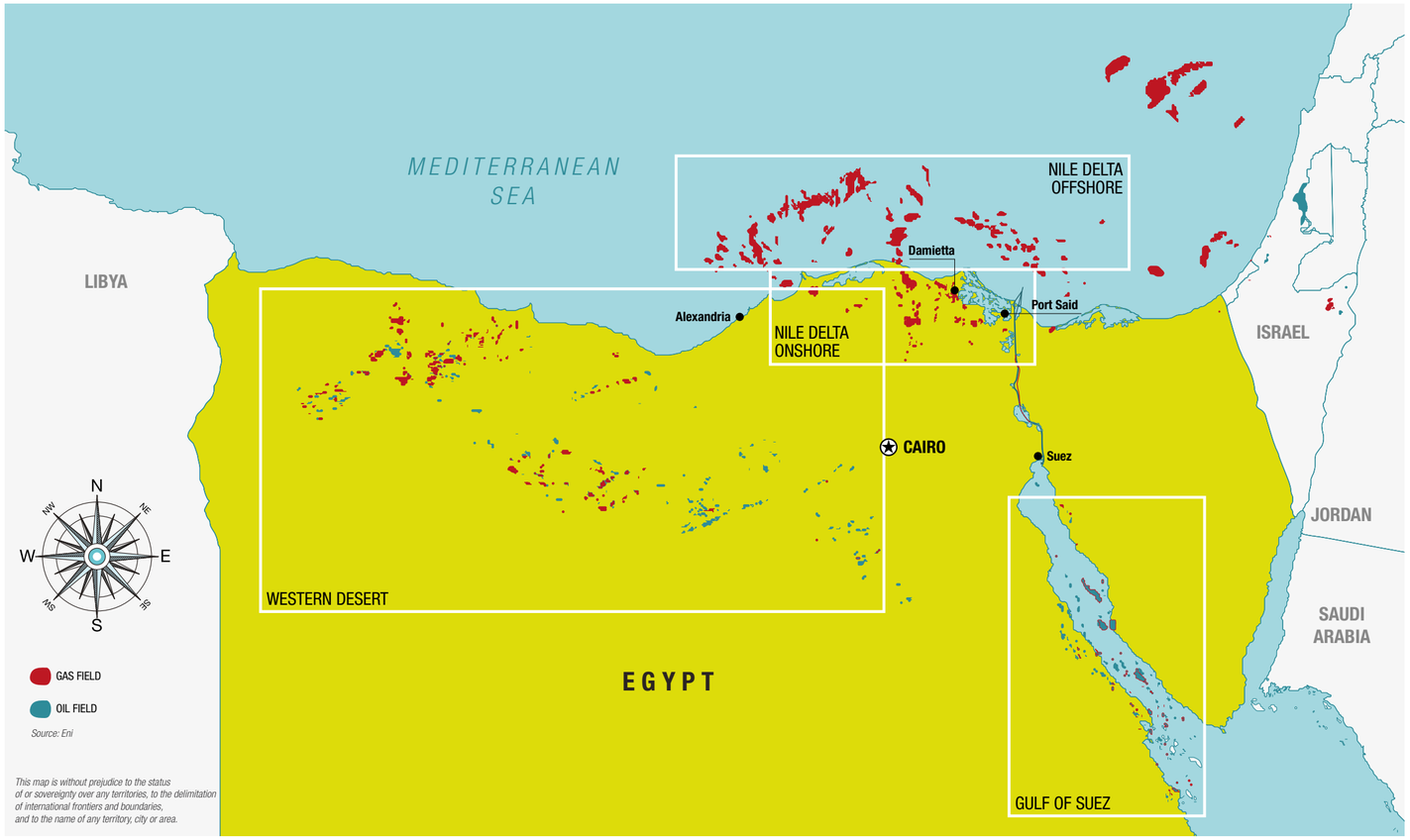
We are currently proceeding, in collaboration with our foreign partners, with the implementation of programs for the development of gas fields discovered in the deep waters of the Mediterranean, which involve 3 new projects—for a total investment of USD 27 billion—aimed at drilling wells and creating infrastructure required to cope with expected production. As regards the projects for Zohr, North Alexandria and Atoll, these are expected to enter into production by the end of next year, with a capacity of 1.9 billion cubic feet per day, so as to help offset the natural decline in production of "mature" gas fields and to increase Egypt's total gas produc- →

Tareq al-Mulla

Tareq al-Mulla has been Egypt's Minister of Petroleum and Mineral Resources since September 19, 2015, when his predecessor, Sherif Ismail, was appointed Prime Minister. He previously worked at Chevron and at the Egyptian General Petroleum Corporation (EGPC), where he rose to hold the office of Executive Chairman.



A LEADING ROLE
Egypt has the opportunity to become a key regional energy hub by virtue of several advantages, including its geographic location, the Suez Canal projects (opening of new horizons, greater and more interesting future investment opportunities) and the Sumed oil pipeline. In the picture, the Al-Azhar Mosque in Cairo.



Egypt by the numbers

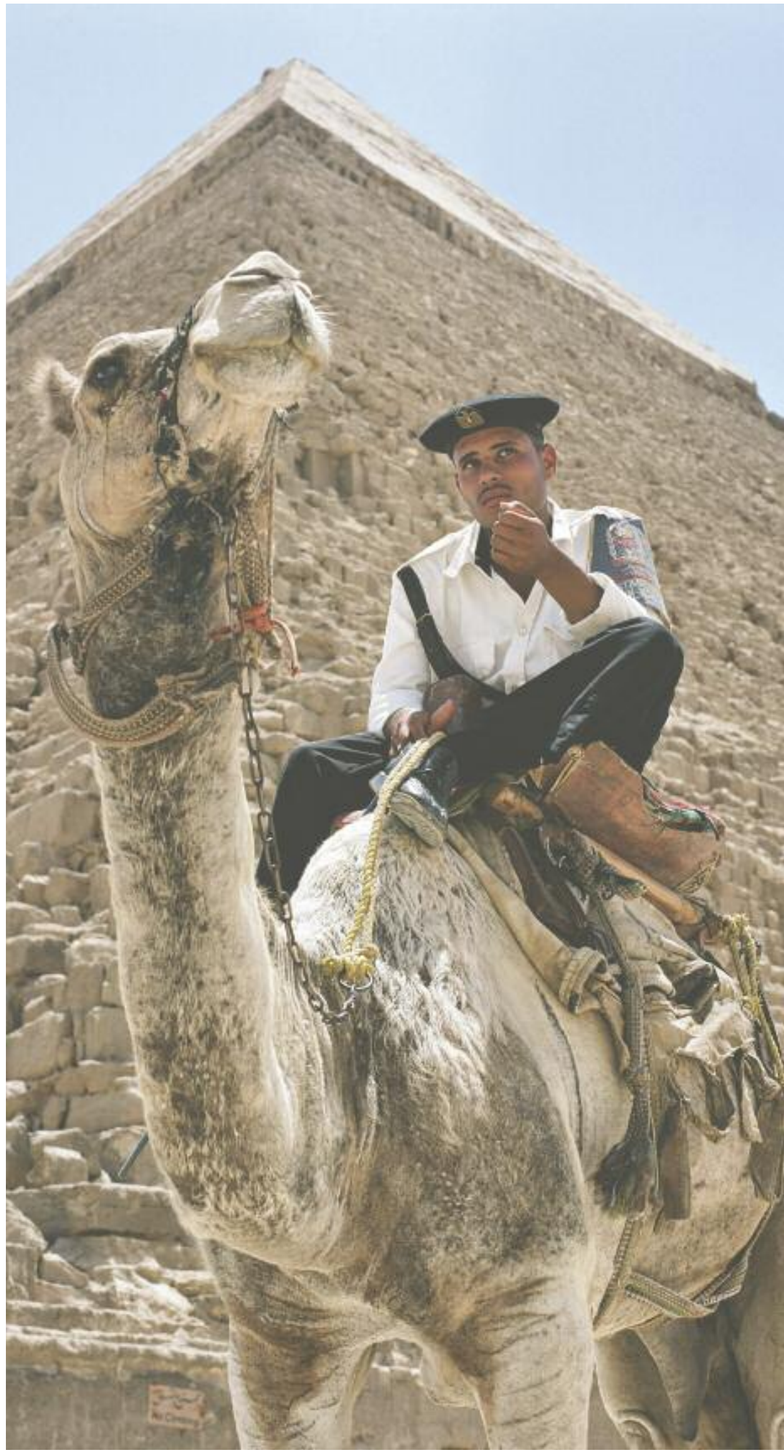
Surface area: 1,001,450 sq km
Capital: Cairo
Population: 88,487,396
Language: Arabic (official)
Government: Republic

MAIN ECONOMIC INDICATORS
GDP (purchasing power): $996 billion
GDP growth rate: 4.2%
Public debt: 91.7% of GDP
Inflation: 10.4%

OIL
Production: 699 thousand barrels/d (2014)
Consumption: 881 thousand barrels/d (2014)
Reserves: 4,400 million barrels (as of 31/12/2014)

GAS (billion/mc)
Production: 46.55 (2014)
Consumption: 44.49 (2014)
Reserves: 2,168 (as of 31/12/2014)

Source: Eni world oil & gas review 2015



tion in order to bridge the current gap between production and consumption. With the entry into production of the newly discovered gas fields, we are aiming to achieve self-sufficiency in the natural gas industry by 2020. At the same time, we are developing and expanding infrastructure for transporting gas to consumers in order to ensure their needs through a series of projects aimed at expanding the national network. Moreover, the construction of new gas pipelines to transport natural gas to areas where it is consumed will meet the needs of residential units and electrical power plants, including the large electrical power plant built by Siemens Co. which will supply the new administrative capital and other areas.

The global fall in oil prices has prompted many large companies to reduce their investments in various countries of the world. What consequences has this had for production and investments in Egypt's oil and gas industry?

Despite the current fall in oil prices on the global markets and despite concerns regarding the possible negative impact that this may have on investments in the field of exploration and development, there are positive signs for Egypt's oil industry. The international companies operating in Egypt have confirmed their commitment in relation to previously agreed work programs and are investing in accordance with planned projects, in order to take advantage of the price reduction to seize the opportunity offered by low drilling costs and low oil services costs. Also, the high rates of success of explorations in Egypt, the balanced conditions of agreements, the short periods for supplying new areas and new contracts, and the extensive efforts of the oil industry aimed at providing new solutions, are encouraging foreign oil companies to maintain their investments. With regard to flows of investment in the oil industry, we can say that these are currently proceeding normally, since the minimum investments of foreign companies operating in the upstream sector over the last fiscal year 2014/2015 in Egypt amounted to approximately USD 7.5 billion. Moreover, it is expected that the figure relating to investments from foreign companies will grow over the coming years, following the launch of major projects–such as Zohr–in the oil and gas fields of the Mediterranean and North Alexandria. Since November 2013, we have signed 64 new oil agreements with major international companies aimed at oil and gas exploration in the regions of the Mediterranean, the Nile Delta, the Western Desert, the Gulf of Suez and the Sinai, with minimum investments of around USD 14.3 billion and with the drilling of 274 wells; all this thanks to the constant oil industry policy aimed at increasing the number of agreements with major international companies and inviting them to invest in promising opportunities in Egypt. In fact, we have already begun to reap the benefits of these agreements, for instance, with the recent discovery of Zohr in the concession area of El Shorouk, in the Mediterranean, which was the result of an agreement signed with our partner Eni in January 2014.
Moreover, over the coming months, we are aiming to close ten new agreements after completing the required legal procedures, with minimum investments amounting to USD 441.95 million and a bonus at the time of signing of USD 61.7 million for the drilling of 28 wells, specifically, eight agreements with EGAS and Ganope, resulting from previous rounds of tenders from the two companies in 2015, and two agreements with EGPC.

In addition to the historical role played by Eni, what can you tell us about the Italian companies operating in Egypt: how can current cooperation be improved?

The collaboration between Italy and Egypt in the oil industry, which dates back to the fifties, is considered a clear and reliable model, which has contributed positively to promoting bilateral relations between the two countries, and there are many Italian companies operating in Egypt, such as Eni, Edison, Technip. Eni has been operating in Egypt since 1954, through its subsidiary IEOC, which is one of the main oil companies in Egypt and, it is thanks to this fruitful collaboration that the discovery of Zohr was made. In January 2014, Eni signed an agreement with the Minister of Petroleum and (EGAS) after being awarded exploration rights during the international round of tenders organized by EGAS. This discovery confirms the importance of the strategic partnership between the Egyptian oil industry and Eni: a collaboration as long as the history of Italian companies in Egypt.

Israel/From CERAWeek, the hopes of Energy Minister Yuval Steinitz

From gas to stability

If supported by a suitable system of infrastructure, this energy source could "contribute, at least in part, to the stability of the Middle East. The hope is that in the future the area will be as quiet and peaceful as Europe"

This map is without prejudice to the status of or sovereignty over any territories, to the delimitation of international frontiers and boundaries, and to the name of any territory, city or area.

Source: Eni

Israel by the numbers

Surface area: 20,770 sq km
Population: 8,049,314
Language: Hebrew (official)
Government: Parliamentary democracy

MAIN ECONOMIC INDICATORS
GDP (purchasing power): $281.8 billion
GDP growth rate: 2.5%
Public debt: 64.4% of GDP
Inflation: -0.6%

OIL
Consumption: 235 thousand barrels/d (2014)
Reserves: 12 million barrels (31/12/2014)

GAS (billion/mc)
Production: 7.39 (2014)
Consumption: 7.45 (2014)
Reserves: 217 (31/12/2014)

Source: Eni world oil & gas review 2015

RITA LOFANO

U.S. News Correspondent at *Agi*. Based in Houston, "The Energy Capital of the World," she has been reporting for Eni's publications for eigth years.

Israel is a key country in the eastern Mediterranean region, especially since the discovery of the Leviathan gas fields, whose estimated reserves amount to approximately 622 billion cubic meters. It is one of the main gas fields in the Mediterranean and, with its strategic position, is intended to supply gas to several countries in the region and southern Europe. Moreover, if the Leviathan is one of the largest gas reserves in the world, the region "is largely unexplored and new discoveries are expected " assures Israel's Minister of Infrastructure, Energy and Water Yuval Steinitz, speaking at CERAWeek, one of the world's most important energy conferences, emphasizing the role of gas as a source of stability. In an area as contentious as the Middle East, natural gas may drive other countries to work together with the common goal of making this area an energy hub, thereby promoting the return of economic and political stability. The Minister, interviewed by *Oil*, also commented on the discovery of Zohr: "This is a very important discovery for Egypt, but it is not enough even to meet only Egypt's need … this is why the prospect of exporting Israeli gas to Egypt or via Egyptian LNG terminals to Europe, or elsewhere, remains relevant," emphasized Steinitz on the impact that the supergiant gas field discovered by Eni may have on the Leviathan. Below, the main issues raised during his speech at Houston are discussed.

Gas as a possible element of harmony

It's no secret that the Middle East is not the most convenient and easy neighborhood on the face of the earth. But the countries that I mention are already cooperating with each other to a certain level. I mean the economic relations between Israel and Turkey are very strong. Also, the relations with Cyprus and Greece. We have good diplomatic relations with Jordan and Egypt. And I think that if we will be able either to supply gas to some of our neighbors or, maybe better still, if the east Med basin becomes a significant source of gas to Europe, and we have to combine our efforts together (and we are already coordinating to a certain level between Israel, Cyprus, Egypt and Greece), this might help some of the countries of the region including Israel economically, and it might also serve stability in the region. The overall estimate is that in this triangle between Cyprus, Israel and Egypt, the joint economic waters of those three countries, you might end up with 10,000 bcm or the equivalent of several hundred Tcf, 350-400 Tcf. So this potential looks very significant. It was unexplored, this region. It was unexplored so far, and if this will take place and we will combine our efforts, Egypt, Israel, Cyprus, Greece and hopefully also Turkey, I think it might serve stability, at least in part of the Middle East. And you know, I just mentioned the most stable and moderate and democratic countries in the region. And if you see, you know, the sad events, the horrible turmoil and bloodshed in Syria, in the Syrian Civil War, in Iraq, in some other parts of the Middle East, I think that cooperation between Israel and its neighbors in supplying gas, exporting gas to Europe, either through Egypt or through Turkey or building a pipe that will serve Israel, Cyprus and Egypt together towards Europe, of course I think this might serve our economy and also might serve stability, at least in this part of the Middle East which is relatively stable so far. but let's hope it will remain stable and prosperous in the future.

Pipelines look towards Europe

We're examining three options, three pipes. One pipe will go from Israel, from Israeli economic waters, to Egypt, either for domestic demand in Egypt or through Egyptian LNG, which are now empty in the Egyptian delta, to Europe. The other pipe will go from our economic waters or gas fields to Turkey; and through Turkey to the Turkish market and also to Europe. And we are now examining together. […] So we have a little summit in the eastern Mediterranean, Israel, Cyprus and Greece, and those are the size of the eastern Mediterranean. And we are examining seriously the possibility and the feasibility of a very long pipeline, gas pipeline, going from Israeli economic waters through Cyprus to the Greek mainland, and through Greece to connect ourselves to the European market. Europe needs much more gas in the future. Some fields in the North Sea are already on the verge of depleting. →

Yuval Steinitz

He is the Israeli Minister of National Infrastructure, Energy and Water Resources. Steinitz also oversees the Israeli Atomic Energy Committee and leads efforts to counter the Iranian nuclear program. Prior to his current position, he was the Minister of Intelligence from 2013 to 2015. Steinitz was the finance minister of the Israeli government that served from 2009 to 2013. He constructed the stimulus package of 2009, and later designed and implanted major reforms in the energy, technology and housing sectors. He led Israel's accession to the OECD in 2010.

A GOVERNMENT STRATEGY. Steinitz, in the picture with Prime Minister Netanyahu, said that Israel "concluded the new unified and inclusive government natural gas policy," giving a ten-year stability commitment that the country is not going to make more dramatic changes. "Now we think that the atmosphere and the conditions might invite and attract new players."

And the Israeli gas fields can be used for replacement in the next 20-25 years, especially if we connect ourselves by pipe and not just by energy to the European market. What we have done recently, you know, we had to update our regulation system, all of the regulations. But you have also, one day, to conclude the regulatory phase, and that's what we have done in the last few months. We concluded the new unified and inclusive government natural gas policy, and we gave a ten-year stability commitment that we are not going to make more dramatic changes. And now we think that the atmosphere and the conditions might invite and attract new players.

The effect of low oil prices

Many people consider this a very difficult time for the development of new fields or the exploration for new fields, because of the very low oil and gas prices [...]. I think you can view it in two different ways. One is okay, it's difficult. Prices are low, let's wait. The other way to look at it, the more optimistic way, is this is an opportunity here. Because if you have a very large field like Leviathan, and you have to invest several billion dollars, it will take four years until it will start to produce. Then also, development costs went down by 20-30 percent, but you will produce and export gas for the next 20 or 30 years. So you can look at it also as the right time to develop. You know, it's like the stock market. When the market is going down, many people are exiting the market. But those who are able still to invest might say this is the right time. Costs are lower than before, and this is also for the development of gas and oil fields. And in the future, we can see the benefit of current investments. So we are trying to remain optimistic. The development of Leviathan, I think already started, we already see concrete plans. And we are going to reopen our economic waters for future discoveries in a few months from now. And we think that the prospect of exporting gas, not just to the vicinity but to Europe from the eastern Mediterranean, from the economic waters of Israel, Cyprus and Egypt, looks very promising.

The challenges for reducing emissions

What we are doing, first, nowadays three years after we started producing natural gas, already close to 60 percent of our electricity, as I mentioned before, is based on natural gas. It was 50 percent, but just two months ago I instructed the Israeli Electric Company to shift another 15 percent from coal to gas, to natural gas, this year. We are putting very heavy taxation on cars according to the pollution. And we are even going to give very strong incentives now for cars, especially trucks and transportation, on natural gas. And I hope that we will be able to reduce emissions. But I think that the most important thing still if we want really to preserve our little world, we have to mention ourselves that the cleanest energy is the energy that is not being used—that was actually saved. And here we know a lot of R&D and a lot of innovation. […] On innovation, Israel is not a dwarf. Actually, we are number one in the world in startups per capita, technological startups per capita. In total, the figure is second only to the United States. And just to give you the context, in little Israel there are more technological startups than the rest of the European Union altogether. Now so far, we didn't focus enough on renewable energies and saving energies. But we are going to give a lot of incentives to R&D and to innovation in these fields in the future. And I think that, you know, we already have some agreements with our American friends, with the U.S. Secretary of Energy Ernest Moniz, about working together or giving incentives to the private sector from both sides; and for academia, the universities from both sides, the research institutions, to work together on this. And of course with other countries, like Canada, Australia or hopefully also Mexico, in the future. […] Maybe it's not that popular to speak about reducing energy in general. But I think that the world is growing and economies are growing. And the best thing will be not just to see how we can adopt cleaner kind of energies like natural gas or renewable energies but also how can we reduce, or at least restrict, the use of energy altogether. For this we need real innovations. And here I am confident that, together with my colleagues in other countries, Israel can and will try to make a serious contribution to this in the future.

Electrical interconnections in the area

Currently, we do have an agreement with Cyprus to connect the Israeli electric grid with the Cypriot electric grid, and later on, the Cypriot electric grid with the Greek electric grid. So far, you know, Israel is an energy or electric island. Cyprus is also an electric island. And what was one of the decisions in the last summit of these three countries in Nicosia was to connect the grid with the undersea, underwater cable between Israel, Cyprus and Greece. This will be for the benefit of the three countries. I hope that in the future, we shall see a different and more stable Middle East and then of course, it will be for the benefit of all sides to connect the electric grid [...]. So far, we are speaking about connecting gas supply to Jordan and to Egypt, and as I said before, also through Egypt. And this is also something quite new in the region. And let's hope that in the future, the Middle East will be quiet and placid. You know, like Europe: also Europe in the past, 100 years ago, Europe was a very difficult place; two world wars, and then at least Western Europe, Central Europe became placid and very cooperative. I hope that one day—the sooner the better—this will be also the situation in the Middle East.

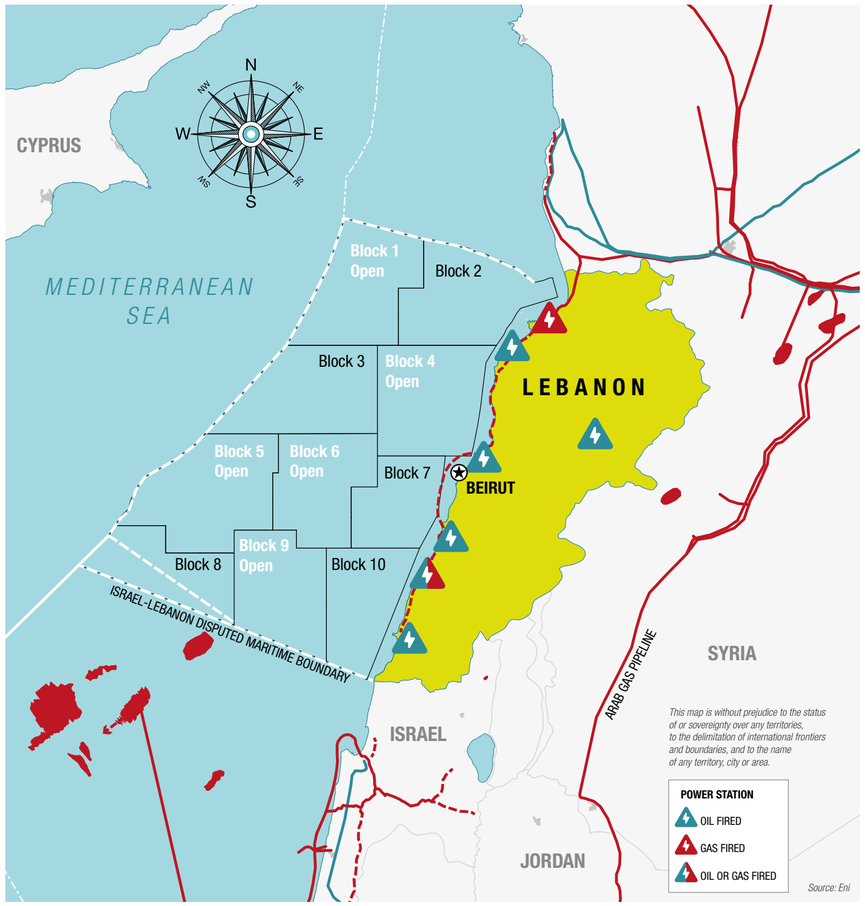
Arthur Nazarian

As of 2014, he is the Minister of Energy and Water in the national unity government headed by Prime Minister Tammam Salam. He has held minister positions in two government agencies, Environment from 1998 to 2000 and Tourism.

