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The exploration, development and perspective of oil and gas in the Black Sea region

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ABSTRACT

The Black Sea region, a large horizon ready to open, ready to explore, ready to show her energy, her power and opportunities. But how we are preparing for this? It is a high competition between all the "actors" implicated in this field. The industry was informed to this potential resources by a major study undertaken by Purvin and Gertz in 2011, which predicted the development of a Romanian offshore industry and now exist many recently studies that confirmed the "black resources" of the Black Sea. We all know about the emergence of shale gas in Europe, in the last years, because is increasing evidence of a more united approach on energy, so the exploration and development of gas reserves in the Black Sea is an optimal alternative to supply gas from the Caspian to south-eastern Europe.

But this good alternative implicates problems generated by costs, transportation and security of the very long pipelines that will pass through several countries till reaching their final destination.

I try in this paper to pay attention on the main objective in the Black Sea Region, in this offshore field, that required the cooperation and sustainability from part of European Union and all its members' state and countries situated in the Black Sea, Mediterranean Sea or Caspian Sea.

1. Introduction

What is the picture of oil and gas in the World? The all world is highly dependent on oil – it powers transport, heats and cools buildings, creates industrial and domestic chemicals and provides the feedstock for many materials and clothing.

Transport uses 60 per cent of oil production, mostly to fuel cars and trucks. Oil is a nonrenewable resource that is used at a rate of 100 million barrels a day at present and some estimates are that this will double by 2025.

I will try to analyze the exploration, development and perspective of oil and gas in the Black Sea region.

In the Black Sea exist various and substantial opportunities in investing in offshore operations. Primarily, companies considering such investments can tap into new and potentially very profitable sources of oil and gas. The geographic vicinity to Western Europe and access to these and other nearby markets presents a great advantage for entering offshore in the Black Sea.

But which are the risks to be implicated in this field? The bad news is that exist important risks, which potential investors and companies operating in this sector need to be aware of – inadequate infrastructure, lack of necessary legislation and regulation, as well as frequent regulatory changes, the weak rule of law and widespread corruption also add to the challenges facing companies operating in the Black Sea region.

The good news is that in the past years, the regional cooperation in the Black Sea region has improved substantially and there are many regional initiatives that could provide good platforms for developing closer cooperation, both at political and economic levels.

The countries from the Black Sea region must to use the existing structure of regional organisations and forums to advance regional cooperation. The cooperation in the region is is very important to the development and the good regional relations.

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The entire Black Sea region can benefit from the development of offshore oil and gas operations and all the projects, so this could strengthen regional cooperation.

The Black Sea Region is like a liant of east-west and north-south hydrocarbon transit and is thus a hub connecting Europe, Russia, Central Asia, and the Middle East.

Exist in Europe a strong competition, but it is important for European Union to elaborate a strategy to develop the traffic to the South of the Mediterranean, particularly with the Middle East and with the Black Sea countries, with Ukraine and Russia.

2. Key Points in the Black Sea Region Offshore Development

In my opinion, the key points of this process are a good strategy adapted to the need of logistics, the privatization of port activities that suppose many investments in the infrastructure of the Black Sea harbor system and very important, a logistic or productive installation from the society inter – harbor and intermodal.

We know that Russia, the Middle East, North Africa, and Norway are currently the largest suppliers gas, with Norway as a partial exception, carry substantial risks of supply disruption, competition, and, in some cases, the exercise of market power as a political weapon[3].

Caspian hydrocarbons are conveyed to European markets by a combination of pipeline, rail, and tanker. Geography, politics, and the economics of hydrocarbon transport compel European energy consumers to seek transit routes for Caspian oil and natural gas through and around the Black Sea. In addition, Turkey's need for supply diversification leads it to procure natural gas from Russia, through the Black Sea, and Armenia's political situation has required it to receive Russian natural gas via Georgia.

The Black Sea region is like a link of east-west and north-south hydrocarbon transit – the hub connecting Europe, Russia, Central Asia, and the Middle East.

Exist various posibilities for the caspian hydrocarbons wich are and will be delivered to Europe, from Caspian Sea terminals, along several principal pathways:

- Rail or pipeline to an eastern Black Sea port, thentanker to a western Black Sea port, pipeline to a European terminal;
- Pipeline overland to a European terminal;
- Tanker via the Bosphorus to a European Mediterranean port, pipeline to a European terminal;
- Tanker to a southwestern Black Sea port, pipeline bypassing the Bosphorus to a Turkish Aegean port, tanker to a European Mediterranean port, pipeline to a European terminal;
- Pipeline to a Turkish Mediterranean port, tanker to a European Mediterranean port, pipeline to a European terminal;
- Pipeline to a Russian Black Sea terminal, submarine pipeline to a Turkish Black Sea terminal, pipeline to a European terminal;
- Pipeline to an eastern Black Sea terminal, submarine pipeline to a western Black Sea terminal, pipeline to a European terminal.