Lebanon/Arthur Nazarian, Minister of Energy and Water

Energy independence on the horizon

The discovery of significant oil and gas reserves raises hopes for autonomy. A law has already been passed to regulate the exploitation of oil and gas fields, but everything is at a standstill due to a political impasse



Lebanon by the numbers

Surface area: 10,400 sq km
Capital: Beirut
Population: 6,184,701
Language: Arabic (official)
Government: republic

MAIN ECONOMIC INDICATORS
GDP (purchasing power): $83.86 billion
GDP growth rate: 2%
Public debt: 138.8% of GDP
Inflation: -3.5%

OIL
Production: -
Consumption: 147 thousand barrels/d (2014)
Reserves: -

GAS
Production: -
Consumption: -
Reserves: -

Source: Eni world oil & gas review 2015

SIMONE CANTARINI
[AGENZIA NOVA]

A journalist, for the last seven years he has covered the Middle East and North Africa. In 2010, he began to cover Libya, writing articles and analyses in economic and social fields. He moved to *Agenzia Nova* in 2014 and continues to deal with with Middle Eastern issues, paying particular attention to the energy and defense industries.

he lack of exploitable energy resources makes Lebanon dependent on oil and gas imports from countries in the region. Each year, the state purchases approximately 7 million tons of oil products, a figure that weighs heavily on the country's gross domestic product at around 10 percent. The persistence of low prices on the oil market brings benefit to the country, which has reduced spending on imports by $7.2 billion to the current $5 billion. In an interview with Oil, Lebanon's Minister of Energy Arthur Nazarian stresses that this situation supports the local economy, allowing companies to compete with other countries in the region, which, unlike Lebanon, benefit from subsidies on energy prices. For the future, the government of Beirut still aims to exploit hydrocarbon deposits located in its exclusive economic zone (EEZ), the capacities of which have not yet been made public. The discovery of significant oil and gas reserves has raised hopes of future energy independence for Lebanon, raising expectations for a stabilization of the country. Minister Nazarian reminds us that a law has already been proposed to regulate the exploitation of national oil and gas fields, and that a cooperative effort has been launched with the French Institute of Petroleum, in order to interpret geophysical data collected from the seabed. Exploitation of the basins is hindered, however, by an impasse which is currently afflicting the country's politics. Lebanon has not had a President since May of 2014, and this freezing of politics has halted tenders for the granting of licenses to energy companies. In this framework, the government is attempting to diversify supplies, at least in the short term, by reducing the economy's dependence on oil and gas. As Nazarian emphasizes, the aim is to bring energy production from renewables to 12 percent of the total by 2020 with the installation of solar panels and the construction of wind farms.

Can you describe Lebanon's energy situation? What impact does the scarcity of resources have on the national economy?

Lebanon is an oil and, more generally, energy importing country. Costs incurred for energy have a greater effect than any other item in our GDP: in 2015, they accounted for almost 10 percent of GDP, with over 7 million tons of imported oil products.

What consequences does the fall in oil prices have on your energy economy?

The fall in oil prices will undoubtedly have a positive impact on the national economy. In fact, prior to this turnaround (2014), our energy bill exceeded USD 7.2 billion, while in 2015 it dropped to around $5 billion. This decline is expected to have two significant effects: the first, on government expenditures in terms of subsidies granted to Electricité du Liban for the purchase of fuel and diesel; the second, on the local industry which has been affected by the competition with products from neighboring countries, where energy costs are supported by the state. Ultimately, Lebanese consumers will benefit from this price reduction in all industries that use oil.

What role does renewable energy play in government policy?

Within the framework of the national plan for the redevelopment of the electricity sector adopted in June 2010, the Lebanese government is committed to ensuring that, by 2020, 12 percent of energy production is derived from renewables. To achieve this goal, the Minister of Energy is working on implementing various projects:
- Installation of solar panels along the Beirut River (1 MW, to date).
- Installation of solar panels in Zahrani (3 MW).
- A tender is currently underway for the construction of a 100 MW wind farm.

Which countries might be of particular help to Lebanon in the construction of the infrastructure needed to exploit oil fields?

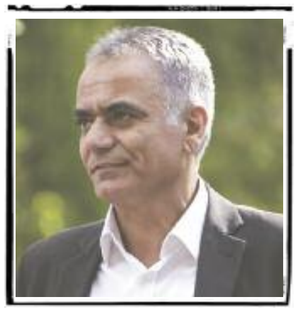
Lebanon, with the support of the Norwegian "Oil for Development" program, has already formulated a law that regulates the exploitation of national oil fields. We have also launched a cooperation with the IFP (French Institute of Petroleum), which has provided us with the assistance needed to interpret geophysical data on our seabed, and we have signed various protocols for technical collaboration and transfer of knowledge and technologies with countries willing to offer their support.

In recent months, the waste crisis has been the focus of media attention. Would there be a possibility of constructing incinerators or biomass power plants?

The plan for redeveloping the electricity sector approved by the national unity government in June 2010 has an entire chapter devoted to the production of energy from waste. Unfortunately, however, the plan has been hindered on several fronts and its implementation is still encountering huge difficulties related to internal political conflicts, in addition to the weak regulatory framework. This is why the waste to energy sector has been heavily penalized and we have not yet been able to seize the opportunity to use waste for generating electricity.

ABO About Oil

On www.abo.net, read other interviews.



Greece/Candidate as a future energy hub

A new role for Athens

According to Panos Skourletis, Minister of Environment and Energy, the country "aims to present itself as an energy bridge linking Israel and Cyprus to Europe." The Tsipras government is negotiating a network of agreements to realize this goal

KOSTAS PSOMIADIS

He is a journalist, specializing in economic and energy issues. Psomiadis lives and works in Athens where he directs the weekly journal Finance & Markets Voice and the informative website FmVoice.gr.

Greece, like Italy and Cyprus, is geographically well positioned to host infrastructure expected to radically revolutionize the energy structure of the eastern Mediterranean, in particular the long-awaited diversification of oil and gas supply routes, promoted by the European Commission through the East Mediterranean gas hub project. The prospect of this project is very dear to Athens, since the hoped-for economic exploitation of this resource could finally bring a breath of fresh air capable of lifting an economy stifled by an economic crisis that has placed not only fate of the country at risk but also the entire European Union. For this reason, the Tsipras government is conducting negotiations aimed at building a network of relations and functional agreements in order to take the first concrete steps forwards for the entire project. The confirmation comes directly from the Greek Minister of Environment and Energy, Panos Skourletis, the architect of a strategy of constructive dialogue, even with the easternmost bank of the Levant Basin, where the main interlocutor might well be Jerusalem.

What does Greece gain from its trilateral collaboration with Cyprus and Israel?

The cooperation between the three countries is a strategic decision of great importance for us. It has set in motion a process that will lead to the creation of a new energy scenario in the region, bringing multiple benefits. Greece aims to present itself as an energy bridge connecting Israel and Cyprus to Europe. It is an initiative that supports the more general effort to transform our country into an energy hub. Obviously, it also contributes in the best possible way to the European Union's energy security issue, by differentiating energy sources and access routes. A trilateral commission specifically for energy issues is examining the next steps. Firstly, the issue of gas transport from Israel and Cyprus to Greece, through the construction of the EastMed gas pipeline or another useful manner. At a more advanced stage is the project for the connection of electricity networks of the three countries through the EuroAsia Interconnector cable. I am certain that the cooperation between our countries will have the effect of maximizing the efforts made so far.

This collaboration also includes Egypt. Do you plant to define the Exclusive Economic Zone (EEZ) with this country within a short period of time?

Recently, a trilateral summit was held between Greece, Cyprus and Egypt. During this event, our cooperation with Egypt was confirmed on many fronts. This is a constantly intensifying collaboration with a clear economic logic, but one that does not hide the intention of wanting to contribute to the stability and pacification of the entire area. In this context, we are in discussions with Egypt on a political level, but we are also advancing the work of technical committees, in order to define our respective maritime zones, on the basis of international law.

Even the definition of the EEZ with Cyprus still remains pending. Does your government intend to take measures in this regard?

Talks with the Republic of Cyprus to define the mutual Exclusive Economic Zone have been continuing for some time and we are now in an advanced stage. I take for granted the Greek government's willingness to mark the progress in the process of defining the maritime zones, always under the guidance of international law. It is on this basis that every issue concerning the definition of the EEZ is discussed.

Wil there be a new competition for exploration permits in the Ionian blocks? Why does this procedure seem to be so slow?

The last competition involved 20 maritime blocks in the Ionian Sea and to the south of Crete. The seal to the bids has been broken and these are now under the consideration of the Evaluation Commission. This is the point we are at and I really do not believe there has been any delay. On the contrary, I believe that we are moving at a much faster pace than in previous years.

I would like your assessment regarding the TAP. What does it mean for Greece? Can you please confirm that works for the construction of the Greek section will begin this summer? When is it expected to be completed?

This is a strategically important project that contributes to the affirmation of Greece as an energy hub. At the same time, is provides a positive response to questions concerning the EU's energy security. However, it is also an investment activity that sends a clear message in every direction: that in Greece, investments of mutual interest have a present and also a future. Obviously, immediate benefits will be gained associated with the thousands of jobs that the construction of the pipeline will create and contracts that will be signed with Greek companies. Finally, the TAP project strengthens our goal of increasing the use of methane in Greece and making prices even better for those who use it. We expect works to commence within a few weeks, in the spring. The same company has set itself the goal of concluding the works within three and a half years.

Has the Turkish Stream project been permanently set aside or is there still hope?

The Southern European Gas Pipeline, designed to transport Russian gas to Europe via Greece, is a response to specific energy needs that still remain. It is true that the planned route through Turkey suffers the consequences created by the status of relations between Moscow and Ankara. In any case, the project has not yet been completely abandoned. Greece is willing and ready to contribute to creating an alternative route for transporting Russian gas to Europe, as part of the community policy of diversifying routes and energy sources. I hope that Italy will also have a similar approach.

Panos Skourletis

He is the Minister of Environment and Energy by decision of the Prime Minister Mr. Alexis Tsipras on September 23th, 2015. Previously he was appointed as Minister of Labor, Social Security and Social Solidarity, Minister of Reconstruction of Production. He was the Spokesman for Syriza from October 2009 to January 2015.

UNDERSTANDING. The Greek Prime Minister Alexis Tsipras, Cypriot President Nicos Anastasiades and Israeli Prime Minister Benjamin Netanyahu on the sidelines talks for the construction of the pipeline EastMed, January 28, 2016 in Nicosia.

Greece by the numbers

Surface area: 131,957 sq km
Capital: Athens
Population: 10,775,643
Language: Greek (official)
Government: Parliamentary republic

MAIN ECONOMIC INDICATORS
GDP (purchasing power): $281.6 billion
GDP growth rate: -2.3%
Public debt: 182% of GDP
Inflation: -1.4%

OIL
Production: 1 thousand barrels/d (2014)
Consumption: 283 thousand barrels/d (2014)
Reserves: 10 million barrels (31/12/2014)

GAS (billion/mc)
Production: 0.01 (2014)
Consumption: 2.96 (2014)
Reserves: 1 (31/12/2014)

Source: Eni world oil & gas review 2015

Source: Eni

This map is without prejudice to the status of or sovereignty over any territories, to the delimitation of international frontiers and boundaries, and to the name of any territory, city or area.

Explorations & projects

For decades, Greece has promoted numerous projects to transform itself into an **energy hub** for the E.U. market. This ambition became particularly evident during the crisis, when its already low domestic consumption collapsed. From 2009 to 2014, oil alone **declined by 29 percent**, with consumption remaining at 14.2 million tons per year. The country's largest refineries turned to the foreign market: in 2015, oil derivatives led Greek exports. Within its collaboration with Cyprus, Israel and Egypt, Greece is the only country that has not defined its **Exclusive Economic Zone**. The difficulty in the Aegean is due to Ankara's declared intention to review its current status through bilateral negotiations. Athens, on the other hand, defends the status quo on the basis of the **U.N. Convention on the Sea**, which Turkey has not signed. Ankara's opposition also creates difficulty in defining the EEZ with Cyprus and Egypt. Greece should instead reach an agreement quickly with Italy based on the earlier 1977 agreement, which defined the continental platform of the two countries. Traces of significant hydrocarbon reserves have been identified in the Aegean since 1973. Three oil fields discovered in Greek territorial waters on the Island of Thassos and on the coasts of Kavala have, since 1981, produced almost **200 million barrels** and are now being phased out. Since 2014, explorations have been conducted in an adjacent area. In 2014, a tender was announced authorizing research in 10 blocks **in the Ionian Sea** and in the Northern Peloponnese, but there was little interest. The following year, there were 20 blocks, also adding the southern area of **Crete**. The first explorations began in January in the south of Ithaca.

Dimitri Deliolanes
Longtime Italian correspondent for ERT, Greek public radio and television.

European Union/The viewpoint of the world's largest economy

New fuel for cooperation

The energy potential of the eastern Mediterranean has intensified Euro-Mediterranean synergy and will increase the liquidity of the European gas market, bringing lower prices for end customers

MAROŠ ŠEFČOVIČ

Vice President of the European Commission in charge of the Energy Union, he was previously European Commissioner for Interinstitutional Relations and Administration (2010-2014) and for Education, Culture and Youth (2009-2010). He has held various institutional positions in Slovakia, including Director General for European Affairs, at the Ministry of Foreign Affairs, and Ambassador to Israel.

Efforts to promote ambitious and effective energy cooperation among the E.U. and the eastern Mediterranean countries have been deployed for several years, in different formats (e.g., the Barcelona process, the Neighborhood Policy, and the Union for the Mediterranean). Some important results have been achieved so far, in terms of policy dialogue as well as of financial support for technical assistance and investment projects. Discoveries of natural gas in the Mediterranean Sea come at the right time—when the European Union has approved the E.U. LNG and Storage Strategy and new rules for security of supply. With significant resources available in Cyprus, Egypt, Israel and Lebanon, the eastern Mediterranean might become a promising source of gas supply for the E.U. At the same time, it could create a win-win situation for the whole region and contribute to peace and stability.

In February, we put on the table a consolidated and robust security of supply package, in which we took good note of increased LNG supply coming from countries such as the United States and Australia. Significant discoveries of gas in the Mediterranean Sea might add to the new world gas map.

Up until now, Cyprus has been almost entirely dependent on imported oil products. Now, the significant gas resources found or estimated to be found in the exclusive economic zone could be a game changer.

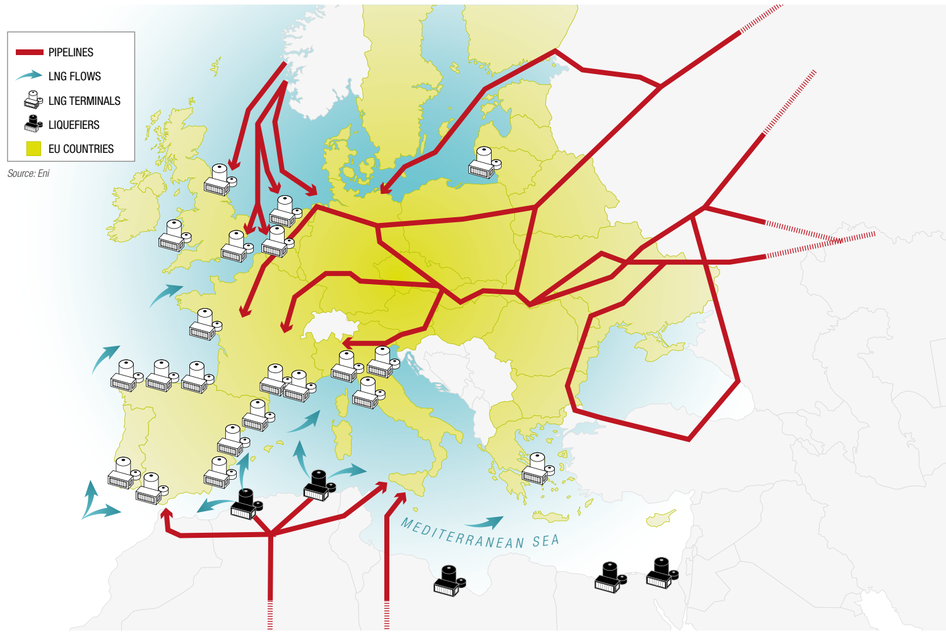
Challenges will not go away

Today's E.U. gas demand is projected to remain relatively stable in the coming years, but the expected decline in domestic gas production may increase the need to import more gas. Being the biggest economy in the world, the E.U. is also the biggest energy importer.

It is true that policies designed to achieve 2030 energy and climate targets will lead in the long run to a reduction in gas usage, particularly due to energy efficiency improvements in heating and cooling, as well as in industry. But in the short- and medium-term, gas will continue to be an important element of the energy mix, and act as a bridge to the increasing share of renewables. Moreover, for Europe, it is very important to diversify energy sources, routes and supplies.

Therefore, gas will continue to play a key role in the transition to a low-carbon economy. Substitution of coal and oil with gas in the short- and medium-term will help to reduce emissions with existing technologies.

AN ENERGY TOUR
Maroš Šefčovič (centre) and Greek Minister for Energy and Environment Panos Skourletis (right) visiting the LNG Terminal Station on Revithoussa Island, 10 March 2016. The visit of the Vice President of the European Commission in Greece falls under the Energy Union Tour.



Source: Eni

THE STREETS OF IMPORT
The map shows the network of gas pipelines supplying gas to Europe, noting, in addition, LNG flows coming from the south.

The new proposals will strengthen solidarity and transparency

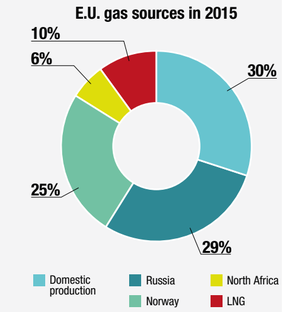
In this context and against the background of the findings of the European gas stress tests of 2014 that showed vulnerability in some parts of the E.U. and high dependency on single suppliers, the European Commission came up with the Security of Supply Package of February 2016. As the nature of the energy crises often goes beyond the borders of one country, the Commission proposed shifting from a national to a regional approach to make the E.U. even better prepared than today for possible energy supply interruptions. Regional cooperation is the best tool to overcome potentially severe gas crises. We must make sure that across Europe we do not have regions that are left behind. We have to improve how gas is sold and traded in the E.U. We need to do our utmost to make sure that everyone in Europe pays fair and competitive prices. Therefore, the February package also proposed ex-ante assessment of draft intergovernmental agreements (IGAs) between one or more member states and one or more non-E.U. countries which have an impact on the security of the EU's energy supply and the functioning of the E.U.'s internal energy market. These ex-ante compliance checks of IGAs help diminish possible doubts regarding their compatibility with E.U. law, in particular with internal energy market legislation and competition law. The Commission's involvement in such compatibility checks will provide an essential added value by resolving problems, most notably conflicts between obligations of member states under international treaties and E.U. law, and strengthening the legal certainty and viability of the agreements. Thus, such assistance from the Commission side could be beneficial not only to the negotiating position of member states, but also to their partners from other countries. Being a part of the Package, the E.U. LNG and Storage Strategy calls for actions to complete the internal gas market and complete the missing infrastructure to allow all member States to benefit from access to international LNG markets, either directly or via other member states. It also asks for close cooperation with international partners to promote free, liquid and transparent global LNG markets and to consider usage of LNG as an alternative fuel in transport, heat and power. All the aspects of the strategy are very important to the Mediterranean Sea should they orient to gas exports.

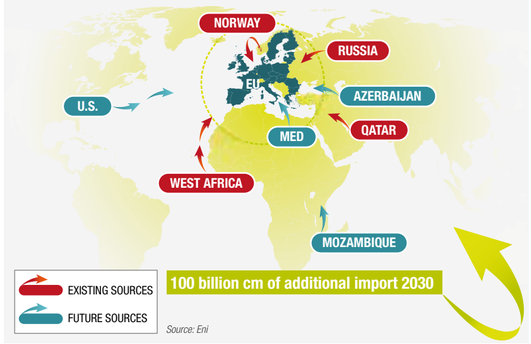
Euro-Mediterranean Platform on Gas

The Energy Union fully acknowledges the energy importance of the Mediterranean region and calls for the establishment of strategic partnerships with the Mediterranean producing and transit countries. Since last year, the Euro-Mediterranean energy cooperation got a new impetus through the establishment of three thematic platforms: 1) natural gas 2) integration of electricity markets and 3) renewable energy and energy efficiency. This new cooperation mechanism has been put forward at the high level conference on energy cooperation in the Mediterranean held in Rome in November 2014 and endorsed by the Senior Officials Meeting in March 2015. The Union for Mediterranean platform on gas was launched in June 2015 in Brussels. Its primary objective is to promote dialogue and exchange of views between public and private stakeholders, including policy makers, industrial representatives, regulators, energy stakeholders, and international financing institutions. Over time, it is expected that this role will evolve and become more active, with the platform providing advice and consultation to stakeholders with a view to identifying energy projects of common interest, partnership actions, and assisting in the development of Euro-Mediterranean energy relations. I am convinced that the impact of potential new gas discoveries in E.U. territory and in its vicinity, once they reach the E.U. markets via LNG terminals or offshore pipelines, will be largely positive, as they increase the liquidity of the European gas markets and diversification of gas sources. They would shift towards gas-on-gas pricing, shorter-term contracts, the use of spot markets and the rise of intermediaries such as portfolio players and traders. The new amounts of gas should also have a positive impact on prices for final consumers, the welfare of whom stands at the core of the Energy Union.

Today and tomorrow

Europe's gas sources, according to data of 2015, are largely domestic production and imports from Russia and Norway. In the future, it is expected that it will add the United States, Azerbaijan, Mozambique and the eastern Mediterranean, with additional estimated imports for 2030 of 100 billion cubic meters.





Source: Eni

Turkey/A reliable partner ensuring supply security

The secure path to Europe

Ankara believes it offers the most stable and secure transit route for the transport of gas from the eastern Mediterranean to the Old Continent.
Hasan Murat Mercan, Chairman of the Turkish National Committee of WEC, speaks

Hasan Murat Mercan

He is Chairman of the Turkish National Committee of the World Energy Council (WEC). Previously he held the position of Deputy Minister of Energy & Natural Resources. From 2007 until 2011, Mr Mercan was Chairman of the Committee for Foreign Affairs of the Turkish Grand National Assembly.

GIANCARLO STROCCHIA

A journalist, he was a contributor to newspapers like *La Voce* di Montanelli, *Euronews*, *Rai Format*. He worked at the Department of Public Information of the United Nations in New York and has practiced corporate and CSR communication.

Proceeding with the exploitation of the major gas fields located in the eastern Mediterranean could result in a progressive and somewhat inevitable normalization process between the countries that look out over this vast area. Faced with the possibility of enjoying the economic and employment benefits that the marketing of these resources would produce, whether received through the construction of new gas pipelines or LNG, many in the conflict will be tempted to find a resolution. Hasan Murat Mercan, President of the Turkish National Committee of the World Energy Council, is sure of this. Mercan believes that the passage through Turkey of any new connecting infrastructure is essential for assisting the flow of gas in the Mediterranean to Europe.

The discovery of large gas reserves in the eastern Mediterranean creates new opportunities for collaboration between Greece, Cyprus, Turkey and Israel. At the end of January, a trilateral meeting was held between Greece, Cyprus and Israel focusing on energy cooperation. In this context, what are Turkey's interests and what are its best moves toward making the most of the resources in the area while maintaining a climate of cooperation?

In the first place, we need to look at the global gas and oil market. On one hand, there is a worldwide decline in gas and oil prices due to the discovery of new energy resources. Therefore, we witness new games, new strategies in the energy market. And along with general rules, there is also a shift in market dynamics. Because of these changes, the eastern Mediterranean reserves are not as important now as they were two years ago, and Iranian gas is more important now than then. Meanwhile, northern Iraq has great gas potential, as LNG prices are falling. Additionally, it is also possible that the U.S. may take steps towards allowing hydrocarbon exports. Evaluating the eastern Mediterranean gas issue from this perspective, we can see that it is losing its significance. Secondly, to ensure the affordability of eastern Mediterranean gas, it needs to be produced as pipeline gas. In a nutshell, there is a difference between selling it as LNG or pipeline gas. Presented as LNG, the eastern Mediterranean gas's competitive capacity is low. Therefore, the only way to commercialize the eastern Mediterranean gas is to sell it to the markets through pipelines. And to do so you have only one route—Turkey, because it is difficult to establish a connection with an underwater pipeline with Greece or to transport it to other seas. The most efficient way to turn eastern Mediterranean gas into a commodity is to sell it by transporting it through a pipeline running through Turkey. Turkey definitely needs to be at the very center of all ongoing discussions. Otherwise, anything said will be speculative. Without Turkey, the eastern Mediterranean gas will not be commercially sufficient, feasible. There are two political conditions which determine whether the gas runs through Turkey or not. First, the Cyprus problem needs to be solved, and relations with Israel need to be normalized. Regarding both political issues, time is running out.

Beyond the role of Turkey, how do you see the potential of the eastern Mediterranean resources within the global energy arena: how much can this potential new energy hub change the balance of the energy world?

As is known to all, subterranean hydrocarbon resources might trigger conflicts. But as soon at it is extracted from the ground it will create interdependence. From this point of view, the eastern Mediterranean needs to be evaluated not by strategic games but it will secure cooperation. The fact is that due to developing technology, it is possible to extract gas and oil from many new areas in the world. As of today, the eastern Mediterranean is such an area. For sure new supplies will lead to a change in the world energy market.
First of all, it is clear that it will meet growing demand, overturning expectations of a decrease in supply. Furthermore the eastern Mediterranean is in the very center of South Europe, North Africa and the Middle East. What is more plausible than a reserve at the junction point of three continents throwing off geopolitical balances? But as I said, as soon as the reserves are put into service, it will transform into a commercial operation, with all parties working together. Let me add that I'm very optimistic that this will stabilize the area.

Turkey is a key country for ensuring Europe's energy security, as confirmed a few days ago by the European Commissioner for Climate Action and Energy, Miguel Arias Cañete. In this context, the construction of the Southern Gas Corridor has a considerable significance, yes?

Turkey is important for countries with hydrocarbon reserves and also for countries that are in need of these resources. Among the most significant aspects for pipeline transportation are the safe routes. Turkey has proved that it is a reliable partner at security supply, by backing all plans and also proposing alternative projects. Energy is a topic of key interest in EU-Turkey relations that should be negotiated as soon as possible. It is vital not only because of the Southern Gas Corridor but also because of global energy politics. It is way more important that Turkey's approach—as a reliable partner and due to the country's potential—is transferred into an energy policy rather than disjunctive pipeline projects.

The issue of environmental sustainability is increasingly urgent, both in terms of reducing pollutant emissions and increasing the use of alternative energy sources. What is Ankara doing in terms of alternative energy and what are the medium- and long-term projects?

Though Turkey's carbon emission is not a threat for envi- →

A diplomatic tangle

GIUSEPPE DIDONNA
Contributor for *Agi* news agency from Turkey

RUSSIA

Energy relations between Russia and Turkey hinge on Ankara's increased demand for oil and gas, which to date Moscow has met through the main supply routes: the West Line and Blue Stream gas pipelines. According to data provided by Botas, Turkey's state-owned energy supply company, of the 49.2 million cubic meters of gas that Turkey imported last year, at least 26.9 cubic meters, or 55 percent of the total, came from Russia. This amount seemed destined to grow by virtue of the oft-announced construction of Turkish Stream: a strategic infrastructure that in light of the vicissitudes associated with the Syrian crisis and the negative opinion expressed by the E.U., appears to have suffered a near-final setback. In Ankara, during the three weeks following the outbreak of the crisis with Moscow, Berat Albayrak took over from Ali Riza Alboyun as Minister of Energy. Representatives of both governments have had to reiterate that "with Russia there is no problem with respect to gas supplies already agreed for 2016." In fact, Turkey would previously have been ensured a constant energy supply from Russia until 2021. An additional element that could contribute to undermining relations between the two countries concerns the unilateral decision of the Russian company Gazprom as of February 24, 2016 to increase the price of gas. "All Turkish importing companies in April 2015 signed an agreement with Gazprom Export for a 10.25 percent discount on gas prices," emphasized Minister Albayrak. "The agreement was permanent, not temporary. This is why no individual party has a right to modify what has been established." Another front on which relations do not seem idyllic is that concerning nuclear power. The state-owned Russian company Rosatom, in fact, was about to be procured by the Turkish government under a contract worth over $20 billion for the construction of four 1,200 megawatt (MW) reactors, which would have been a breath of fresh air for Ankara's chronic lack of energy, but this prospect too seems to be fading.

TURKMENISTAN

At the end of 2015, Turkmenistan announced the start of the construction of the TAPI (Turkmenistan–Afghanistan–Pakistan–India) gas pipeline, a $10 billion project that will connect the country with Afghanistan, Pakistan and India, thereby reducing the dependence of the former Soviet republic from the sale of supplies to Russia and China. The announcement was made during a ceremony held near the huge Galkynysh gas field from which, once extracted, gas will travel 1,814 kilometers. It is a gas field that already guarantees gas supplies to China, which imports 35 billion cubic meters per year. "The end of construction is scheduled for December 2019," said Turkmenistan's President Kurbanguly Berdymukhamedov, "and the capacity of the gas pipeline will be 33 billion cubic meters." The consortium with which the agreement was reached in principle for the construction of the project includes Turkish companies Calik Group and Rönesans Endüstri Tesisleri. Beijing remains the largest importer of Turkmen gas, followed by Russia, which, in 2014, imported 11 billion cubic meters.

ISRAEL

After years of diplomatic "distance," Tukey and Israel have recently resumed relations, including on the energy front, following the signing, by Prime Minister Benjamin Netanyahu, of a $6-billion development plan for the Leviathan gas field. The companies owning the rights for exploiting the gas field have confirmed an agreement with respect to the supply of 1.3 billion cubic meters of gas over 18 years with Edeltech Group, one of whose main partners is Turkey's Zorlu.

QATAR AND AZERBAIJAN

During the two weeks following the crisis with Russia, Turkish President Erdogan and Prime Minister Ahmet Davutoglu went on an official visit to Doha and Baku, respectively. In Baku, the Prime Minister discussed the supplies of the TANAP (Trans Anatolian Pipeline) gas pipeline project, which should become operational in 2018, which could both increase annual gas imports from Azerbaijan by 6 million cubic meters and also double the volume of cubic meters of gas imported from Iran, ensuring Ankara a flow of 20 million cubic meters per year. The good news for Turkey, confirmed by Energy Minister Albayrak, concerned the formalization of the consortium responsible for the construction of the gas pipeline formed by a total of 11 companies, mostly Turkish. In Doha, President Erdogan, following a two-hour meeting with Ameer Şeyh Tamim Bin Hamad Al Sani, announced having set the stage for a major agreement with Qatar Petrol, sealed by the signing, shortly after, of an agreement between Turkey's Botas and the Qatari company.

ronmental sustainability, the country opens the way for sustainable energy investments. Having tried hard to liberate the energy market for the last 12-13 years, Turkey has adopted the approach of supporting entrepreneurs' innovative and sustainable projects as a policy. Our wind energy power capacity is around 6000 MW. There is also an increase in support for electricity production through solar energy. While aiming to benefit from sustainable energy sources as much as possible, Turkey is also focusing on energy productivity. In an effort to secure energy productivity, endorsements for innovative approaches have been increased. In order to back Turkey, local development agencies collaborate with international organizations. Furthermore, enhancing consumer awareness is a hot topic. Right after taking office, Berat Albayrak, Minister of Energy and Natural Resources, pointed out that it is vital to increase sustainable energy investments. The Ministry's middle and long-term goals are:

1 | Increasing sustainable energy investments
2 | Supporting energy productivity investments (including technology)
3 | Expanding awareness of the environment and sustainability.

This year's edition of the World Energy Congress (WEC) will be held in Istanbul: can this be considered a sign that the Mediterranean area is increasingly becoming the center of attention for the energy world?

Istanbul's competitor for WEC 2016 was Abu Dhabi. It was the decision of the WEC members to organize the event in Istanbul. The decision was made at a time when the fall of oil prices and the political situation wasn't as drastic as it is currently. The energy sector players are going to meet on 9-13 October, at the World Energy Congress in Istanbul. Let me share some of the participants; Wang Binghua, Chair of China's state owned energy firm SPIC; Bob Dudley, BP Group Chief Executive; Dr. Johannes Teyssen, E.ON Chairman and CEO; Alexey Miller, Gazprom CEO; Rainer Seele, OMV CEO; Saltuk Duzyol, TANAP CEO; and Fatih Birol, IEA Executive Director. Additionally the CEOs of companies like Total, Tokyo Gas, DHL, Nestle, and Siemens will take part in various sessions of the Congress and bring with their presentations the agenda of the energy world to Istanbul. Representatives of politics, business, academia, and the energy sector will share through presentations of their thoughts and opinions on the future of the industry. The energy sector is undergoing substantial changes and Turkey is located at a conjunction point. Under given circumstances—the recent developments in the Middle East and from a perspective specific to energy issues in the eastern Mediterranean—Istanbul is the most convenient location for the congress.
Apparently, 2016 is going to be a year full of opportunities and threats. It goes without saying that eastern Mediterranean resources will play a significant role, but in my opinion, Turkey will be the focus of the energy world. Turkey is strengthening its position as the energy supply securer of the eastern Mediterranean and the Middle East. The energy world that is in need of sustainable and long-term policies should focus on supply security rather than the location of resources.

RENEWABLES

For Kemal Bayraktar, President of the International Solar Energy Society (ISES), "Renewable energy has the potential for the energy recovery of the entire region." Therefore, he recently relaunched the issue of renewables in Turkey, emphasizing that the country has a wind and solar power potential capable of delivering a real energy breakthrough. The president of Tureb, the Turkish Wind Energy Association, Ataseven, confirmed that the country's potential is 25-30 percent higher than the European average.

THE CONFIRM
At a press conference following a bilateral summit in Ankara on March 15, 2016, Turkish President Recep Tayyip Erdogan and Azerbaijani President Ilham Aliyev confirmed that the pipeline TANAP (Trans Anatolian Pipeline) will be operational before 2018, the date provided for its completion. This important energy infrastructure should allow the influx of natural gas from the Azerbaijani Shah Deniz field to Europe, joining the stretch from the Turkish border, through the Greek territory, is expected to reach the Italian landing in Puglia (TAP - Trans Adriatic Pipeline).

Analysis/A resource potential that remains untapped

The energy of Lebanon's dreams

The lack of a clear legal framework for foreign investors is holding back planning for the extensive exploitation of gas fields, while neighbor-rivals such as Israel move forward

A LONG WAIT. **Because of strong adversity on the political front, both domestic and foreign, Lebanon will have to wait until the middle of 2020 before closing the gap in terms of domestic gas supply and turning into a net importer of natural gas. In the picture, the Beirut seafront.**

BASSAM FATTOUH AND LAURA EL-KATIRI

Bassam Fattouh is the Director of the Oxford Institute for Energy Studies and Professor at SOAS (School of Oriental and African Studies), University of London.

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Lebanon's exclusive economic zone (EEZ) forms part of the Levant Basin, which has been estimated to hold up to 122 trillion cubic feet (3.45 trillion cubic meters) of recoverable natural gas, in addition to some 1.7 billion barrels of recoverable oil. Lebanon's seabed could contain significant hydrocarbon potential, with an initial estimate of up to 30 trillion cubic feet (tcf) of natural gas (around 850 billion cubic meters) and 660 million barrels of oil. Jibran Basil, then acting minister of energy, raised these estimates to 95.5 tcf of natural gas and up to 865 million barrels of oil in October 2013, although no exploratory drilling had been conducted. Meanwhile, Spectrum, a Norwegian company that carried out Lebanon's first 3D seismic survey in August 2012, has estimated the country's recoverable offshore gas reserves at 25.4 tcf. Clearly these different estimates reflect a high degree of uncertainty. The development of its hydrocarbon reserves would enable Lebanon to reduce its dependence on imports of oil products, which constitute more than 97 percent of its total primary energy supplies. The government is keen to diversify Lebanon's energy mix away from oil to strengthen its security of supply, reduce its bill for imports, and to reduce air pollution. But gas production is not likely to begin before the mid- 2020s. Until then, Lebanon would need to import all its gas requirements in order to increase the share of natural gas in the energy mix. Currently, the share of natural gas in the fuel mix of the power sector has fallen to zero.

The strategy of small steps

The discovery of gas deposits offshore Gaza, Israel, and Cyprus over the past decade prompted Lebanon to conduct comprehensive 2D and 3D seismic surveys of its own EEZ. Israel's discovery of the 9 tcf Tamar field in 2009, followed by the 19 tcf Leviathan field in 2010, as well as several smaller fields, and Cyprus' discovery of Aphrodite in 2011, probably containing up to 4-5 tcf, prompted Lebanon to accelerate exploration. Lebanon adopted the Offshore Petroleum Resources Law in August 2010 (Law 132), which provides the legal and institutional framework for the exploration and exploitation of offshore oil and gas resources in Lebanon. This was followed in April 2012 by Decree 7968/2012, establishing the Lebanese Petroleum Administration (LPA) as the body responsible for the management, monitoring, and supervision of petroleum activities, including the issuing of licenses and the implementation of agreements. →

A large untapped potential

The area of the Levant Basin offshore Lebanon remains unexplored. Attempts made in the onshore sector between 1947 and 1967 (**7 wells drilled**) have not been successful. Lebanon does not have proven reserves.
The government estimates the potential of its territorial waters at 700 million barrels of oil and 25 tcf (708 bcm) of gas.
The government has taken a series of steps in anticipation of launching the first bid round:

- commissioned seismic surveys outlining 10 blocks (covering the country's entire offshore section);
- approved, **in 2010, a new oil law** that provides for the following: a contractual PSC regime; participation of NOC Lebanese Oil Company in upstream activities, with the exception of the first bid round; obligation of operators to participate in the round through joint ventures (minimum of 3 companies);
- appointed **Lebanese Petroleum Administration (LPA) in 2012**;

The **first offshore Licensing Round was announced in 2013**, covering all 10 blocks, subsequently reduced to 5 (1, 4, 5, 6, 9)

- The **pre-qualification process has shown great interest**: 52 applications and 46 pre-qualifications, with 12 as operators (including Anadarko, Chevron, Eni, Exxon, Shell, Statoil, Total and Repsol)
- **The round was expected to start in May 2013 but has been repeatedly postponed due to two decrees** necessary for the uniformity of assignments still awaiting parliamentary ratification. The decrees concern the PSC contract and delineation of blocks located in waters disputed with its neighbors (specifically blocks 8 and 9, bordering with Israel and considered high-potential).
- In August 2014, during the fifth extension of the bid round, Minister of Energy Nazarian, rather than establishing a new deadline, **announced that the round would be closed within 6 months of the ratification of the two decrees**. Therefore, **the start of exploration activities is not expected before 2017.**

The LPA, however, is not an autonomous body and falls under the control of the Ministry of Energy and Water Resources and, indirectly, is reliant on the Council of Ministers for key decisions regarding the hydrocarbon sector. Thus the LPA has been unable to perform its tasks without interference and is affected by the country's political deadlock. After months of political infighting between the various factions, the government eventually appointed the six members of the LPA in December 2012. They were chosen along sectarian lines. In February 2013, the government issued Decree 10289/2013, setting out the Petroleum Activities Regulations for Lebanon, which provide the basic guidelines for Lebanon's hydrocarbon sector. The decree stipulates requirements for license applications and the scope of agreements with energy companies. The appointment of the members of the LPA and the passing of these decrees paved the way for the launch of a prequalification round at the beginning of 2013. The response to the government's call for expressions of interest demonstrated the commercial attractiveness of Lebanon's potential offshore energy resources for international investors. Some 50 international companies registered interest, including several major oil companies (IOCs), such as Total, Eni, Shell, Statoil, Chevron, and ExxonMobil. Forty-six companies were qualified, including 12 operators.

The headwind has not yet subsided

The outlook for Lebanon, however, is highly uncertain. Delayed decision-making and inadequate administrative capacity cast doubt on the goal of starting production by the middle of the next decade. The prolonged failure of the Lebanese parliament to elect a new president and the formation in February 2014 of an unstable government made up of rival political groups has paralyzed the decision-making process. As of the date of writing, the Lebanese government has failed to pass two decrees that are essential for tendering Lebanon's offshore acreage. One of the missing decrees would delimit Lebanon's territorial sea and exclusive economic zone, an awkward matter as some blocks straddle a disputed area between Lebanon and Israel. The other decree would stipulate the provisions of future Exploration and Production Agreements (EPA). The EPA determines the way in which future revenues are to be shared between the state and the investors that provide capital, technology, and expertise. The failure to pass these two decrees illustrates Lebanon's complex domestic political landscape, which affects the decision-making process, the quality of institutions, the efficiency of public administration, and the business environment, and the difficulty of delimiting Lebanon's EEZ, in light of the dispute with Israel, which could escalate if either country decided to award blocks in the disputed area.

The complexity of the national administrative framework

Lebanon's political scene is dominated by continuous conflict over the distribution of political power and economic resources among sectarian groups. This often paralyzes most parts of the political system, including the legislative body, resulting in long delays in decision-making. The Lebanese Parliament may delay voting on key issues for years until consensus is reached. Similar delays occur within the Council of Ministers, the executive body responsible, inter alia, for adopting and implementing decrees related to the energy sector. Lebanon's first bidding round was delayed as no stable political coalition could be formed in 2012-13. A new government took office early in 2014, but has so far failed to approve the decrees indispensable to launching the first bidding round. The sectarian political system permeates all institutional structures and administrative bodies, which are populated by politically appointed bureaucrats, eroding public trust in the state's institutions and limiting their effectiveness. As a result, Lebanon suffers from a poor institutional framework, a weak business environment, administrative inefficiencies, lack of accountability, and political deadlock, even where vital interests, such as exploration for oil and gas resources, are at stake. This political structure also encourages corruption and rent-seeking behavior. Transparency International's Corruption Perceptions Index indicates the widespread nature of corruption among Lebanese government institutions, public and private sector enterprises, and society at large, with a continuous deterioration in recent years. The weak institutional and administrative framework also results in a wide gap between declared government plans and actual delivery. The parliament and government have been slow to adopt and implement legislation to kick-start the sector but Lebanese politicians have created exaggerated expectations over the future of oil and gas in Lebanon. Billboards sponsored by the Ministry of Energy and Water have been erected along highways promising better transportation networks, a better healthcare system, more jobs, and even a better-equipped army, all to be funded by hydrocarbon wealth.

The weight of the cross-border issue

The overlapping Lebanese and Israeli maritime claims over some 854 square kilometers are another potential constraint on exploration and production, and carry the risk of escalation. If exploration were to go ahead in this disputed area, and especially if significant resources were discovered, incidents at sea and further escalation could occur. There are precedents for trans-boundary natural resource sharing initiatives concerning oil and natural gas. However, such options do not apply to states that do not recognize each other's borders and are technically at war. Lebanon still does not recognize the state of Israel. There have been informal efforts by the United States to prevent the delimitation dispute from becoming an additional source of tension between the two countries. U.S. diplomatic efforts have centered on discouraging Israel and Lebanon from exploring the disputed area until a solution is reached. So far, both countries have avoided exploring or awarding contracts in the disputed area, reflecting their desire to avoid escalation. However political developments could reignite the dispute at any time.

Imports come first

Given these strong headwinds, the development of Lebanon's gas reserves is many years away, leaving a domestic gas supply gap that may turn Lebanon into a net importer of natural gas well into the mid 2020s.
The Lebanese government has very ambitious plans to increase the share of gas in the power generation mix. A 2010 policy paper for the electricity sector prepared by the Ministry of Energy and Waters proposes a diversified fuel supply, with an ambitious plan to increase the share of natural gas from its current level of zero to two-thirds of the fuel mix by 2030. This, however, requires major investment, not only in the construction of new gas-fired plants, but also in changing the configuration of existing power plants and the construction of new pipelines. Also, since gas demand is strongly linked to electricity demand, it is essential that the government embark on the reform of the power sector and of electricity prices. Électricité Du Liban (EdL), the public monopoly, suffers from large financial and operating losses, which constitute between 20 percent and 25 percent of the government's primary expenditure. EdL also suffers from chronic underinvestment, which has prevented it from modernizing its grid and expanding power generation capacity.
The main historical barrier to raising the share of gas in Lebanon's energy mix has been access to gas supplies. Natural gas entered the energy mix for the first time in 2009 when the Arab Gas Pipeline (AGP), which also supplies Jordan, started supplying some 200 million cubic metres (mcm) of Egyptian gas to the Beddawi power plant in the north of the country. The entry of natural gas, however, was very brief. Since 2009, the flow of Egyptian gas has been subject to frequent disruptions due to delays in payments and more recently due to a series of explosions targeting the AGP. The last delivery of Egyptian gas to Lebanon was made in November 2010, while Jordan has since been subject to frequent delivery cuts, reductions in contract volumes, and parallel price rises. Egypt's growing domestic demand for natural gas has since cast severe doubt over its capability, or indeed willingness, to continue supplying regional partners with low-cost pipeline gas over the short and medium term. Other neighbouring countries seem increasingly short of gas themselves. In 2003, the government of Lebanon signed a 25-year contract with Syria to import about 1.5 bcm/y of natural gas (World Bank, 2004). The Gasyle pipeline, a 32 km pipeline with capacity for 3 mcm/day connecting the Syrian border to the Beddawi power plant, was completed in 2005. However, Syria has not been able to supply Lebanon with gas, as its production has not been sufficient to meet domestic consumption, and the country's gradual disintegration into persistent civil conflict at the time of writing casts substantial doubt over Syria's ability to significantly change its natural gas supply picture within the next decade. Lebanon's lowest-cost option in commercial terms is to secure pipeline gas from Israel. Despite the theoretical availability of next-door gas reserves already earmarked for regional supply, this option is not politically feasible, as there are no direct trade ties or diplomatic relations between Lebanon and Israel. A pipeline project carrying up to 25 bcm of Iranian gas to neighbouring Iraq and Syria (the 'Islamic pipeline') could also have turned into a lifeline for Lebanon's gas industry. However, since its announced construction launch in November 2012, the project has suffered from a series of funding issues and from practical above-ground problems related to the continuing complicated security situation in Iraq and, since 2011, the deteriorating political and security situation in Syria. Given the current lack of regionally available pipeline gas supply options, importing liquefied natural gas (LNG) is the most realistic and practical option. The government has announced plans to import LNG to replace fuel oil in power generation, although at present the country has no regasification terminal and no contract to build and operate one has been signed.