This palette of many ways reflects, in part, the need for the diversification of supply sources and transit routes, competition among suppliers and transit countries to control delivery to Europe, concerns about ship congestion and environmental risks in the Black Sea, especially in the Bosphorus, and the insufficient capacity of the least expensive, simplest routes. Diversification has helped to reduce traffic through the Bosphorus, but Caspian production is increasing rapidly and new transit capacity will be needed.

A transportation system in the South Caucasus is already operating, shipping oil and oil products, as well as other mineral resources from the region to European markets, and is also delivering equipment and other goods from Europe and other areas of the world to countries of the Caspian and the South Caucasus.

Bulgaria and Romania both carry gas south from Russia to Turkey and are involved in the Nabucco project of natural gas pipeline. While filling Nabucco with Caspian (or Middle Eastern, or Egyptian) natural gas would reduce Europe's dependence on Russia, it is also spurring Russia to increase delivery to Europe by many means.

What started off as a rivalry between two highly promising large gas pipeline projects, the EU-backed Nabucco and the Russian-backed South Stream, seemed to have finished ingloriously for both parties and projects?

Specifically, Russia officially dropped the South Stream natural gas pipeline project in late 2014 due to complications related to regulatory challenges and non-compliance with the EU's Third Energy Package, particularly in the area of ownership unbundling which would have required the separation of Russian companies' generation and sale operations from their transmission networks.

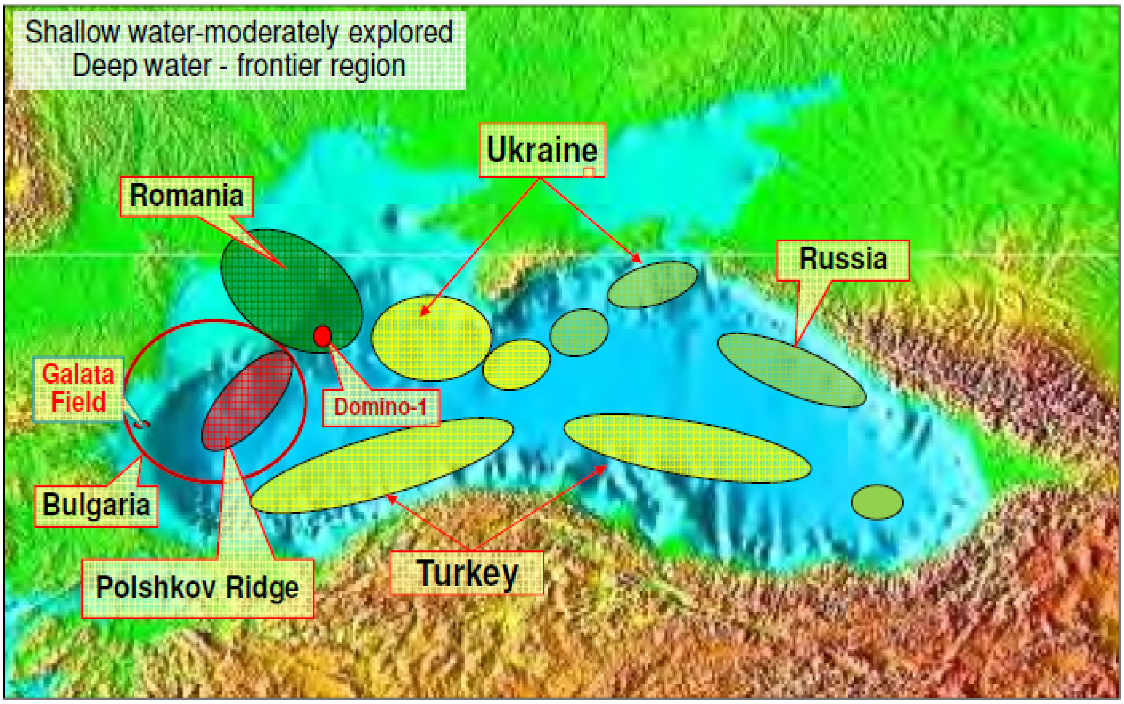
The Black Sea region is known throughout history that is an area of various interests, the most important strategic east-west corridors between Asia and Europe.