Working towards exports

Assuming that Lebanon does eventually develop its natural gas reserves and meets its domestic demand, the country faces an array of choices as to how to monetize its hydrocarbon riches via gas exports. Lebanon's eventual export strategies will to a large extent depend on the eventual size of its reserves, its production targets, and the cost of Lebanese gas production, which will impact the price range that Lebanon needs to secure as well as external factors such as gas price levels in potential export markets. So it will depend on timing. Lebanon's already much-delayed offshore bidding round and tendering process, and the time gap between initial exploration, appraisal drilling, production, and eventual export imply that current predictions of Lebanese gas exports being merely some four years away are indeed highly unrealistic. The Lebanese government's more recent discussion of an eight-year time frame, with exports starting during the early 2020s, seems slightly more realistic, but may be delayed by further political stalemate. By that time, Lebanon will likely find itself in a fundamentally different market than it is today. Traditionally the first option considered for exporting natural gas has been via regional pipeline exports to neighboring countries in the vicinity of natural gas producers. Lebanon is not short of gas-hungry neighbors. Particularly favorable in terms of low initial infrastructure costs could be the markets of southern neighbors Jordan and Egypt, both of which are already connected via the Arab Gas Pipeline to Lebanon. However, the option holds costs and complications. In addition to the fact that the route is long and subject to disruptions, the potential of regional exports to Egypt and Jordan is so attractive that Israel has been seriously considering the option–a development which, if it materializes, may yet prove to render all talk about Lebanese gas exports to these countries redundant, as Israel will have captured these markets by the time Lebanon may be in a position to export. Also both Egypt and Jordan have advanced plans to increase imports of LNG. Eni's supergiant gas discovery at its Zohr Prospect in Egypt is also expected to reduce the country's supply-demand gap once the field is developed.
The Turkish option with its European link may also prove highly attractive but also comes with its own complications. European and Turkish gas demand constitutes a big source of uncertainty given the range of other supplies (both pipeline and LNG options) that will appear on the horizon during the early 2020s. Pricing mechanisms, including Europe's accelerated moves towards gas-to-gas pricing, may turn out to offer small gas exporters more variable, and possibly, lower returns, an issue particularly acute for Lebanon whose offshore gas reserves may yet prove to have a higher cost than those of alternative European gas providers such as Russia. Lebanon could consider its own LNG export strategy which remains the most flexible option to export its natural gas, allowing access to extra-regional markets such as Europe and current premium-markets in East Asia. The LNG export option however remains subject to many uncertainties. One of the key uncertainties is the actual size of Lebanon's gas reserves. LNG will require sufficient reserves, sufficient production, and sufficient production allocations of Lebanese natural gas to export markets, under long-term contracts that will lock Lebanese gas for about 15 to 20 years into exports. The timing of such an option will also be critical. By the time Lebanese LNG might be ready to be exported, Lebanon will be competing with a number of new market entrants, many of them with considerably more market weight over key markets in Asia/Pacific and Europe, primarily Australia, East Africa, and North America. Lebanon may consider other options for exporting LNG – not from its own coastal liquefaction facility, but by making use of existing, or likely upcoming, regional export hubs. An option worth considering is the export of LNG via shared facilities with Cyprus, Lebanon's regional East Mediterranean gas neighbor. Sharing LNG export facilities with Cyprus could offer significant cost savings if technical, commercial, and political obstacles could be overcome. Lebanon faces both external and internal challenges in realizing the commercial advantages of the various export options. But for now, the key challenge lies within Lebanon itself; primarily in Lebanon's ability to provide a domestic contracting framework to foreign investors, competitive and stable enough to allow for the development of gas resources; and, on the other hand, the stabilization of the domestic political situation and Lebanon's gas contracting frameworks that render Lebanon a desirable, reliable, and stable gas exporter to potential regional and international clients.

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Gas/The competition to supply European

Who will make the next move?

Moscow, Ankara and Athens are involved in an important game for the future of gas flows to the Old Continent. The hope should be for partial diversification—rather than total replacement—of the Russian supply

DEMOSTENES FLOROS

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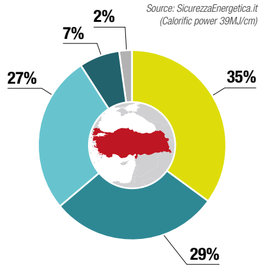
The very strong tensions between Turkey and the Russian Federation regarding the Syrian conflict and the future of the Middle East have led to the freezing of the construction of Turkish Stream, the Gazprom-designed gas pipeline under the Black Sea, with a landing place in Turkey, on the border with Greece, to transport natural gas to central-southern Europe and the Balkans.

On December 2, 2015, as a result of the shooting down of a Russian military jet by Turkey, Russia, in the words of Energy Minister Alexander Novak, "suspended negotiations with regard to Turkish Stream," and stopped the construction of the $22-billion nuclear power plant of Akkuyu in Mersin (Turkey) contracted to Rosatom. After this, Russia accelerated the Nord Stream II project, its effort to double the transport capacity of the Nord Stream I pipeline.

Previously, on December 1, 2014, Vladimir Putin had officially terminated the construction of the South Stream gas pipeline due, firstly, to the effects of U.S. pressure on Bulgaria—resulting in the withdrawal of the construction permit—and obstacles imposed by the European Commission—a "non-constructive approach," in the words of the Russian President—regarding the use of the pipeline. In this political context, how can the scenario evolve with regard to energy infrastructure (pipelines) aimed at supplying Russian natural gas to the northeastern Mediterranean? What effects can a changed geopolitical energy context have on Turkey and Greece?

TURKEY'S ENERGY MIX

Source: SicurezzaEnergetica.it (Calorific power 39MJ/cm)



NATURAL GAS SUPPLIERS

2014 total consumption = 52.4 Gmc³

Russian Feder. 55% (28.8 Gmc³)
Estim. 2015: 27.01 Gmc³

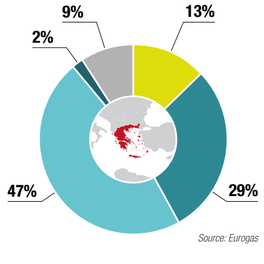
Iran 18% (9.6 Gmc³)
Azerbaijan 11% (5.7 Gmc³)
Other coun.* 15% (7.8 Gmc³)
Turkey 1% (0.5 Gmc³)

(*) LNG from Algeria, Nigeria, Qatar, Norway and Egypt. Approximately 50% of the total regasification capacity.

A country in search of new supplies

Turkey is the fourth largest European natural gas market, and the only one that has been growing steadily, even during the five-year period 2010/14, the years of the economic crisis, resulting in stagnation of the European demand for "blue gold." In 2014, Ankara consumed 48.6 Gmc³ of natural gas—up 6.5 percent from 2013. The construction of the Black Sea pipeline—thanks to the laying of underwater pipes on the seabed by Italy's Saipem—would make the country a kind of energy hub for South East Europe, despite the heirs of the Ottoman Empire being completely deprived of domestic natural gas production. In the face of an E.U. demand growing by 7 percent, from 412 Gmc³ in 2014 to 441 Gmc³ in 2015, has Turkey correctly assessed all energy and political consequences related to the loss of such opportunity? Moreover, can Ankara actually rely more on other suppliers such as Azerbaijan, post-sanctions Iran or LNG from Qatar? In 2014, Turkey consumed 125.3 million tons of oil equivalent (Mtoe).

GREECE'S ENERGY MIX



Source: Eurogas

NATURAL GAS SUPPLIERS

2014 total consumption = 2.93 Gmc³

Russian Feder. 58% (1.69 Gmc³)
Estim. 2015: 1.98 Gmc³

Norway 26% (0.77 Gmc³)
Algeria 16% (0.47 Gmc³)

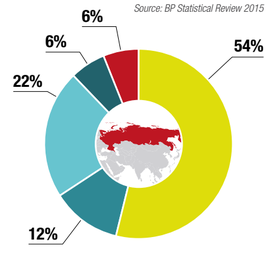
Ankara's position between Moscow and Tehran

The Oxford Institute for Energy Studies has emphasized that Turkey will increase its gas demand by approximately 22 Gmc³ between 2014 and 2023, reaching a total consumption of between 67-70 Gmc³. Botas, the Turkish state gas company, provides an even more dramatic scenario, according to which, between 2012 and 2030, Turkey's consumption of blue gold will increase by 45 Gmc³ (it was 15 Gmc³ in 2000) to 81 Gmc³. Iran cannot replace Russian gas supplies to the European Union and Turkey for the following reasons:

1 | It has a growing domestic demand to be met. 13 percent of Iranian families live in rural areas that are still disconnected from the national gas supply system;
2 | It must modernize its energy infrastructure. To do so, Iran must import new technologies to improve the extraction and distribution of natural gas;
3 | It is estimated that Tehran needs approximately $100 billion of investments in the gas industry to reach its goals;
4 | Iran's legitimate export ambitions will most likely soon target the markets of Pakistan and India, more lucrative prospects than Europe. This could lead to a confrontation with Qatar regarding the exploitation of the huge neighboring gas field of South Pars and the subsequent export of LNG;
5 | Geopolitical instability in the Middle East continues. The supply infrastructure in Eastern Turkey—entering from Iran (Eastern Ana- →

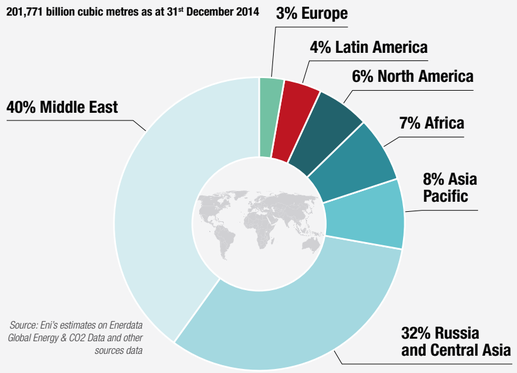
RUSSIA'S ENERGY MIX

Source: BP Statistical Review 2015



Russia's energy mix is heavily weighted toward gas. The realization of the Nord Stream gas pipeline's transportation capacity would allow Russia to almost entirely abandon Ukrainian transit to Europe.

WORLD NATURAL GAS RESERVES



The Middle East's natural gas reserves dwarf those of all regions except for Russia and Central Asia. This figure does not account for the productive potential of the Levant Basin.

tolia) and Azerbaijan (BTE)—is very vulnerable, as demonstrated by the attacks of recent months. Shortly after the start of the war in Syria, both gas pipelines had already been blown up.

Azerbaijan's recent problems with regard to natural gas production and the simultaneous need to comply with existing export agreements have led the country to be supplied by the Russian Federation. This situation raises a number of questions in relation to the actual production capacity of the Shah Deniz II gas field. In fact, the Azerbaijani gas field should supply the Southern Corridor, hence the Trans-Adriatic (TAP) gas pipeline, which will arrive in Puglia, in southern Italy. As regards the possibility of covering the additional demand through LNG, currently only an additional 6.9 Gmc³ would be importable, and at higher prices than Russian gas. In light of the data provided, the intimidations of Recep Tayyip Erdogan appear to lack credibility. "I have already said that, apart from Russia, we buy gas from many countries. With the help of the Most High, we will overcome the problem" exclaimed the Turkish President on December 2, 2015, immediately after learning of the freezing of the Turkish Stream pipeline by Russia. In fact, Turkey, in addition to its need to meet the growing demand for blue gold at favorable prices, could lose the chance to become the energy hub of southern Europe.

An unexpected key role for Athens

In 2014, Greece consumed 23.4 Mtoe, down 0.6 percent from the previous year due to the continuing economic recession.

Greece, which is not a natural gas producer, could, in the event that the Turkish Stream project is reinstated, assume a role approaching energy hub by virtue of the conjunction of three favorable geopolitical factors:

1 | He Russian Federation's desire to bypass Ukrainian territory, and its intention not to renew the transit agreement with Kiev in 2019;

2 | The construction of the *Southern Corridor* strongly desired by the EU;

3 | Turkey's interest to become a strategic energy hub from east to west, for Russian and Azerbaijani resources.

The potential Russian-Greek cooperation in the field of energy could theoretically follow the footsteps of that of Russia and Germany—Nord Stream. In this case, the most delicate phase of the project would concern the development of the pipeline in Greek territory, which is governed by E.U. law (Third Energy Package). It is likely for this reason that the Russian government, following the agreements reached between Moscow and Athens in the spring of 2015 and confirmed following the reappointment of the Syriza-ANEL government in September 2015, was explicit in clarifying that Gazprom will have no involvement in the Greek stretch of Turkish Stream, 50 percent of which will be owned by Vneshekonombank (Veb), the state bank dedicated to development.

As a result of the bilateral agreement of October 21, 2015 between Victoria Nurland, Assistant Secretary of State for European and Eurasian Affairs at the U.S. Department of State, and Alexis Tsipras, Prime Minister of Greece, the government of Athens is considering the possibility of constructing an LNG terminal near Alexandroupolis (Thrace). This would supply liquefied shale gas imported from the U.S. company Cheniere, despite the higher cost of the raw material compared with Russia's price. If this were to happen, it would reflect a change of strategy by Athens, moving away from a privileged energy axis with Moscow in the direction of Washington in the wake of what was attempted–but substantially failed–by Poland and Lithuania.

Moreover, Depa, the Greek gas supply company, would purchase LNG from a U.S. operator that has declared $297.8 million in debt in just the third quarter of 2015, an increase compared with the $89.6 million in the same period of 2014.

One cannot exclude that this forms part of the price that Greece will have to pay for the help received from the U.S. during the warm phase of acceptance on the night of July 12/13, 2015 of the third bailout as shown by certain diplomatic documents, when German Minister of Finance Wolfgang Schaeuble wanted the country out of the Euro for five years.

Europe's destiny passes through the new gas pipelines

According to estimates provided by the consensus forecast, in 2025 and 2035, Europe will consume 15 percent (587 Gmc³) and 21 percent (621 Gmc³), respectively, more natural gas than the 513 Gmc³ of 2015, which was up 5.6 percent compared with the 486 Gmc³ in 2014 (+27.4 Gmc³). Due to the simultaneous decrease in internal production and increase in consumption, Europe will need, in 2025 and 2035, an additional 110 Gmc³ and 160 Gmc³ of gas, respectively.

In the background is the announcement of the doubling of the gas pipeline's transport capacity under the Baltic— Nord Stream I—made during the Forum in St. Petersburg on June 18, 2015. This would make Germany Europe's main energy hub, a situation that would never have occurred if the South Stream project had been completed, which would certainly have been more responsive to the interests of Italy.

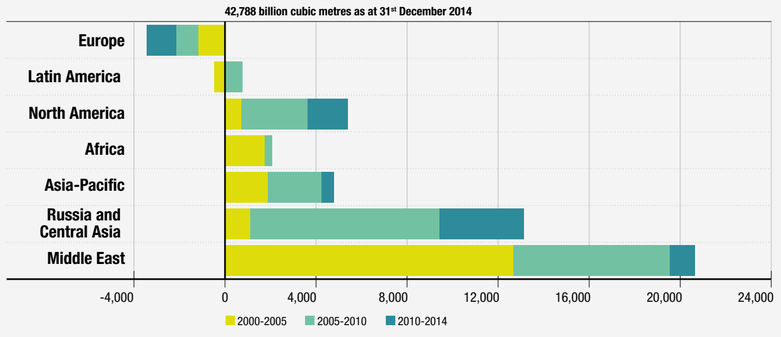
In this case, the Russian Federation—whose exports to Europe increased by 8 percent in 2015 (11.8 Gmc³) and an additional 7.5 Gmc³ in just the first two months of 2016—would bring to fruition its strategy of almost full abandonment of Ukrainian transit without depriving themselves of the possibility of a future reinstatement of the Turkish Stream project, given what was stated by Russian Energy Minister Alexander Novak on January 16, 2016, then reiterated by the Russian ambassador to Ankara, Andrei Karlov, on February 9, 2016. In fact, it would be an infrastructure no longer composed of four, but of two lines, for a transport capacity of 36 Gmc³, although not complementary and not necessarily alternative to Nord Stream II, whose extension to the Balkans—the Tesla project—entered the UE's list of energy infrastructure priorities (as did its competitor Eastring) despite attempts of destabilization of the government of Skopje, which had shown itself favorable to the extension of the pipeline through its territory.

The months to come will reveal whether a new Trojan horse will be constructed on the Greek-Turkish border, in the form of a hub.

Whether it involves the difficulties with North African and Middle Eastern supplies due to political instability or winter peaks, the impression is that Russia remains the hub of European supply, as well as that of the northeastern Mediterranean, particularly if the "next move" involves the resurrection of ITGI Poseidon, following the February 2016 signing of the Memorandum of Understanding between Gazprom (Russia), DEPA (Greece) and Edison (France). In fact, this pipeline, besides already possessing the permits required by the Third Energy Package and intergovernmental agreements (Turkey-Greece-Italy), is expected to ensure the Russian Federation's ability to bypass Ukraine with Nord Stream I and II, and would allow Greece to become the southern hub for the entry of Russian gas into the E.U., in addition to becoming a partner in the project together with France. At the same time, Italy would become the landing point for the gas pipeline (Otranto, in Puglia) and would have the opportunity to diversify the Russian gas supply route, which currently moves entirely through Kiev and covers the needs of almost 50 percent of Italian consumers. Moreover, Italy would avoid purchasing raw material at a higher price than that calculated for the possible Nord Stream II-Germany route, and we would at least partially make up for the disappointment of South Stream. In this case, the Sultan will be forced to take account of its national energy needs, the interests of Sofia in offering an onshore alternation to Ankara, and also the pressures of constructing the Russia-Italy gas pipeline that will inevitably come from Athens, Rome and Paris, while Moscow can easily afford to wait.

Regardless of which project triumphs, the hope is that the resources of the southeastern Mediterranean will be able to contribute to a partial diversification—rather than an actual replacement—of the Russian supplier. This is thanks to the final confirmation of the estimates relating to the Egyptian Zohr gas field discovered by Eni, the increase in reserves in Israel's Leviathan gas field, as well as those of Damar and Talit, and the future energy role that can definitely be played by the Republic of Cyprus.

WORLD NATURAL GAS RESERVES GROWTH (2000-2014)



THE ROLE OF INFRASTRUCTURE

The future of energy supply depends in part on the evolving situation regarding pipelines aimed at supplying Russian natural gas to the northeastern Mediterranean. In the picture, a worker checks the valve gears at a natural gas control center at Turkey's Petroleum and Pipeline Corporation, 35 km west of Ankara.

France/The environment and the fight against Daesh

Nuclear vs. LNG: A continuing dispute

Low gas prices have overturned much of the world's energy status quo. In France, the debate has heated up, and only one thing is certain: European cohesion, and the E.U., will continue to be crucial

JEAN-MARIE COLOMBANI

A journalist and essayist, he was director of the French daily *Le Monde* from 1994 to 2007. He founded JMC Média and was the creator and chairman of the information website www.slate.fr. He has written for the magazines *Challenges* and *L'Express* and taken part in the program "La rumeur du monde," broadcast on France Culture. He has also written editorials for a number of foreign newspapers.

As almost always happens at the beginning of each new century, we are experiencing a historic moment characterized by profound strategic (the global epicenter shifting to Asia-Pacific), economic (the appearance of developing countries on the international scene), political (jihadist terrorism that goes on to threaten Libya, China's militaristic temptation, populism in the United States, the breaking up of the Middle East) and environmental changes (global warming). All previous alliances are called into question and new balances of power are being created which, in the years to come, will affect our way of life and our wellbeing (or unease). Every passing day, in this context, should convince us that we will continue to exist only on one condition: we must advance the European Union. Our defense capabilities, our security in the broadest sense of the term, the protection of our strategic interests, all will depend on Europe's level of cohesion.

Prices and how the balance of power has changed

While we wait for unity to be consolidated, the landscape is changing: the current decline in oil prices has essentially brought us back to prices prior to the first oil crisis in 1973! In the immediate future, the decline benefits importing countries such as mine [Italy]. However, if it continues, it will severely affect our exports to producing countries.

In the immediate future, even balances of power have shifted. Limiting ourselves to the most obvious cases, Russia (where hydrocarbons account for 70 percent of exports) finds itself significantly weakened economically; Saudi Arabia, at the peak of its political and religious dispute with Iran, is beginning to suffer setbacks, and some believe that its model is under threat. Tehran, however, has been strengthened by the agreement on the nuclear issue, which gives it back its exchange trading power with the United States and Europe, allowing the country to regain an important role on the oil and gas market.

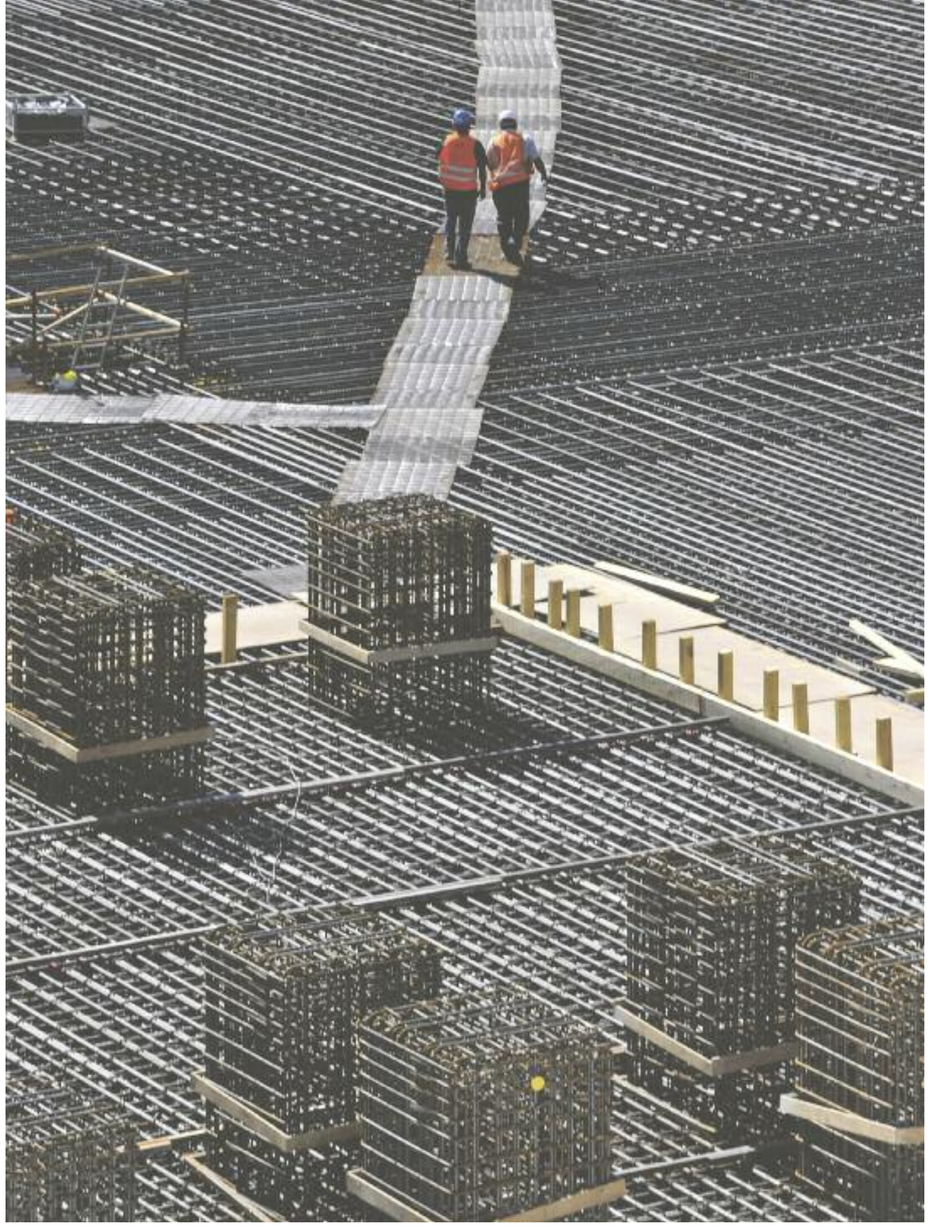
The French position

From France's perspective, the oil and gas issue is linked to the fight against terrorism and by the absolute need to take to the battlefied against Daesh. As regards supplies, for some time, Paris has bet on the United Arab Emirates and, specifically, on Qatar, which holds the second largest gas reserves in the world, as well as on Saudi Arabia. In the region, France has always opted for the stability of national governments and, for this reason, in 2003, it refused to take part in George Bush's war in Iraq. The civil conflict in Syria, however, has led to its taking sides with the moderate opposition against Bashar al-Assad, whom former Minister of Foreign Affairs Laurent Fabius called "the butcher" of his own people. Oil, however, takes a back seat to the primary goal of security, which cannot be separated from French participation in the anti-Daesh coalition, in the knowledge that this movement cannot be defeated without the support of Sunni forces: this is the importance of its link with Saudi Arabia.

In more general terms, France occupies the space freed by America's retreat within the region: the loosening of relations between Washington and Riyadh and between Washington and Cairo has left the field open to Paris. Saudi Arabia and Egypt are essential for those who wish to restore a semblance of stability to the region. This did not stop Paris from holding discussions with Tehran, using a simple and direct language: we are ready to give maximum impetus to our trade and to participate (via the Total Group) in relaunching oil and gas production. provided that it ends the threat against Israel, and to sign an agreement on the nuclear issue. Such clarity of language demonstrates France's positive response to Iranian President Rouhani's recent visit to Europe.

Two schools of thought

However the situation evolves on the ground, there are two schools of thought in France regarding energy issues: one holds that we have again entered a period of abundance of fossil fuels and that we must therefore continue to focus on natural gas (which meets the parameters of an ecological transition), this school also believes that renewables and, specifically, photovoltaic power will become profitable and affordable in the short term and will leverage Europe's energy independence. The second school of thought believes that renewables are heavily subsidized and that the geopolitical uncertainties in oil and gas production require loyalty to nuclear power, an energy source that France has long considered synonymous with independence and with minimal environmental risk. The government, for the time being, has not yet spoken.

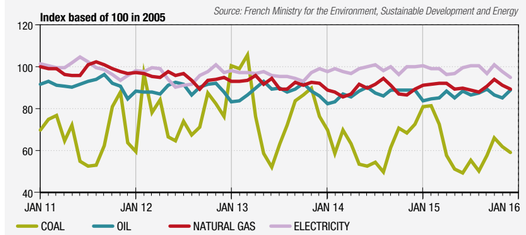


francenergy

CO_2 EMISSIONS DUE TO ENERGY PRODUCTION

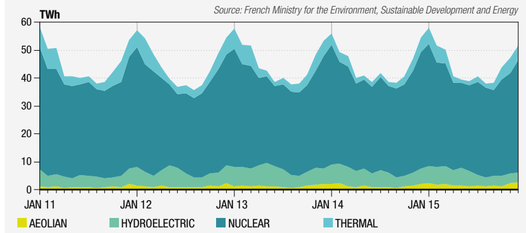
Calculating the average from January 2015 to January 2016, the amount of CO_2 produced declined at 84% compared with 2005.

CONSUMPTION OF PRIMARY ENERGY



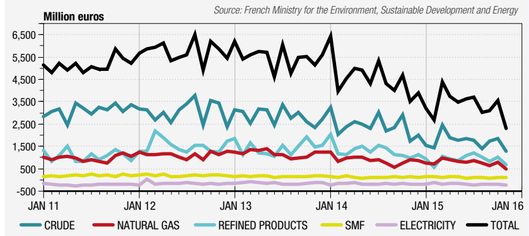
Accounting for seasonal and climate variation, in December 2015 energy consumption declined by 0.4%, whereas, with the fall in prices, consumption of oil products increased by 4%.

ELECTRICITY PRODUCTION BY INDUSTRY



In 2015, total electricity production was slightly higher than in 2014 (+0.9%), due to increased productivity from thermal, wind and nuclear power plants.

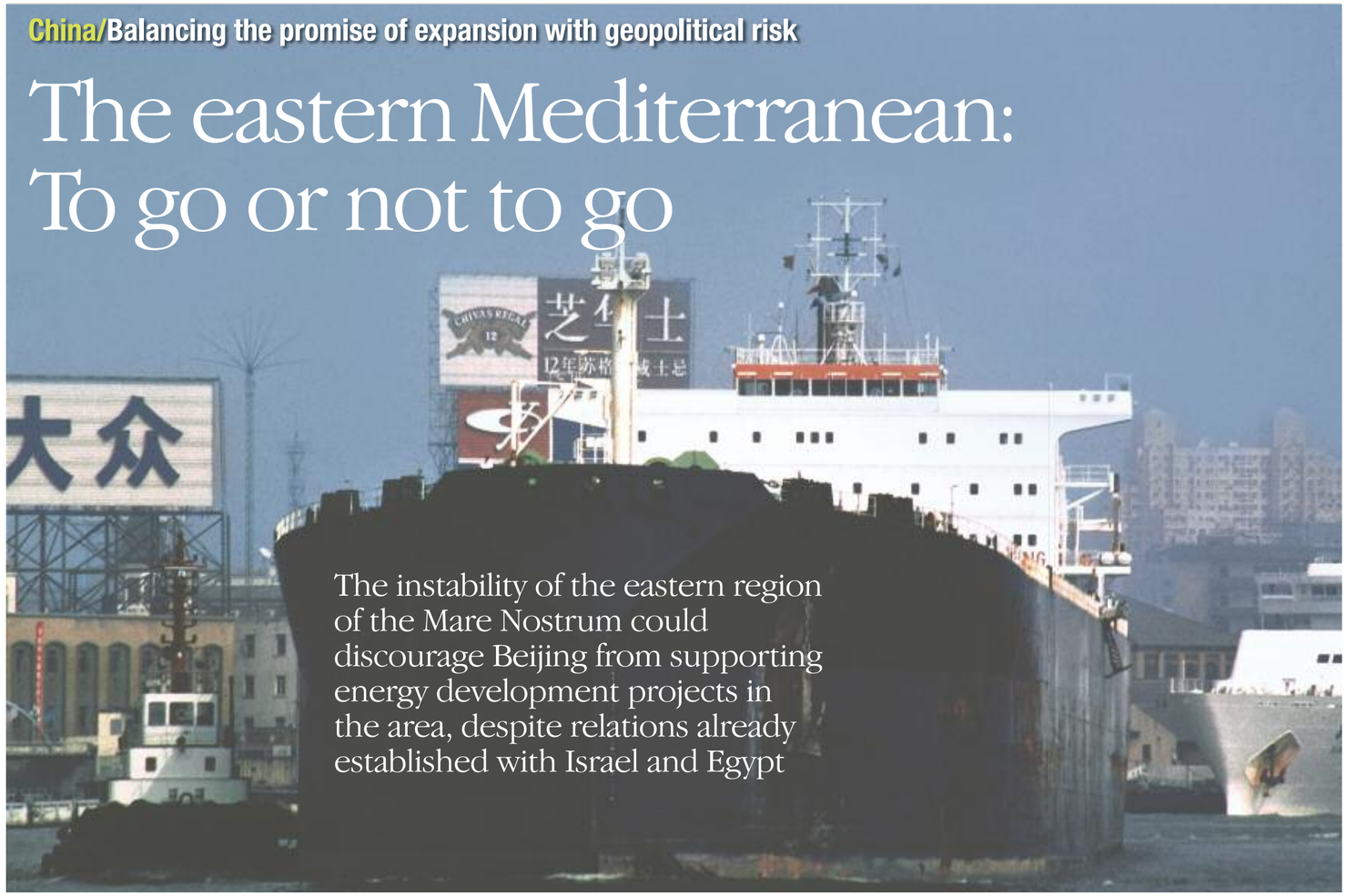
MONTHLY ENERGY COSTS



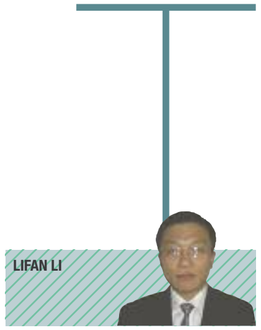
The significant fall in oil and gas prices has affected overall transalpine energy bill costs, which declined by 35% in November 2015, amounting to €2.3 billion.

China/Balancing the promise of expansion with geopolitical risk

The eastern Mediterranean: To go or not to go



The instability of the eastern region of the Mare Nostrum could discourage Beijing from supporting energy development projects in the area, despite relations already established with Israel and Egypt



LIFAN LI

He is Associate Research Professor at the Shanghai Academy of Social Sciences and Secretary General of the Center for Shanghai Cooperation Organization Studies.

he Mediterranean Sea, which enjoys an important role in transportation and strategy, is the main channel among the Europe, Asia and Africa. More than 2000 vessels sail on the Mediterranean sea every day. 85 percent of imported oil enters Western Europe through the sea. The Chinese and Russian Navies launched a small scale joint drill on the Mediterranean Sea for the first time on January 25, 2014. The next year, on May 17, a second drill was held. The two drills have promoted the existence of a Chinese military force in the Mediterranean Sea, and will provide security for the economic cooperation and maritime transportation between China and countries in the area.

Beijing's new frontier in the eastern Mediterranean

One third of maritime container transport vessels sail through the Mediterranean Sea. Some carry products made in China and Southeastern countries to Europe and the east coast of America. Morocco's government has invested €3.5 billion (about $5.5 billion) in constructing Tanger Med, the new port in the Mediterranean Sea. Other countries in the area desire the new ports as well, expecting commercial investment to arrive following the completion of the construction. The economy of the ten countries in the area (MEDA Ten) mainly depends on energy transportation and entrepôt trade, with annual per capita income of $6200 and an unemployment rate of 20 percent. The energy pipeline projects have become the key channel for Middle East and Caspian Sea countries to export oil and gas to Europe. Therefore, the development of the MEDA ten relies heavily on the European market. European people have always treated the area of Mediterranean Sea more as a threat than opportunity because of the large amounts of immigrants from the Middle East. Refugees from Syria and Turkey, among them some terrorists, enter Europe illegally. The political instability of the area also increases the impression of threat. Long years of war and conflicts have seriously hindered the development of the area, including the Syria chaos, and the conflicts between Turkey and Greece, and Israel and Palestine.

European investments stimulate growth

Large amounts of investment to the area come from the E.U. From 1995-2013, investment from Europe had reached €23.6 billion. Turkey, Israel and Egypt are the main recipients of foreign direct investment (FDI). The political and economic cooperation launched by the E.U. has aided the development of the area. At the same time, the oil and gas revenue has provided momentum for local growth. After the discovery of tremendous amounts of gas in the area, the E.U. expects to increase the energy investment in the area so as to achieve the strategy of energy import diversification. Political chaos several years ago forced the interruption of gas exports, bringing losses of hundreds of millions in U.S. Currently the Egyptian government is working hard to win back the trust of Western investors so as to release the local gas and oil to the largest extent. At the same time, countries of the eastern Mediterranean Sea are trying to form an energy alliance. On August 8, 2014, Cyprus, Greece and Israel signed an energy accord to attract more private investment, especially with regard to the electricity grid. However, the European economic crisis oil and price slump have had a negative impact on investment, travel, foreign currency transfer and energy cooperation in Mediterranean countries. The lack of economic momentum will remain for at least two more years. Influenced by terrorism and extremism, the energy cooperation between Turkey, Iraq and the Kurdish government has been hindered, with the frequent damage to the oil and gas pipe from Iraq to Turkey by militants. The fiscal squeeze of Greece may push governments in Mediterranean countries to make use of new international investment to build infrastructure and energy reserve base. Therefore, the urgent strategy of the countries in the area is to choose a better investor. China may become the main partner for the area, at least in the near future.

Cooperation with the countries of the area

Energy cooperation is of great significance to China and countries along the Mediterranean Sea coast, especially countries along the eastern coast, including Greece, Turkey, Cyprus, Syria, Lebanon, Palestine, Israel and Egypt. In 2015, the trade volume between China and the above eight countries has reached $53, 734, 487, 469, among which the largest trade partners are Turkey, Egypt, Israel and Greece. China has gone from oil importer to exporter since 1993, with the import volume growing every year. Since 1996, China has moved to net oil importer and depended heavily on overseas oil supply and transportation. With the growth of national power, the overseas merger and acquisition of Chinese companies have expanded to the energy sector. Up to the end of 2014, the overseas direct investment of Chinese oil companies has risen to $180 billion. In January 2016, China attained 82 overseas acquisitions with a total volume of $73 billion, with many in the energy sector. Following the discovery of large scale gas plays in Israel and Lebanon, the countries of the eastern Mediterranean Sea expected to transfer from energy importers to exporters. According to an estimate by the U.S. Geological Survey, the recoverable gas reserves of Levant Basin across the seabed of Israel, Cyprus and Lebanon can reach 3450 billion square meters, while the recoverable oil reserves is about 1.7 billion barrels. Currently China is taking advantage of the opportunities provided by the "One Belt, One Road" initiative to diversify its cooperation with these countries. Examples can be seen in large projects like the Sino-Egypt New Suez Canal Project, the New Capital Project, the Electricity Finance and Insurance Agreement signed by Sinasure and Egypt, and the Piraeus Port Project in Greece invested by COSCO. At the same time, China expects to operate through multifaceted systems like the Asia Infrastructure Investment Bank to facilitate overseas projects and local development.

The Dragon focuses on technological innovations

The investment and energy cooperation between China and eastern Mediterranean countries can be represented in the following characteristics.

1 | The key countries and areas are identified. The main trade partners of China are Turkey, Egypt, Israel and Greece. Trade revenue with Turkey accounts for 2/5 of the whole. The cooperation in the energy sector focuses on electricity and new energy. The four countries are expected to be the supporting countries for China's initiative of the Maritime Silk Road so as to promote the trade and connectivity between China and the area.

2 | Clean energy is the main cooperation sector. Currently, the oil and gas wells of Israel, Cyprus and Lebanon produce 2 billion barrels and 20 billion square meters respectively. The proven reserves of Syria and Egypt are 200 and 600 Gm^3 respectively. New mines are discovered continuously, making the area a new assembly point of global energy. China has strengthened cooperation with Egypt in the gas sector with the expectation of increasing its supply of overseas clean energy. In 2016, the first visit by President Xi Jinping included Egypt, where China and Egypt signed 21 documents of cooperation, many of which were concerned with clean energy.

3 | The localized joint investment is the main form for local energy cooperation. In 2010, CNOOC worked with Turkish Petroleum to explore and develop the oil and gas mines with Iraq. Merger and acquisition has become the key method to obtain new gas and oil sources, which can reduce the national capital invested by the energy companies, which are mainly state-owned.

4 | The renewable energy will be the →

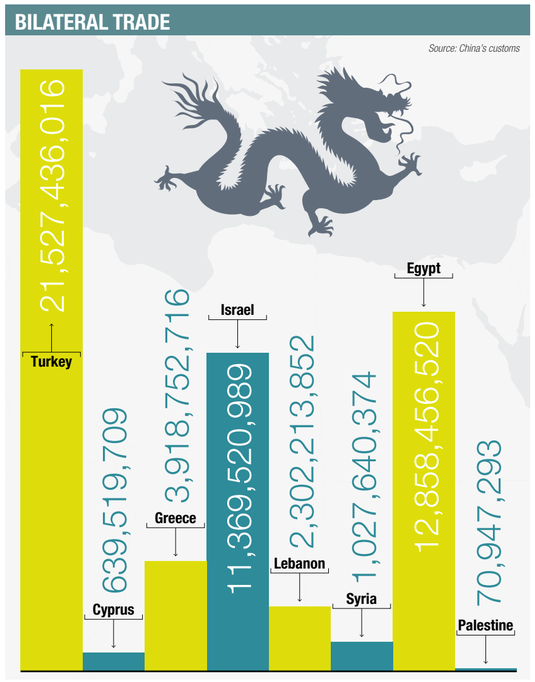
BECAUSE YES

1. One-third of container ships worldwide travel **through the Mediterranean Sea**
2. The energy-based alliance launched by Cyprus, Greece and Israel **meets China's need to increase the flow of energy resources in the country**
3. In 2016 **21 cooperation documents were signed**, many of which concern clean energy
4. With the launch of the "One Belt One Road" initiative, **Beijing has launched a plan to intensify trade and exchange relations between countries of the Eurasia region**
5. The European economic crisis and the fall in oil prices pushed countries in the Mediterranean region to identify the best investors. **China could become the largest trading partner for the entire region**
6. China considers **it important to be able to maintain a military presence in the Mediterranean**

BECAUSE NOT

1. Cooperation with the Mediterranean countries might undermine Russia's historic interests in the region. **Beijing does not intend to spoil relations with Moscow**
2. **China does not have a strategy capable of ensuring energy security in the region.** Following the crisis in the Middle East, local security has been severely put to the test
3. **Very tense relations between Cyprus and Turkey**, due to disputes regarding offshore energy reserves between the two countries, **have a negative effect on China's desire for cooperation**
4. Despite being China's main trading partner, **Turkey does not consider energy cooperation with China as its main strategy**
5. **China's economic growth rate has decreased** and this will affect its foreign investments

The histogram represents the relative volume of the bilateral trade balance between China and the eastern Mediterranean countries in 2015. Data are expressed in U.S. dollars.



focus for future investment and cooperation. Israel was the first country in the area to use solar energy, mainly because of its rich access to solar. Suntech from China is searching for innovative technology in Israel to improve the effectiveness of solar panels. Israel's atomic energy also draws attention from Chinese companies. The cooperation in this area can be further strengthened and deepened. Isreal is also the first country that uses electric automobiles on a large scale. To broaden the cooperation in the sector may provide a solution to air pollution problem in China.

Opportunities and disadvantages of an antagonistic relationship

The rising of the eastern Mediterranean market can not only satisfy its own energy demand and enhance its national security, but also can build new partnership with Europe through exporting gas to the area. Enhancing trade and energy cooperation with the area is an important step for globalization strategy of Chinese companies. However, the future is full of problems and challenges. Will the cooperation between China and eastern Mediterranean countries pose challenges to traditional interests of Russia and EU? The answer is yes. Russia has a long histry of existence in local energy interests, including a series of gas cooperation agreements with Syria Syria to the tune of €160 million. Later Russia has invested more than $1 billion to help the Tarma gas mine transfer to LNG. Russia has altogether invested nearly $5 billion in the area and does not want China to invade its traditional interests. Is there much space for China to promote energy cooperation in the area? Very little. As a main trade partner for China, Turkey does not put energy cooperation with China as its core strategy. Building an energy hub connecting the East and West is the key goal for Turkish national energy strategy. Tukey is an important transfer center for the E.U.'s energy import diversification and Russia's strategy to avoid energy risk and strengthen energy trade with the E.U. China, a competitor of Turkey's for traditional energy in the Middle East, enjoys a minority policy disliked by Turkey. To strengthen trade with China is only expedient to Turkey. Therefore, the future partner with China in the area will focus on Egypt and Israel.

Energy security problems

How can China achieve energy security and trade in the area? China lacks a means of ensuring energy security in the area. After the crisis in the Middle East, the local safety and political situation has taken a turn for the worse, hindering local energy cooperation and posing large-scale damage to security and stability, with building halted on many planned pipelines. Recently, ISIS has smuggled oil to obtain capital, damaging the local energy market. Some Chinese oil companies thus gave up their operations in Syria. It is worth considering that China should extend the Piraeus port in Greece as the supply hub for China's navy. The conflicts among countries in the area will influence China's will to cooperate. The struggle for oil in the area is very fierce. Cyprus and Turkey are nearly at war over maritime energy reserves. Egypt has refused to pay Israel $1.8 billion to end energy export arbitration agreement. Egypt and Eni of Italy are trying to increase the exploration and development speed for Zohr to replace Israeli gas imports. The bleak future of gas market fogged the possibility for further development of energy treasure in the area. The price of oil and gas has slumped. The low demand and rich sources have provided obstacles for Israel and Cyprus to become gas exporters. The dream for Cyprus to become a local source of energy and a commercial hub will also be only a dream.

The future of China's commercial relations

Will the slow-down of China's growth rate influence its trade with Mediterranean countries? Obviously, the slow-down of global growth will extend to the end of 2016 and the inflation will last longer. The growth rate of China has moderated and will influence its overseas investment. The rising market like Turkey lacks attractions for Chinese companies. If China treat the Mediterranean Sea as the risk area for investment in its "One Belt One Road" initiative, investment in the area may be lessened, thus bringing a negative development for the trade between China and local countries. Will the cloning method for China to develop oil, gas and new energy influence the cooperation progress between China and the countries in the area? The answer will be yes. The cloning of overseas technology has become a negative image for Chinese companies. Israeli companies have worried about the intellectual property of energy cycling when they work with Chinese companies. Currently, Israel has established the Nanshan Demonstration Area in China's Guangdong to create a new energy district with sustainable development. The goal of the demonstration area is to build a new district like Silicon Valley in the U.S. However, Israel will not put the most advanced new energy technology in China considering intellectual property. Will the diversified development of Chinese energy companies promote its capabilities to internationalize? In the current international situation, the struggle for oil and gas sources often intersects with national strategy. For example, the amendment of U.S. energy law had played a key role for CNOOC to give up purchasing Unocal. The case reflected that Chinese companies could not cope with international politics. Therefore, to broadly and comprehensively "going out," Chinese companies should be transferred to large global transnational companies, extending the whole industry chain and reducing the sensitivity of operation. Chinese companies should also acquire the service to deal with government and commercial groups from international companies. Joint investment with local companies can also be a good method. In a word, China is not the "beacon" for Mediterranean countries, which depend on rich overseas capital from China to develop local infrastructure. After their development, to squeeze and contain China might be the necessary strategy. Therefore, China should not treat the region as the key area for energy trade but focus on Middle Asia, the Middle East and South America as before.

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Azerbaijan/How to become a player in the gas market

It's all a matter of export

The Republic is interested in the eastern Mediterranean because it wishes to export gas through the Southern Gas Corridor. Success will depend on investment and Western political support

ZAUR SHIRIYEV

He is an Academy Associate at the Royal Institute of International Affairs (Chatham House) in London, UK. The views expressed here are solely those of the author in his private capacity.

Azerbaijan's interest in the eastern Mediterranean is rooted in its desire to export gas to this important market, following the full implementation of the EU-backed Southern Gas Corridor (SGC). The SGC is comprised of the Trans-Anatolian Natural Gas Pipeline (TANAP), its eastern component, and the Trans-Adriatic Gas Pipeline (TAP), which follows to the west. At the same time recent Turkish-Russian tensions have prompted Ankara to accelerate work on both pipelines in order to diversify export routes away from Moscow, the European Commission's approval of an agreement between the Greek government and TAP has brought forward the possibility of allowing a new gas pipeline to enter Europe. In spite of its initial modest capacity—10 billion cubic meters (bcm) annually by 2019—the Azerbaijani government believes that the TAP pipeline can bring important benefits to the eastern Mediterranean gas market. Azerbaijan's gas exports to Italy via TAP will increase competition among existing gas supply sources for the country. This is likely to reduce prices, enabling consumers to earn the benefits of gas

A challenging future

NICOLÒ SARTORI

After the launch of gas production in the Shah Deniz gas field, **Azerbaijan** has rapidly become **one of the most attractive partners** for the EU's new energy security policy. Almost simultaneously, the **inauguration of the Baku-Tbilisi-Ceyhan oil pipeline** has finally opened the doors of the global markets to the Caucasus country's oil resources. Despite these rosy prospects the country is facing significant challenges to its future hopes of becoming an energy player.

7 billion

barrels are **the country's reserves**, amounting to 0.4% of global reserves

1 trillion

cubic meters is the amount of **natural gas reserves**, equal to 0.6% of global reserves

-16.5%

refers to **the decline in oil production** from the peak of 2010 to 2015, which decreased from one million to 835,000 barrels a day

760,000

barrels a day, equal to 91% of production, **are exported to international markets**. Most exports are carried out via the Baku–Tbilisi–Ceyhan pipeline

3 times

natural gas production has increased by, from 9 billion cubic meters (bcm) in 2006 to 29 bcm in 2015. Commercially usable gas, however, remained at 18.9 bcm

THE DILEMMA RUNS SOUTH
An oil rig off of the capital Baku. The Southern Gas Corridor will play a role in stimulating development and integration of regional gas grids in southeastern and central Europe.

market liberalization. Furthermore, Azerbaijan will play a role in developing the Albanian and Greek gas markets. Based on a plan to gasify Albania, Azerbaijan will set up the national gas grid in Albania and further establish underground gas storage facilities. For Greece, by acquiring a share of national gas distribution network, Azerbaijan has taken on responsibility for building up gas network capabilities with the possibility of additional energy investments in the country.

Meanwhile, Azerbaijan sees increasing TAP's functionality as a way of reaching small market shares based on available volumes of gas. This strategy is a kind of revival of the Nabucco West project; not in terms of volume of gas, but in terms of benefiting more countries in Europe, using existing interconnectors. In this regard there are two interconnectors; one is the Azerbaijani gas supply to Bulgaria through the Greece-Bulgaria interconnector (IGB). Based on an agreement between Greece and Bulgaria, construction is expected to start in the latter half of 2016. In the other direction, the Ionian Adriatic Pipeline (IAP) will serve as a continuation of TAP export possibilities from Albania to Croatia, with the aim of establishing a new supply route to the Adriatic coast. The interconnector chain for TAP is not limited to the abovementioned. It could also reach other interconnectors based on the availability of gas; this strategy could mean not only exporting gas to small markets but also boosting integration and interconnectivity of regional gas infrastructure. This is in line with the E.U.'s larger supply diversification plan. The eastern flank of the SGC's development, i.e., TANAP, holds significant importance in that it has enabled Baku to move forward on the development of a gas pipeline from Turkish territory, which in its initial phase has been an Azerbaijani and Turkish project. While its functionality is not limited to exporting Azerbaijani gas to European markets, TANAP can also play a role in the diversification of Turkey's gas market by securing additional gas. From the Azerbaijani perspective, the challenge for both the Western and Eastern flanks of the SGC development is that to varying degrees they suffer from their relative lack of political influence when it comes to keeping major Western energy companies involved. This is because of the financial investment required by both projects—the declining oil prices are causing energy companies to turn away from taking on any financial burden in such a high budget project. However, most of the TANAP funding has been secured, according to the Azerbaijani government, though bank loans with long-running credit lines are still needed for both projects. Beyond the financial burden of the project, another challenge is the Russian factor, which in recent years has threatened the SGC's development. The other issue in this regard is the dilemma around securing additional gas sources to strengthen the importance of the Southern Gas Corridor for the European gas market.

Russia's growing capacity to halt the Southern Gas Corridor in its tracks

In selecting the Trans-Adriatic pipeline export route for Azerbaijani gas to Europe by the Shah Deniz consortium in 2013 over the Nabucco West gas pipeline, one of the determinants for official Baku was "bypassing Russia"—i.e., not being a market competitor in the same geographical area. Bypassing Russian territory has been part of Azerbaijan's energy strategy since the 1990's, when it developed the Baku-Tbilisi-Ceyhan oil export route as a way to shore up its credentials as an independent player both politically and economically. In both cases, the Russian factor is part of the geopolitical reality. In the latter instance, Baku's gas strategy evolved to avoid being a market competitor for Russia, aimed at reducing Moscow's political anxiety about any possible alternative to Russia's gas monopoly in the European gas market. While Azerbaijan's gas strategy was designed to account for "the Russian factor," this did not prevent the emergence of the Turkish Stream project. This is a joint initiative between Moscow and Ankara, essentially a modified version of the abandoned South Stream. The development of this new idea has been damaging to the prospects of the Southern Gas Corridor for various reasons. First, the Turkish Stream is a mirror image of TAP pipeline; both pipelines are projected to start at the Greece-Turkish border, in order to serve European markets. However, because Russia developed an export route to Turkey without having access to pipeline infrastructure beyond Turkish territory, Russian authorities declared their intention to use the TAP pipeline to reach the European market. In this regard, it is worth remembering that the South Stream pipeline failed because the E.U. refused to grant exceptions to the rules of the E.U.'s Third Energy Package. Hence, it was no coincidence that following the announcement of the Turkish Stream, Russian officials declared their desire to use TAP to export Russian gas to European markets. This is hypothetically possible but highly complex given E.U. regulations. It also entails a risk factor given that Russia's political clout in the region has been strengthened by its military invasion of Ukraine. Therefore, Azerbaijan is concerned about officially opposing Russia's aim. The threat posed by the Russian factor to the whole Southern Gas Corridor project is not limited to market competition. The huge volumes of Russian gas also undermine the modest capacity of SGC, especially in light of Russia's desire to use the SGC's infrastructure to deliver Russian gas; Turkish Stream would be operational before Azerbaijani gas starts flowing from the Caspian. The key risk is also that this will put Gazprom in a position to block the entire SGC endeavor, which anticipates increasing its capacity based on gas from Turkmenistan, Iraq, and possibly Iran. In particular, Russia can block gas exports from Turkmenistan to Europe via Azerbaijani and Turkish export infrastructure on the basis of the unresolved legal status of the Caspian Sea. Meanwhile, the Russian factor plays a strategically damaging role to the whole EU's diversification aim, offering huge volumes of Russian gas to a number of European countries, which reduces interest in the SGC.

Obviously, the SGC at its current modest capacity benefits few European countries in terms of supply diversification compared to the Russian offering, which benefits countries that do not benefit from the SGC at present. This allows Russia to create a kind of gas alliance by offering gas to countries disappointed by the selection of TAP over Nabucco West. These include Central European countries, and states belonging to the failed South Stream. Furthermore, the Russian offer extends to countries that are directly benefiting from the TAP pipeline. The primary example is Greece, which wishes to gain transit hub status through this development. Because of this, Russia's offer to Greece was also factor last year in the Azerbaijan State Oil Company's acquisition of shares of DESFA—Greece's gas grid operator. This affected Athens' decision to renege on the initially agreed sale of 66 percent of DESFA's shares to SOCAR, offering only 49 percent of shares. Moscow's play caused the fragmentation between E.U. member states in the absence of an E.U. consensus on an energy security strategy for common E.U. interests. The political tensions between Turkey and Russia since November 2015 have already had a negative impact on bilateral energy cooperation, essentially killing off the Turkish Stream idea. But despite this positive development from the perspective of the SGC, i.e., that the "Turkish Stream" is off the table, the recent Memorandum of Understanding (MoU) between Russia and Italy's Edison and Greece's DEPA to supply natural gas from Russia under the Black Sea through third countries to Greece and from Greece to Italy, poses a new threat. The MoU revives the ITGI-Poseidon interconnector, which before the TAP pipeline was conceived as an alternative means to transport Azerbaijani gas to Europe. At this stage, it is a market competitor. Furthermore, Azerbaijan has hoped to expand the SGC by obtaining additional gas from multiple sources to increase its competitiveness vis-à-vis TAP.

Notably, Baku has considered reviewing interconnectors to Bulgaria and other Balkan countries, but Moscow is now well placed to prevent the enlargement of the SGC's European market share via development of interconnectors.

An additional gas dilemma vis-à-vis development of SGC

In order to expand the SGC's share in the southeastern Europe and east Mediterranean gas markets and minimize the Russian factor, there are ongoing talks on bringing additional sources of gas to enlarge the pipeline.

Increasing capacity depends on the availability of gas sources. The technical capacity of the pipes by mid-2020 should be from 16 bcm to 31 bcm/year for TANAP, and 10 to 20 bcm/year for TAP. Meanwhile, beyond the Shah Deniz field, Azerbaijan owns a number of medium-sized offshore gas and condensate fields, whose reserves could substantially boost the country's export potential. But there are multiple challenges in this direction, including the rise in Azerbaijan's domestic energy consumption coupled with Baku's commitment to supplying neighboring Georgia additional gas in the coming years. Additionally, Baku's offshore fields require long-term time and resources for investment. This makes finding additional gas sources a question of urgency. Realistically, there are two primary gas sources for the SGC's development—Turkmen and Iranian, and each is problematic in some regard. The Iranian option only emerged after the final nuclear deal that ended international sanctions. The E.U. sees Turkmenistan as a boost to the realization of the Southern Corridor, and supports extending the Trans-Caspian Pipeline to link Baku and Ashgabat.

Since 2011, it has been committed to negotiating a legally binding treaty between the sides. However, Iranian and Russian opposition to an undersea pipeline and the need for financial investments in pipeline construction mean that this is not feasible in the foreseeable future. Nonetheless there are alternatives; namely the Kyapaz (Sardar) field, currently disputed by Baku and Ashgabat, which could be jointly developed. For this to work, an interconnector is needed to link this field to existing Azerbaijani infrastructure in the Caspian Sea. In Iran's case, since the development of political and economic relations with Azerbaijan in the last two years, and a MoU on joint exploration oil and gas fields, there are two potential oil and gas fields that could stimulate Iran's gas exports.

The first is the Sardar-e Jangal oil and gas field, which holds huge reserves. The second, over which Iran and Azerbaijan are in dispute over ownership, is the Araz-Alov-Sharg field, containing proven gas reserves of 400 bcm. Both fields offer opportunities for possible Azerbaijan-Iran joint exploration for the SGC, and would enable Iran to reach European markets.

What determines the implementation of TAP and TANAP

The Southern Gas Corridor will play a role in diversifying gas supplies and stimulating development and integration of regional gas grids in southeastern and central Europe. Undoubtedly, the investment needed for the project, political support in the West, and the minimizing of alternative gas projects, i.e., Russian ones, will determine the implementation of both TAP and TANAP from Azerbaijan's perspective.

Infrastructure/The future of energy networks

The new gas routes

South Stream has been set aside, Turkish Stream scaled back, and Nabucco effectively ended. New discoveries in the eastern Mediterranean have led to a supply system in flux

ALESSANDRO SCIPIONE
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Nabucco and South Stream were at the beginning. Two competing projects supported by historic rivals, the United States and Russia, both intended to supply energy to southern Europe. The gas pipeline designed by Gazprom, the Russian gas giant, would have enabled Moscow to bypass Ukraine and transport up to 63 billion cubic meters of gas per year to the Old Continent, at an estimated construction cost of €19-25 billion. The 2,380-kilometer route would have had to cross the Black Sea to then follow two directions: one to the north, via Bulgaria, Serbia, Hungary and Slovenia to reach Tarvisio, in Friuli-Venezia Giulia; the second to the south via Bulgaria, Greece and the Balkans to reach, via the Ionian Sea, Otranto, the easternmost point of Italy.

South Stream and Turkish Stream: frozen projects

South Stream remains only on paper—formally—due to Bulgaria's refusal to allow the pipeline to pass through its territory. Moreover, the European Commission had threatened to impose sanctions against Sofia for alleged irregularities in the project. Having abandoned South Stream due to the prohibitions imposed by the EC executive, Moscow attempted, in December 2014, to launch Turkish Stream: a new pipeline of the same capacity—63 billion cubic meters, 14 of which were destined for the Turkish market, the rest to Europe—to link the Russian shore of the Black Sea to Greece, via Turkey. However, the shooting down of a Russian Sukhoi 24 bomber by the Turkish Air Force on the Syrian border caused relations between Moscow and Ankara to break down significantly, and all cooperative projects between the two countries have suffered a setback. Among these was Turkish Stream.

Nabucco: gas from Azerbaijan to Austria

Nabucco, a natural gas pipeline supported by the U.S. and the European Union, would have linked the Turkish hub of Erzurum, the arrival point of pipelines from Azerbaijan and Iran, to the Baumgarten platform in Austria, where the gas would have been stored and distributed to the rest of central Europe. The pipeline, at least 3,300 kilometers long and with an annual capacity of 31 billion cubic meters, would have passed through Turkey, Bulgaria, Romania and Hungary. The project was then reduced to a 10-23 billion cubic-meter capacity pipeline, dubbed Nabucco West which, from the Turkish-Bulgarian border, would have reached Austria after a 1,329-kilometer route. However, the consortium managing the Shah Deniz II gas field in Azerbaijan chose the Trans-Atlantic Gas Pipeline (TAP) to transport its natural gas to the European markets, effectively marking the end of Nabucco West.

TAP: a gas pipeline sought by Europe

The TAP project provides for an 870-kilometer long gas pipeline with a capacity of 10 billion cubic meters per year, which may be increased to up to 20 billion, which will pass through Greece, Albania and Italy.

EASTERN MEDITERRANEAN PIPELINES

Source: Eni

Along with the Trans Anatolian Gas Pipeline (TANAP), which crosses from eastern to western Turkey, and the South Caucasus Pipeline (SCP), connecting Azerbaijan, Georgia and Turkey, the TAP is one of the infrastructures of the so-called Southern Gas Corridor, sought by the European Commission to promote infrastructure projects aimed at increasing the diversification of sources and the security of energy supply, thanks to the transport of new gas from the Caspian Sea.

ITGI Poseidon: a proposal arrives from Russia

Russia's latest response to the TAP is ITGI Poseidon, a gas pipeline expected to connect Italy to Greece that could follow part of the old southern route of the South Stream pipeline. The project, which is still in its very early stages, has already seen the signing of a memorandum of understanding between Russia's Gazprom, Italy's Edison and Greece's Depa. The pipeline provides for a 200-kilometer stretch off the coast of Greece and Puglia, to Otranto, therefore placing itself in direct competition with the Trans-Adriatic Gas Pipeline. It is not yet clear whether Russia intends to connect itself to the Greece-Italy interconnector from Turkey or Bulgaria. Moscow has, however, dusted off a failed project from the Shah Deniz consortium, which currently has many advantages. Both Rome and Athens, in fact, have already obtained authorizations required for the landing of the gas pipeline and most of the onshore stretch. Meanwhile, Greece and Bulgaria have already agreed to build the Greece-Bulgaria interconnection, which includes, among its partners, Edison, Depa and Bulgaria's BEH. Ironically, Moscow now seems to want to strongly launch a project that was originally designed to alleviate Europe's energy dependence on Russian gas.

How the supply prospects are changing

The new hydrocarbon discoveries on the seabed of the eastern Mediterranean could, however, radically change the situation of supplies to Europe. The Leviathan supergiant natural gas field (450-600 billion cubic meters) off the coast of Israel, the supergiant Zohr gas field (850 billion cubic meters) off the coast of Egypt, and the large quantities of gas found in the Cypriot gas field of Aphrodite (200-300 billion cubic meters) could potentially meet the energy needs of the Old Continent. The Levant Basin may well establish itself as a valid alternative to the traditional east-west axis that links Europe to gas from Russia via the North Stream gas pipeline, and from central Asia via the Southern Gas Corridor, also downsizing Turkey's role as a strategic transit hub. Israel, Egypt, Cyprus and Lebanon could also enter into direct competition with Iran, which, after the lifting of the economic sanctions, aims to become one of Europe's main suppliers. In other words, the eastern Mediterranean is set to become a huge hub of relatively stable, low-cost gas, located a few nautical miles from the coasts of Europe.

A new network of gas pipelines or a system of liquefaction plants?

There are two ways of channeling this enormous amount of gas, amounting to approximately 1,500 billion cubic meters, according to the latest estimates, to continental Europe: a new network of gas pipelines or a system of liquefaction plants that would supply oil tankers. On January 28, 2016, Greek Prime Minister Alexis Tsipras, Israeli Prime Minister Benjamin Netanyahu and the President of the Republic of Cyprus, Nicos Anastasiades, have not ruled out the possibility of constructing a gas pipeline known as the EastMed, which is expected to resupply the European market. The idea of constructing an underwater pipeline in the eastern Mediterranean linking the Middle Eastern coasts to Greece and Italy, via the island of Crete, may sound appealing, but would have a steep cost and, with the price of oil floating at around $30 a barrel, appears optimistic. The construction of natural gas liquefaction plants is much more feasible and Israel, Cyprus and Greece have already agreed to the construction of joint infrastructure for transporting gas from the Aphrodite gas field to the Greek peninsula, where LNG terminals would be built. The leaders of Egypt, Cyprus and Greece also signed a joint statement in Athens on December 9, 2015, with the aim of using hydrocarbons as a facilitator of peace "through the adherence of countries in the region to the established principles of international law."

CORRIDORS OF GAS
The existing pipelines, mostly concentrated in Egypt, Israel, Jordan and Lebanon, and those still under construction to bring gas to Europe.

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Infrastructure-Suez/Strategies for economic recovery

A resurgence in the land of the Pharaohs

While Egypt reaches new trade agreements with European partners, a major gas discovery and the expansion of the Suez Canal offer hope for economic growth

GIUSEPPE ACCONCIA

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The expansion of the Suez Canal, inaugurated last August, and the discovery of one of the largest gas fields in the eastern Mediterranean, the Zohr IX exploration prospect, are the main outcomes of the Egyptian economic policy after years of stagnation. They promise economic growth that could have significant long-term effects on the country's infrastructure. However, it is still too early to establish the impact that these major works may have on the Egyptian economy. Cairo's government is, on the one hand, negotiating a new loan with the International Monetary Fund (IMF) and, on the other, implementing policies to cut public spending in a context of mobilization of the public sector following recent salary cuts.

The economic effects of a multi-billion dollar expansion

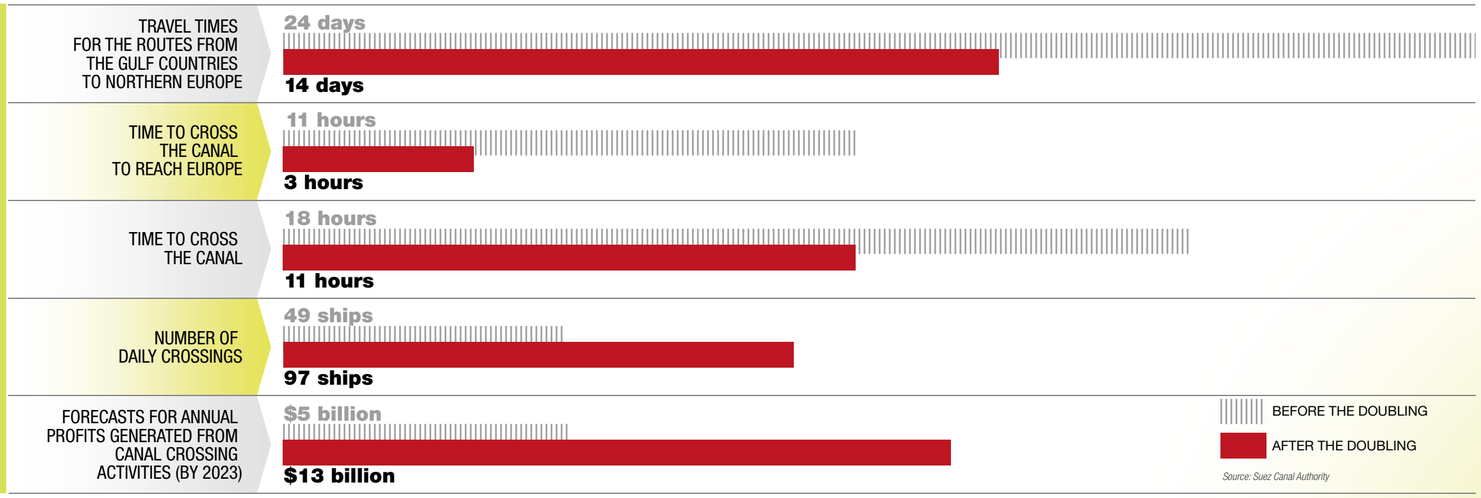
The Suez Canal was nationalized by Egyptian President Gamal Abdel Nasser in 1956. It now controls 19 percent (240,000 tons of goods) of the global maritime trade and its importance has been growing exponentially in the last decade.

With its expansion, the Canal has grown from 80 to 115 kilometers, allowing for faster two-way traffic. Freighters and merchant ships will reach the ports of Great Britain from the Gulf Countries in just 14 days instead of the 24 days previously required. Moreover, travel waiting times for ships heading to Europe have decreased to three hours from eleven. Canal crossing times have also been reduced (from 18 to 11 hours). Numbers are gradually increasing, from 49 ships per day crossing the Suez Canal last year to 97 expected in the coming years. According to the Egyptian authorities, the project will more than double annual profits from the Canal, from $5 billion to $13 billion by 2023. However, these estimates depend on a more general growth in global maritime trade.

"The expansion of the Suez Canal has been the main success of the Egyptian economy in recent years and is already recording its impact on growth rates," said the economist and director of the Third World Forum, Samir Amin. With the quick implementation of the expansion of the Suez Canal, the Egyptian military has sought to present themselves as economic innovators, as they did with the March 2015 Egyptian Economic Development Conference in Sharm el-Sheikh. Moreover, for months, the Egyptian authorities have aimed to strengthen bilateral relations with strategic partners in Europe as well as Russia and the United States. These include, in the front row, Italy and France, with whom Egypt signed agreements totaling sixteen billion dollars between early 2015 and the beginning of 2016.

The Gulf of Suez, together with the eastern Mediterranean and the Nile Delta, show the most significant growth in foreign investments in the →

effective infrastructure



Egyptian oil market. The implementation of the expansion of the Suez Canal, in a region affected by serious political instability should allow Cairo to focus more strongly on gas production. This has been achieved thanks to better management of both the Suez Canal and the Suez-Med Pipeline. Following the jihadist attacks on the gas pipelines in the Sinai and the halt to gas exports to Israel and Jordan (2012), even U.S. energy companies (Noble) and Israel's Delek have undertaken to relaunch the Egyptian energy market.

According to some Egyptian analysts, the U.S. and Israeli investments could allow for greater developments of the local industry's companies.

Yet, according to initial figures, published by the *Financial Times*, the project has not yet produced significant economic benefits. Indeed, profits have decreased from $462 million last August, before work had been completed, to $449 million in October.

The Egyptian government is committed to new liberalization policies, privatization of the energy market and to significant cuts in public spending, as required by the International Monetary Fund (IMF), with which Egypt is negotiating a huge new loan. Moreover, in recent European business missions, the Chairman of the General Authority for the Suez Canal Economic Zone, Ahmed Darwish, has requested a greater commitment to investment in the expansion of infrastructure in the area in order to achieve the goal of creating a large free trade zone by 2030.

Eastern Mediterranean and Zohr IX gas field

Furthermore, the recent gas discovery could give the Egyptian economy a significant boost: the Zohr IX exploration prospect. Indeed, former Minister of Energy and Petroleum Sherif Ismail was elevated to the top of the Egyptian government, on the strength of this discovery.

Zohr IX, in Egyptian territorial waters 107 kilometers off the coastal city of Port Said and 200 kilometers from Eni's Temsah platform, is located 1,450 meters deep, in the Shorouk block, granted to the management of Eni following a January 2014 agreement between the Egyptian Oil Minister and the Egyptian Natural Gas Holding Company (EGAS). Once production has started, most likely by 2017-2018, the giant gas field could produce 850 billion cubic meters (the equivalent of 5.5 billion barrels of oil, and some analysts believe that number is conservative) in a one hundred square kilometer area.

Eni's discovery could have significant effects on Egyptian imports and exports in the sector. Egyptian authorities are aiming to achieve the goal of energy self-sufficiency by 2020.

The pro-government newspaper *al-Abram* celebrated Zohr IX as a path to this goal. "We will now have natural gas to supply our plants, for much-needed industrial development, for new factories and increased employment," assured industry expert Mohamed al-Ansary. At full production, "gas exports should only be a small part of production: approximately 10 percent," added al-Ansary. According to the local press, pipelines will start from the Temsah platform to reach the Zohr IX prospect. This would make it possible to launch production within just over two years, with a resulting fall in prices.

"When Zohr IX becomes operational, it will be a great help to economic growth and the reduction of imports," said the former director of the Cairo Chamber of Commerce, Ali Moussa. In the long term, the discovery of the giant Zohr IX gas field should reduce the country's net foreign debt and reactivate foreign investments, which withered in response to the economic crisis of 2008.

Lastly, the discovery of Zohr IX came during a period of economic stagnation for Egypt's economy, with a concurrent crisis in the country's tourism industry. Specifically, the attack in the Bahariya desert at the end of last year, in which Mexican tourists were mistaken by security forces for terrorists, and the in-flight explosion of the Airbus Metrojet A321, which caused the deaths of 224 people, have seriously affected the local tourist industry.

The geopolitical repercussions of two great projects

When Zohr IX becomes operational, Egypt will be able to export its gas to Israel and Cyprus. For this reason, the cooperation between the governments of the three countries is crucial to forming a joint-venture. Evidently political resistance exists because this has not yet happened.

The Egyptian authorities, during an initial stage, seemed willing to proceed alone to exploit Zohr IX. Yet it would have been possible for them to create, together with Cyprus and Israel, a main gas hub in the eastern Mediterranean. On the one hand, this would have allowed Egypt to strengthen its geopolitical role in the region and, on the other hand, the European Union to increase its imports from the region in a context of reduced domestic production and approaching end of long-term agreements with Norway and Russia.

The Israeli authorities had hoped to export gas extracted from the Leviathan gas field to Egypt. Even Britain's British Gas and Spain's Fenosa Gas aimed at exporting to Egypt thanks to Leviathan and to Israel's offshore Tamar gas field.

Yet the announcement of the discovery of the giant gas field in Egypt caused a financial earthquake in Tel Aviv (and also in Qatar). The development of the gas field, which is not yet operational, has been blocked by a bitter internal political debate concerning industry regulation. According to Israeli expert Eran Unger, Tel Aviv company Tamar could now see a decrease in its exports and will have to contend with lower prices. However, Israel's National Security Council was convinced that Egyptian authorities would not have been able to relaunch the country's local gas market. Israel's Energy Minister, Yuval Steinitz, reiterated the government's intention to approve the Leviathan plan and confirmed the strategic centrality of this project.

Thus, despite skepticism by Israeli entrepreneurs and the collapse of the Tel Aviv Stock Exchange due to speculation on a possible Leviathan collapse, last November Israeli Leviathan partners reached a preliminary deal to export gas in the Egyptian domestic market for 10-15 years, signing an agreement worth $10 billion.

The Egyptian president, Abdel Fattah al-Sisi, needs international legitimacy and economic recovery in order to erase and overcome the images of political instability and the recent attacks against tourists and foreigners. Both the construction of the Suez Canal expansion and the announcement of Eni's discovery off the coast of Port Said could help to create the foundation for significant achievements in the country's economic growth and new opportunities in the regional energy market. The construction of the Suez Canal expansion is a step forward for global maritime trade, but its effects on the Egyptian economy are still small. Real economic development and new investments could be encouraged in Egypt especially by innovative industrial policies to rebuild the chemical and steel sector and the textiles and agri-food sector. Major projects, however, must be accompanied by structural reforms in industrial policy: on the one hand, in response to the requests of the International Monetary Fund (IMF) and the World Bank (WB) and, on the other hand, in the form of programs to meet the needs of the middle classes and the poor, who have been seriously affected by the economic crisis of recent years.

History/Europe and the East: a relationship across the centuries

Of diplomacy and dialogue

Egypt's Damietta, a major LNG terminal, was the scene of a historic meeting between St. Francis and the Sultan al-Malik al-Kamil, the first act of a strategy of opening to the southern shores of the Mare Nostrum, which is currently crossed by new business interests

THE HISTORIC SUMMIT. The fresco by Giotto in the Basilica of Assisi depicts the meeting between Francis and the Sultan. There are still many doubts about the historical veracity of this event, which would have been held in the summer and autumn of 1219.

FRANCO CARDINI

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taly and the Levant, Italy and the East, Italy and Asia in general, Italy and northeastern Africa: there is so much to say. But from what point can you start talking about Italy and Italians? The historical question is much debated: yet there is a matter on which there is a fair degree of consensus. Italy, as a socio-cultural reality, begins when you start to see the emergence, within its regions, of a language that qualifies as Italian. We can look to the poet and religious figure St. Francis of Assisi, who was in his way and *avant la lettre* a missionary or even a true diplomat, for the start of our history.

Francis and the Sultan: between political reality and oral tradition

By 1217, during the *Capitolo delle Stuoie* [Chapter of the Mats] from his *Fraternitas* which has now become the *Ordo*, Francis of Assisi had ordered the deployment of many brothers to lands overseas, not only to Palestine, but also to the areas of the southeastern Mediterranean basin (from Egypt to Greece). The *ultramarine* province included Constantinople, Greece and its islands, Asia Minor, Antioch, Syria, Egypt and the island of Cyprus. Contemporary accounts tell us that in 1219, a meeting was held in Damietta between Francis and the Sultan. Whether this meeting really took place, as well as its purpose and meaning, have been debated ever since. Did Francis of Assisi and the Sultan of Egypt really meet between the summer and autumn of 1219? It is likely, since the episode is recalled in non-Franciscan sources. There are in fact five testimonies that are not late and non-Franciscan: the *Historia occidentalis* of the bishop of San Giovanni d'Acri Giacomo da Vitry; the reporter Ernoul, continuer of the *Chronicle* by William of Tyre; the reporter Bernard the Treasurer, epitomator of Ernoul; the anonymous *Histoire d'Eracles empereur et la conqueste de la terre d'outremer*; of 1229-31, known to Francis, does not speak of the visit to the Sultan but alludes to the "evil" and "sin" that was growing among the people of the camp; finally, the funerary inscription of Fakhr ad-Din Muhammad ibn Ibrahim Fârîsi at the City of the Dead in Cairo, which appears to allude to Francis. These testimonies are corroborated by a later one by Thomas of Celano, and those more recent still, of Jordanus of Giano and of Bonaventure. All three were missionaries, and so unlikely to have been trying to create a pious tradition for the Order.
Although it is impossible to say a definitive word on the episode, it is no doubt that this moment can at least be taken symbolically as an initial step towards an interest in the East that is not just military; although, to be honest, cities such as Genoa, Pisa, Amalfi and Venice had for a couple of centuries commercial and diplomatic exchanges with the southern and eastern Mediterranean. But from the thirteenth century, the golden age for European development, these relations certainly increased. One cannot help but remember the most successful example of diplomacy, namely, the visit to the Sultan (the same one that would meet Francis) by Swabian Emperor Frederik II. Following the failure of the Fifth Crusade (1217-1221), Frederik, who had no interest in antagonizing the Sultan of Egypt (with whom he had a diplomatic friendship, and whose territories were close to Sicily), was careful not to come to the aid of the Crusaders. But the new Pope, Gregory IX, unhappy at this, demanded that Frederik immediately leave for the crusade and, when a shipboard epidemic prevented Frederik from doing so, excommunicated him. The papal excommunication released Frederik's subjects' obligation of loyalty towards him: any political opponent of Frederick in Germany, Italy or Sicily would then have been able to rise up in arms for their own interests, proclaiming to do so in the name of faith. This forced Frederick to leave (1228), but not without taking certain countermeasures. First, he obtained a dynastic stake in the Holy Land by marrying Isabella, the heiress of the crown of Jerusalem; he then went to Palestine as the legitimate pretender to the crown and, as such, planned to bring order among the lords and commoners of the coastal towns from which the kingdom was by then formed. He then grasped the opportunity to strengthen his friendly relations with the Sultan. In fact, with al-Malik al-Kamil, he drew up a treaty by which Jerusalem would be granted to him: but without walls, and with the exception of the area of the Mosque of Omar (considered by Christians as the Temple of Solomon) which was a Muslim holy place. It was in Jerusalem that he solemnly took the crown of that kingdom (1229), despite the opposition of the local clergy and almost all of the feudal lords. He then remained a few months in the Holy Land, trying—without succeeding—to restore order to the then tragic situation of the kingdom.

The adoption of the Holy and the papal intervention

At the same time, ecclesiastical diplomacy was making progress in the Holy Land. 1230 was a critical year for the establishment of the Custody of the Holy Land. In fact, in that year, the first official acknowledgement was made of the Franciscan work in those places, contained in the seal of Gregory IX. The King of Naples contributed to the establishment of the Custody in 1333 when he bought from the Sultan of Egypt the property of the Cenacle in Jerusalem, transferring it in 1342 to the Order of the Minors.
However, returning to the thirteenth century, we must not forget that this period also saw the expansion of a range of secular and ecclesiastical diplomacy all the way to the Far East. Around 1240, the Mongol armies had terrorized eastern Europe. Elected in 1243, Pope Innocent IV took two approaches to the Mongol threat: on several occasions, he sent the crusades against the Tatars; but, at the same time, he tried to take the first steps toward a peaceful resolution by seeking diplomatic relations.
One of the first missions was that of the Franciscan Lawrence of Portugal towards the Tartar Ilkhanate of Persia; his confrère, John of Pian de Carpine, then left in 1245, reaching the Mongolian capital, Karakorum. Even St. Louis IX of France sent his emissaries to the Tartars, some of whom were religious people of Italian origin, such as the Dominican Ascelin of Cremona, who arrived in Persia in 1247; although the most famous journey was taken by the Franciscan William of Rubruck between 1252 and 1254. William, like John of Pian de Carpine, left a written account of what he experienced, though one longer than that of his confrère and of immense interest.
All this paved the way, in the second half of the century, for the great journey of the Venetian merchant-diplomat Marco Polo, who lived in China, moving also to other parts of Asia, for almost twenty years. Marco Polo placed himself at the service of the Great Khan and recorded his extraordinary adventures in the book known in Italy as *Il Milione*.
In 1286, a very important mission also left from Italy: that of the Franciscan John of Montecorvino, who stopped in India and reached China in 1294 to later found in Beijing, in 1307, the first diocese of the Catholic Church.
With the end of the *pax mongolica* and the fall in 1368 of the Sino-Mongolian Yuan dynasty, the missions in China became more difficult. They were launched again roughly two centuries later. this time arriving by sea and led by the Society of Jesus. But the missionary ideology of the second wave was based on very different conceptions from those of the Franciscans and Dominicans.
The first prominent missionary from this period was father Alessandro Valignano, appointed in 1572 as visitor of the missions of the East In- →

Francesco d'Assisi
(1181/2-1226)
Obtained Jerusalem by the Sultan

West/East: 8 centuries of contacts

Federico II
(1194-1250)
Was crowned King of Palestine in 1229

Innocenzo IV
(1195-1254)
Promoted a diplomatic strategy towards the Mongols in eastern Europe

Giovanni Pian del Carpine
(119... – 1252)
He was sent to Karakorum in mission among the Mongols

Guglielmo di Rubruck
(1220 ca.-1293 ca.)
Has left an account of his mission in Asia

Marco Polo
(1254-1324)
Lived in China for over twenty years at the service of the Great Khan

Giovanni da Montecorvino
(1247-1328)
Founded China's first diocese of the Catholic Church

Alessandro Valignano
(1539-1606)
Was appointed visitor of the East Indies in 1572

Matteo Ricci
(1552-1610)
Opened the first Christian mission in China

Giorgio La Pira
(1904-1977)
"Saint" Mayor of Florence, he was the creator of the "Mediterranean Talks"

Antonio Salandra
(1853-1931)
Decreed Italy's entry into World War I

Vittorio Emanuele II
(1820-1878)
Supported the opening of the Suez Canal in 1869

Cristoforo Moro
(1390-1471)
Elected Doge, he defended the possessions of Venice from the Turks

dies. Valignano had an ambitious project: to embed Christianity in the three greatest powers of the East: in India at the Grand Mughal Akbar, in Japan and in the Chinese empire at the court of Beijing. The best interpreter of his method, based on acculturation between Christianity and local cults, was his disciple Matteo Ricci, who himself became the best-known Italian traveler in China after Marco Polo. In 1602, Ricci launched the first Christian mission in the capital. In 1609, work in the first public church in Beijing began. He died on May 11, 1610 at the age of 58, having achieved roughly 3,000 converts. In the following century, conversions went up to 200,000 and extended beyond the educated classes to the entire social strata. In the second half of the seventeenth century, however, the wave of success began to arrive in China with the arrival of the Dominicans and Franciscans, who soon entered into conflict with the Jesuits on what was by then referred to as Catholicism of "Chinese Rite." The Issue of Rites was presented to Rome, and in 1704 Pope Clemente XI claimed the Society of Jesus to be wrong. This gave rise to a long crisis that led, in 1724, to the abolition of this first attempt at planting Christian worship in the Empire.

The opening of Suez

Meanwhile, the Italian diplomatic penetration continued in the Near East. In 1422, a Florentine delegation went to the Mamluk Sultanate with the aim of opening the ports of Cairo to Tuscan merchants; subsequently, even Venice sent its representatives several times. The launch of a Florentine naval policy undoubtedly contributed to worsening relations between Florence and Venice, until then characterized by a solid alliance. As with the Ottoman Turks, who had conquered Constantinople in 1453 and who would repeatedly threaten Europe until the beginning of the eighteenth century, their diplomatic and commercial relations with Venice, Genoa, Florence and the kingdom of Naples were flourishing and their ambassadors were welcomed even during periods of war.
Pre-unification Italian states—especially the Republic of Venice, the Grand Duchy of Tuscany, and the Kingdom of Naples—developed a discreet diplomacy towards Asia, above all—apart from the Ottoman Empire—against the Safavid Shah of Persia and then Qajar, at a time when both commercial proposals and proposals of military alliance against the Ottomans were often made. Instead, the young Kingdom of Italy, following a military appearance which was actually diplomatic, as in the Sardinian-Piedmontese participation in the Crimean War of 1854, turned with a fair decision to assess its role in the Mediterranean. Piedmont had approached the France of Napoleon III, then leading the effort to cut the Isthmus of Suez, in which Italy was interested, mainly due to its existing proto-colonial relations with Eritrea. But after Napoleon's defeat by Prussia in 1870, he was forced to sell his share of the Suez Canal, which had been opened the year before. As a result, the Kingdom of Italy identified its appropriate allies as the "Central Empires," (Germany and Austro-Hungarians) with which it contracted the pact known as the "Triple Alliance," and with Great Britain. The latter—by then owner of both Gibraltar and Suez—showed a keen interest in Italy, which was, in fact, a jetty dividing the Mediterranean into two basins and offered good prospects for industrial investment and shipbuilding. It also looked to France, but a failed agreement in 1882 for the conquest of Tunisia undermined the "good neighborliness" between Paris and Rome and suggested the latter to direct itself increasingly towards London. The ascent to the German imperial throne of the turbulent Wilhelm II, Italy's hostility against Austria due to their shared designs on the Adriatic and Balkan Peninsula and, lastly, the war for the annexation of Tripolitania and Cyrenaica against Turkey, an ally of Germany and Austria-Hungary, drove Italy, which had begun to look to the Far East (and had sent missions to both Japan and China) to move from the "Triple Alliance" to the "Triple Agreement" with the French, English and Russians. This was the start, in 1915, of the First World War.
The Great War was a huge tragedy, a terrible bloodshed. But the fact remains that Italy was a second-rate player in the conflict and that, for this reason, at the end of the war, the great powers treated it with much less regard than the Italian government had hoped; disregarding promises of financial benefits and territorial expansions. After the Second World War, a still shaky Italy also took, among other things, a diplomatic path, the basis of which was, on the one hand, a remnant of international credibility (which had helped the country to acknowledge the trustworthy administration of Somalia until 1960) and, on the other hand, its NATO membership, which prompted it to move into America's sphere of influence. In this context the country managed to take off again and gain credibility, not only by making cautious and calibrated diplomatic choices, but also through the likes of businessmen like Enrico Mattei. who managed to make Eni the center of a real "parallel diplomacy" and the lawyer Giorgio La Pira, the "Holy" Mayor of Florence, an austere Catholic proponent of a message of social justice and creator of the "Mediterranean Dialogues" which, in the fifties and sixties, marked the friendly relations between Italy and the Arab world.
The crisis of the "First Italian Republic" and the heated events of the last quarter of a century brought new, and not always positive, changes to an Italian foreign policy that seemed subordinate to U.S. power and conformist to the aims of America and its allies. A somewhat scattered and disorganized symptom of originality, appeared, if at all, during the "twenty years of Berlusconi," with improvised openings to Russia and Iran, while only recently— in the wake of the Libyan and Syrian crises—the Italian government gave signs of a renewed interest in Africa and Asia, undoubtedly connected to the problems of migration and the terrorist threat, but also to the prospect of openings to resources and important markets. This could herald a new political-diplomatic era and, perhaps, new, broader alliances. In 1954, the discovery of methane off the coast of Egypt offered a wonderful opportunity to the original inventiveness of Enrico Mattei, Today, that of new oil and methane deposits identified in the international waters of the eastern Mediterranean could, for Italy, be a provident economic and technological, but also diplomatic, opportunity.

The Mediterranean from an anthropological point of view is a sixth continent, distinct from the arbitrary five continents of geographers. The Mediterranean divides but never separates. Take people from the very antipodes of the earth, scatter them along the shores of the Mediterranean and by an indefinable magic they will all become Mediterranean in a matter of a few years.

From "The Fisherman of Halikarnassos, 6th Continent"

1

6th Continent

Mattia Insolera
He started his career being the tour photographer of the famous Italian singer Vasco Rossi. Since 2007, he has been based in Barcelona. His project 6th Continent has been funded by the Catalan Council of Culture and Art, the Caixa Foundation and the Grimaldi Shipping Company. In 2009 he won second prize in the daily life category of the World Press Photo Award. In 2011, he collaborated with Doctors Without Borders documenting migrations. In 2014, he was the recipient of the award of the MIA Photographic Fair. In 2015, he was able to publish his first photo book 6th Continent, thanks to a crowd funding campaign that reached 115 percent of the goal. His work has been published in important magazines worldwide.

2

3

1 | The monastery of Notre Dame de la Garde owns the last working salt marshes in Lebanon. The monastery is under the surveillance of the Lebanese Army and employs Syrian refugees in the salt marshes. Anfeh (Lebanon).
2 | View of the Suez Canal from an alley, Port Said (Egypt).
3 | Nuraghe Mereu, 2400 BC. Orgosolo (Sardinia).

portfolio

4

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4 | Approaching Imvros Island, in the Aegean Sea. The island hosts the last village in Turkey still inhabited by a Greek community.
5 | Fish market, Catania.
6 | A remote settlement of Orthodox monks in Karoulia, Mount Athos (Greece), the spiritual center of the Orthodox church. The entire peninsula is forbidden to women.

6

7 | The entrance of the shipyard in the Anfushi neighborhood of Alexandria (Egypt).
8 | Gulay Dogan and her daughter Tugce fishing in the Gokova Bay. They belong to the only community of fisherwomen of the Mediterranean Sea. Akyaka (Turkey).
9 | Father Simeonas, a Bosnian Orthodox monk, trying to tune his radio on the dock of Karoulia a remote settlement of monks on Mount Athos (Greece).
10 | Rocco Pontillo after having harpooned a swordfish, Strait of Messina. The Pontillo family is one of the three remaining families practicing swordfish hunting, a tradition dating back to Magna Grecia, the period of Greek colonization of South Italy.

10

watch forecast

DAVIDE TABARELLI

Gas to the East for the future of peace

North Africa and the Middle East, the so-called MENA (Middle East North Africa) region, has the world's highest concentration of energy reserves in the form of gas and oil, the sources that still account for almost 60 percent of global energy demand. It is also the region most in need of peace, for its 370 million inhabitants and for those in neighboring areas, especially Europe, to which those who do not wish to live in the middle of wars are escaping. At the heart of MENA is the Mediterranean, the sea for access and transit to Europe and the rest of the world, today, as it was in the past, and will be in the future. It is here that huge gas reserves were found in September 2015, namely Zohr in Egyptian waters, below Cyprus. This discovery was, in many ways, out of the ordinary.

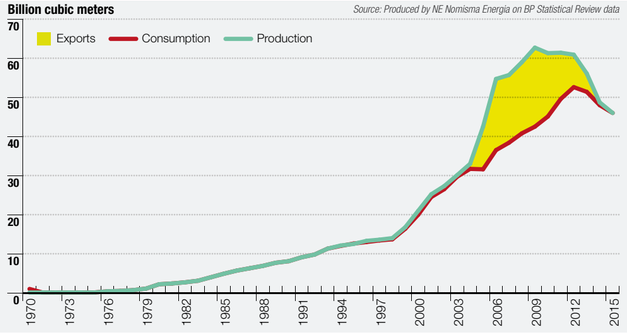
A region in need of stability

The Arab Springs, which started at the end of 2010, are far in the past, and their easy initial enthusiasm has given way to a grim reality. There are many reasons as to why the area needs growth and stability and many pass by energy, especially gas. The global demand for gas will grow rapidly in the years to come for environmental reasons, and the discovery of Zohr by Eni paves the way for its greater use in the entire region. Zohr has record

EGYPT: GAS CONSUMPTION AND PRODUCTION

Billion cubic meters

Source: Produced by NE Nomisma Energia on BP Statistical Review data



reserves of 850 billion cubic meters, equal to half of those in Egypt prior to the discovery. It is located in a place where others had previously drilled; it was only by looking to the geological structures, traps, as they are known to experts, that success was found. Italian ingenuity (and luck) have therefore opened a new frontier, confirming scenarios of further large availability in the entire Mediterranean. For Egypt, the most important country in the region, a resumption of gas exports, which had collapsed in recent years, is expected in the immediate future, both due to the fall in domestic production and due to the reduction in production by oil gas fields developed during the eighties. Egypt's production has fallen in the last four years by 20 percent, to 46 billion cubic meters; only ten years ago, an increase towards 80 billion was taken for granted. The fall in production has not only eliminated exports, but has also reduced domestic consumption. Exports of oil and gas are one of the conditions for bringing more economic development and therefore more stability. At current gas prices, exports from the Zohr gas field, via the facilities already existing, such as the liquefaction terminals of Damietta and Idku, could bring in €1 billion per year, with volumes sold amounting to10 billion cubic meters per year, providing enormous wealth for a country that is suffering from an internal crisis and a decline in revenue from tourism. Egypt's internal energy demand will also be met in a more environmentally friendly way—gas is much cleaner than coal, a considerable advantage in the polluted urban environments of large cities such as Cairo. The low gas prices do not help, which have followed the downward trend of crude oil, but they inevitably lurk near Zohr to the similar facilities that will be exploited in the coming years, possibly also leading to oil. After all, the deposits discovered below Cyprus and in Israeli waters confirm this.

Gas networks serve to unite

The MENA is a gas-rich, but still deeply divided region in need of good reasons to return to being united, to become a civilization as it was for so long in the past. The gas networks offer a way of uniting. The large volumes of gas that will be produced by the area will first be exported by ships, in the form of LNG, but the gas network projects, which are so often discussed, but for which very little is being done , need to start soon. It is still a distant dream imagining a MENA gas market consisting of a dense network of gas pipelines, but it is necessary, however, to aim, step by step, beginning with the development of Zohr.

Davide Tabarelli, President of Nomisma Energy from 1990, was director of the RIE, where he worked on research projects on the electrical industry and environmental policies. He publishes major magazines devoted to energy issues.

watch economy

GEMINELLO ALVI

The geopolitics of gas and Dunlop's (still current) idea

The discovery of the Zohr gas field in Egyptian waters is the largest ever made in the Mediterranean, and follows the already significant discoveries of the gas fields of Tamar and Leviathan in Israeli waters and Aphrodite in Cypriot waters. In order to complete this scenario of energy change, and therefore of economic change, some problematic issues must be overcome. The geopolitical situation in the region, complicated by Egyptian instability after the Arab Spring, but also by the climate of uncertainty in Israel, which has led to the delay of crucial investments, and by Cypriot delusions with regard to economic difficulty, has created challenges, as have downward revisions of the first estimates. The complication of the wars in Syria and Iraq, with attendant terrorism and chaos, unfortunately complete the picture, and justify pessimism. However, a purely economic calculation confirms the great advantages of the discovery, especially for Egypt. Zohr, with a twenty-year potential production plateau at 20-30 bcm per year, would be a comfort to a nation that has experienced increasing difficulty in meeting its domestic demand. It may also be only the first of a series of discoveries, such that in 2020, Egypt could once again become an exporting country.

A great opportunity for energy integration

Moreover, the gas field is located only ninety kilometers away from Aphrodite, which, in turn, is even closer to Leviathan, which would enable substantial economies in the coordinated exploitation of the area. This is also a significant opportunity for Israel and Cyprus, but the massive investments to be made require a politically stable situation, which the area currently does not have. However, regardless of whether it is decided to implement only the productions necessary to cover Egypt's domestic demand or to create a new gas hub in the eastern Mediterranean based on existing infrastructure, it is precisely the geopolitical climate that complicates every decision. The discovery could also be an opportunity for Europe, whose growing gas needs are complicated by reduced production from and expiry of long-term agreements with Norway and Russia. Yet the truth remains: major global economic opportunities risk becoming affected by a political crisis in the area that does not appear to be on the way to being resolved. There is good reason to remember the wisdom of Daniel Nicol Dunlop, who was born in Scotland in 1868 and died in London in 1935. Dunlop was a founder and then director of the British Electrical and Allied Manufacturers' Association (BEAMA) and also Chairman in the years between the two wars of the executive council of the World Power Conference, the predecessor of the World Energy Council. Without a doubt one of the most influential figures in the organization of the global electricity industry, Dunlop was also a friend to William Butler Yeats and cited for his theosophical passions in Joyce's Ulysses (he had met Joyce before working at Westinghouse).

Dunlop and the division between politics and the economy

A friend of transcendentalist philosopher Rudolf Steiner, with whom Dunlop shared, among other things, the idea that it was increasingly necessary to take a different approach to the economy than to politics. This led him to his most outrageous idea: the creation of supranational institutions, separate from state politics, to which the administration of energy sources would be delegated. This was certainly a bold proposal, and yet it now seems to be what is required in the eastern Mediterranean. In order to take the best interests of Egypt, Israel and Europe, of which Cyprus is a part, the economic administration of the major gas fields would have to be removed from politics. The European Coal and Steel Community offers a model of a kind; it contributed in no small amount to overcoming the disasters and hatred left behind by the war in Europe. Perhaps it would be necessary to have the temerity to reconsider Dunlop's idea, to consider a lasting common criterion for managing the gas fields in the area. Would overriding politics with purely economic institutions offer a way forward with the issue of water, which embitters relations between Turkey, Syria, and Iraq in the apocalyptic scenario of that area? Perhaps it wouldn't hurt to remember D.N. Dunlop.

Geminello Alvi has worked at the Bank for International Settlements in Basle. Previously, he was assistant to Paolo Baffi, has collaborated with Gruppo Espresso [Espresso Group] and with *Corriere della Sera*, and is currently partnered with *Agi*.

watch

world

GARY HART

Beware of the political dog that (still) does not bark

Sherlock Holmes, the famous English detective, once solved a mystery by noticing that a dog did not bark in the night. Energy, the political dog that has barked in every U.S. election since the OPEC oil embargo in 1973, is not barking in the 2016 presidential election. This in itself is newsworthy and deserving of exploration. There are several new realities that account for this. The first is worldwide overproduction of petroleum products and growing surpluses driving gasoline prices down dramatically in the U.S. Citizen consumers outraged at high gasoline prices four years ago, and demanding a political solution, now find themselves with the lowest prices in years. The second factor is, of course, the shale gas boom of the last several years based on new fracking technologies releasing oil and particularly natural gas from previously locked in and inaccessible giant shale formations. This, in turn, has led to the United States becoming an energy exporter rather than the heavy energy importer that it was for decades. This has

led to a third new reality—much less dependence on sources of oil in the Middle East and a major shift in American foreign policy in the region. Just a few short years ago the United States could not have undertaken nuclear negotiations leading to the lifting of economic sanctions against Iran for fear of alienating the Kingdom of Saudi Arabia, upon which we have been so dependent for oil supplies.

A change of front in the Middle East

This new reality continues to alter foreign policy calculations throughout the Middle East in a number of countries in ways still not clearly understood. But the demise of energy dependence is a dynamic new economic and geopolitical reality. Though energy price and supply as a major issue in U.S. national elections is the current dog that has ceased to bark, it has re-emerged in a different form—climate change. Except for a shrinking die-hard band of climate deniers, the long term impact of fossil fuel combustion on the climate is essentially an established scientific fact and a political reality. Still there is little discussion, at least at this early stage in the long, drawn-out presidential selection process, of the two most discussed major policy remedies: carbon tax and cap-and-trade. National candidates, including the two Democratic ones, seem to see this as a dangerous political third rail best left untouched. Despite increasing numbers of stories and pictures of glacier erosion and polar bears isolated on floating ice chunks, systemic change in petroleum pricing, with the threat of macro-economic impact, is largely avoided by the two Democratic candidates and completely ignored by the larger array of Republicans. Additionally, sharply lower oil prices have economically undercut the slow but steady emergence of alternative, renewables such as solar and wind. This is seriously unfortunate.

The risk of a lack of attention to energy

Thus, petroleum oversupply, dramatically reduced gasoline prices, shale gas and energy exports, liberation of American foreign policy in the Middle East, and avoidance of leadership on climate economics account for the energy dog not barking, politically at least, in the 2016 presidential contest. Arguably, this is the greatest shift in national campaign politics in the U.S. in almost five decades. The issue that dominated the last ten presidential campaigns has gone silent—at least for now. That is unfortunate because the climate continues to warm, consumption is still wasteful, and promotion of a shift to renewables has gone quiet. In the short term, all of this may seem to be to the good. But the failure of long-term thinking and planning, especially regarding the impact of fossil fuel consumption on the global climate, represents a dog that may start barking, sooner rather than later.

Gary Hart is a former United States Senator. He is currently Chairman of the American Security Project and a member of the U.S. Energy Security Council.

watch

gravity

centers of

IAI Istituto Affari Internazionali

When politics slows energy development

The eastern Mediterranean is considered one of the most promising frontiers for the production and export of hydrocarbons, and has acquired strategic importance for the energy security of the European Union. Although the first significant discoveries in Israeli and Cypriot waters date back to the period 2009-11, the importance of the region has grown as a result of the conflict in Ukraine (for its possible impact on the stability of Russian gas supplies) and of the deterioration of the security situation in Libya. To date, factors of a political and economic nature have narrowed down opportunities for cooperation for the exploitation and exportation of energy resources located in the region. However, the discovery of the supergiant gas field of Zohr off the coast of Egypt has the potential to reverse this trend at least in part, assuring Egypt's leadership in the creation of the eastern Mediterranean gas hub advocated by the European Commission. Yet only through the cooperation of all players will the region be able to achieve its entire energy potential, to the benefit of Europe's energy security, but especially of the stability and prosperity of the Levant.

The stalling of the Levant

More than five years after the discovery of hydrocarbons in the Israeli fields of Tamar and Leviathan, and in Cyprus' Aphrodite, the production of hydrocarbons in the eastern Mediterranean has not yet taken off. The continued regional conflicts, accompanied by internal problems in certain producing countries, have softened the initial enthusiasm of companies and governments interested in exploiting the resources located in the area. The conflict between the Turkish Republic of Northern Cyprus, supported only by the government of Ankara, and the Republic of Cyprus, recognized by the international community, is the most striking example of this. Specifically, the territorial claims of Northern Cyprus over the southeastern part of the Cypriot territorial waters—where most energy sources appears to be located—discourage the full development of the area. This is accompanied by frictions, albeit minor ones, between Cyprus and Israel for the exploitation of the Cypriot reservoir of Aphrodite, a residual part of which would fall into Israeli waters. Equally thorny is the territorial dispute between Lebanon and Israel, which are competing for a total of 850 square kilometers of seabed. Although there is no concrete evidence of resources in the area, Beirut's decision to put exploration blocks up for tender in those areas has fueled the tension between the parties, which are formally still in conflict. However, most of the Israeli problems originate internally. In recent years, the government has encountered strong resistance to the approval of a regulatory framework that balances the needs for national energy security and the desire to benefit—both politically and financially—from the country's new status as a hydrocarbons exporter. All this comes at the expense of the rapid development of its deposits.

Egyptian acceleration

The situation in Egypt is very different. The country is currently the second largest African producer, behind Algeria and, since 2015, regional and global gas exporter. Recently, the prospect of becoming a net importer of natural gas dependent on Israel—the traditional target market for Egyptian gas—to meet growing domestic consumption, has fueled a kind of paranoia in the North African country. The discovery of the supergiant gas field of Zohr, however, instantly turned Cairo's psychosis into the possibility of becoming the cornerstone of the eastern Mediterranean gas. The 850 billion cubic meters contained in the field discovered by Eni in August 2015, in fact, can be exported to international markets (including those of Europe) thanks to the existing liquefaction infrastructure in Damietta and Idku, currently non-operational due to the suspension of Egyptian LNG exports. All this is provided that the production of the supergiant gas field is not completely absorbed by Egypt's domestic consumption. If, in fact, the gas from Zohr can be used to quench Egypt's thirst for energy and promote the country's economic recovery, the new bonanza will not slow down the energy reform process (i.e., subsidy cuts, development of renewables) launched by the government in past years.

Turkish isolation

Countering Egypt's enthusiasm is the status of isolation that Turkey confronts. In recent years, the Turkish government's foreign policy choices have in fact alienated the country from its regional neighbors. In addition to its historical rivalry with Greece and the Republic of Cyprus, since 2010 even relations with Israel have deteriorated significantly. In this light, the creation of the Jerusalem-Nicosia-Athens axis, sanctioned by the Cyprus agreement of January 28, 2016, seeks to overcome the brakes applied by Ankara with its all-out support of the claims of the Turkish Republic of Northern Cyprus on offshore gas resources. At the same time, following the rise to power of General al-Sisi in Egypt and the divergent positions on the Syrian crisis, bilateral relations between Ankara and Cairo have rapidly degraded. In this context of tension, the discovery of Zohr further reduces Turkey's ability to slow down exploitation of natural gas in the eastern Mediterranean. Open hostility in the region adds to the deterioration of its relations with Russia—Turkey's top gas supplier, which places the country's energy security at serious risk. Within a few months, Ankara has gone from being the hub of Moscow's energy strategy thanks to the Turkish Stream project (suspended following the shooting down of Russian jet Sukhoi-24) to becoming Russia's main geopolitical rival in the region. In this context, re-weaving the fabric of the energy cooperation in the eastern Mediterranean—as strongly advocated by Brussels—could become an inviting option, if not necessary, for Ankara. However, despite some opening messages with regard to Israel and Egypt, Turkey's intransigence on some points such as Cyprus and Syria still seems difficult to smooth out, to the detriment of energy cooperation processes in the region.

Nicolò Sartori is Senior Fellow and Head of the Energy Program of the IAI, where he coordinates projects on the issues of energy security, with a focus on the external dimension of Italian and European energy policy.

MARKET DEVELOPMENTS

Is the worst over?

Prepared by Market Scenarios and Long-Term Strategic Options – Oil (SMOS/OIL) – Eni

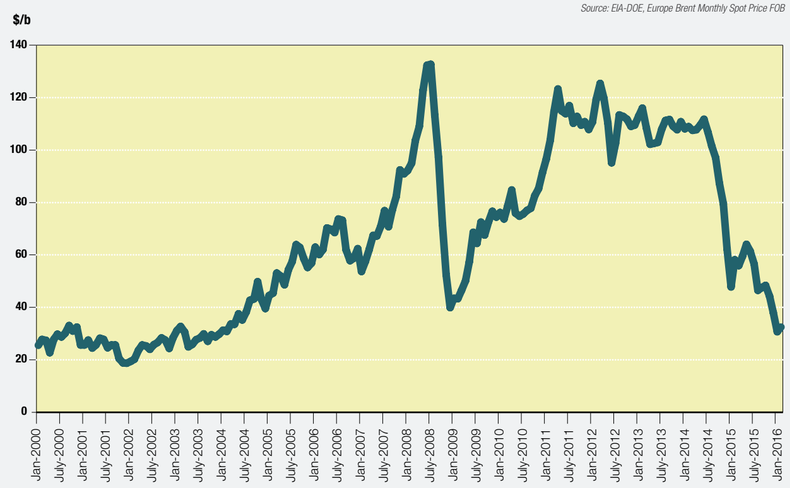
OIL PRICES

An agreement between the major producers drove up the price of crude oil following the bottom of mid-January

The price of Brent crude in 2015 was USD $52/b, roughly half its level of the previous year ($99/b). The decline in crude oil prices is linked to excess supply, which has reached its highest ever level (+2 Mb/d). At the OPEC meeting on December 4, 2015, the member countries failed to reach an agreement on the production ceiling for the first time since 1990 and sanctioned the free-ceiling strategy, amplifying internal differences. The Cartel has abandoned its historic role as swing producer in defense of its market share. OPEC production exceeds 32 Mb/d, with Saudi Arabia accounting for over 10 Mb/d and Iraq over 4 Mb/d. Russia also continues to drive production to maximum levels and the European market is becoming a stage for a real price war between Russian and Middle Eastern sour oil. U.S. production is slowing its pace with tight oil which, at the end of 2015, declined by 0.5 Mb/d from its peak in March. Continuously rising crude oil stocks were, by year-end, at the highest levels of the last five years in both the U.S. and Europe. 2016 opened with a further decrease in Brent, which in January fell below $30/b, reaching the lowest level of the last 12 years. The price is retreating in the wake of the downturn of the Chinese stock market and the impact of the re-entry of Iran which, after implementation day (January 16), was released from the embargo. The downward revision of the global GDP for 2016 by the IMF is also a bearish sign. Since mid-February, the price has recovered rapidly in the expectation of OPEC/Non-OPEC cooperation in support of prices. On February 16, Saudi Arabia, Russia, Qatar and Venezuela reached an agreement in Doha, the first in 15 years, to "freeze" production at January levels. Financial markets are returning to bet on a price increase: non-commercial operators' exposure to purchases of ICE Brent is continuously increasing, with net long positions the highest since May 2015. The up-trend is also supported by the continuous capex cuts, especially by operators in U.S. tight oil. Oil rigs on the American market are down to below 400, the lowest total since December 2009, and the U.S. Department of Energy expects a fall in U.S. production by 0.8 Mb/d in 2016.

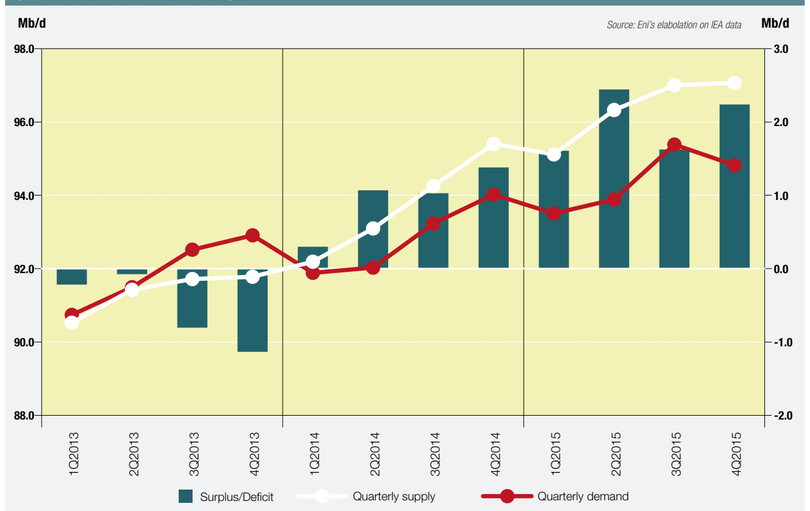
BRENT PRICE

Source: EIA-DOE, Europe Brent Monthly Spot Price FOB



SUPPLY DEMAND BALANCE

Source: Eni's elabolation on IEA data

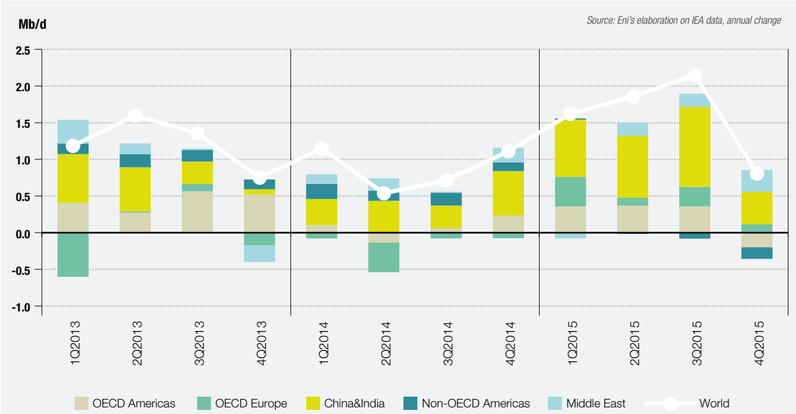


OIL DEMAND

In the fourth quarter of 2015, global demand revealed a halt compared with the first three quarters (+0.8 Mb/d vs. +1.8 Mb/d) due to a more temperate winter in the northern hemisphere and a more critical macroeconomic context in China, Brazil, Russia and in other economies dependent on exports of raw materials. Consumption in the America OECD region has returned to negative ground (-0.2 Mb/d) after three quarters of continuous growth due to the U.S. slowdown. In November, the first reduction in industrial production was recorded since the recession of 2009. The deterioration of the manufacturing industry is reflected by the return to negative territory of the Manufacturing Purchasing Managers' Index in November and December and the fall in consumption of gasoline/diesel for industrial purposes and commercial transport. In addition to this is an increase in gasoline consumption in line with seasonality, which cannot offset the decline in other products. The decline in consumption in the Asia Oceania OECD region (-0.1 Mb/d) is linked to reduced use of oil as fuel in thermoelectric power plants in Japan, due to the reopening of part of the nuclear capacity and to a lower demand for naphtha due to the phasing out of some plants. The level of non-OECD consumption reveals a more moderate growth compared with the previous quarter (+1 Mb/d vs. +1.4 Mb/d) while remaining above the OECD level at 2.5 Mb/d. In China (23% of non-OECD) growth in demand has also slowed down (+0.1 Mb/d in the fourth quarter vs. +0.7 Mb/d in the first 9 months). The Chinese manufacturing activity index (Caixin/Markitt PMI) reports a persistent reduction in economic activity with a negative impact on consumption of diesel and oil as fuel. Also weighing negatively on diesel is the lower transaction of coal loads over rubber. Gasoline and jet kerosene are more dynamic due to the greater dependence on private consumption, which is acquiring increasing weight in the formation of GDP at the expense of the investment and export component.
Overall, 2015 closed with a rebound in global consumption of 1.6 Mb/d, the highest since 2010, with gasoline accounting for over half of the increase, and oil/diesel for slightly less than 30%.

ANNUAL DEMAND CHANGE BY SELECTED AREAS

Source: Eni's elaboration on IEA data, annual change



OIL SUPPLY

In the fourth quarter of 2015, global oil supply exceeded 97 Mb/d, with a surplus of 2.2 Mb/d. The growth in crude oil production slowed down, recording a much lower increase than in recent quarters: non-OPEC stopped, revealing a decline in December for the first time since 2012, while OPEC continued to report new production records (+1.2 Mb/d compared with the fourth quarter of 2014).
The slowdown in non-OPEC production is linked to the withdrawal of the U.S. after over four year of uninterrupted growth: the decline in oil prices and the sharp reduction in oil rigs, which began in October 2014, caused U.S. production to decrease. In contrast, Russia drove crude oil production throughout 2015 to the maximum, remaining above 10.6 Mb/d, also an outcome of the lower costs related to the weakness of the ruble.
Unexpected growth in production occurred in the UK and Norway, after years of decline. The development of the new fields in the North Sea confirms the positive trend even in the final quarter (+2.2 Mb/d).
Mexico's production declined, while Brazil's output stabilized following its sustained growth in the first part of the year.
The change in OPEC policy led to a continuous increase in production, with Saudi Arabia and Iraq in the lead at historic highs. One of the factors driving Saudi production is the maintenance of exports above 7 Mb/d and increased domestic consumption.
In terms of Iraq, further increases in exports are expected as of the second quarter of 2016 with the activation of the fifth terminal by the south of the country. Important critical issues remain on the Libyan front.
The post-embargo recovery of Iranian volumes that concerns the markets will be contained in the short term and related to that country's effective capacity to attract investment from IOCs.

ANNUAL CRUDE SUPPLY CHANGE

Source: Eni's elaboration on IEA data, annual change