The major factors, like political tension, economic interest and military aspirations put their footprint in this global picture and the region has become one of the most important crossroads through which both Russia and the European Union are trying to exert energy sector control, particularly in the area of natural gas.

The broader Black Sea Region, encompassing the twelve Black Sea Economic Cooperation member states (Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Russia, Serbia, Turkey and Ukraine) has had more than

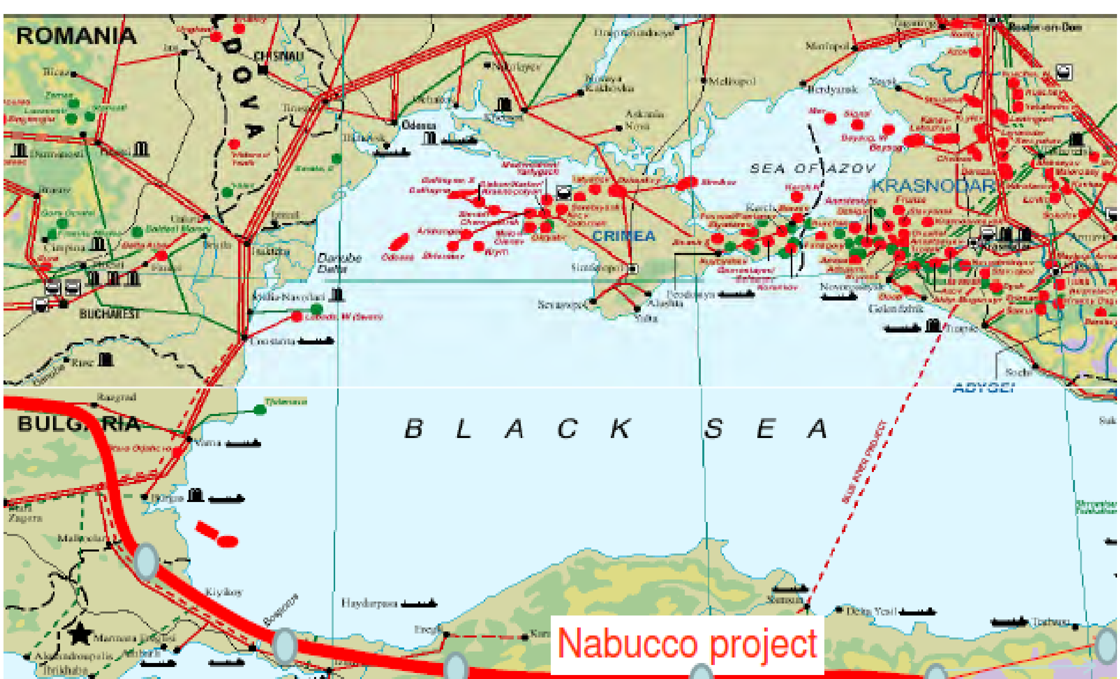
[3] Energy Information Administration, Official Energy Statistics of the U.S. Government. Country Analysis Briefs: European Union. http://www.eia.doe.gov/emeu/cabs/euro.html

Figure 1: Western Black Sea basin– Deep sea.



Source: Presentation IENE Conference Thessaloniki, 30-31 May 2012, ICM Petroleum Management.

Figure 2: Black Sea area pipelines – gas.



Source: Presentation IENE Conference Thessaloniki, 30-31 May 2012, ICM Petroleum Management.

its fair share of proposed oil pipeline projects, reflecting the importance of this region for the European energy sector.

3. Oil and Gas Export – Opportunities and Cooperation between Black Sea and Mediterrean Sea

The Black Sea area always has been characterized by various attempts to systematize and upgrade its regional cooperation.

Regional cooperation has intended to develop by different actors like: the Organization of the Black Sea Economic Cooperation (BSEC), Community of Democratic Choice (CDC), and the Black Sea Forum for Partnership and Dialogue – a Romanian-sponsored initiative, the Organization for Democracy and Economic Development (GUAM), the Operation Black Sea Harmony (OBSH) or the Black Sea Naval Cooperation Task Group (BLACKSEAFOR). In fact, the problems faced by these regional organizations are multiple, falling easily in the category of divided, declaratory or duplicating regional cooperation patterns or articles of the rules and strategy.

In the last years, these organizations have become like vehicles for certain regional powers such as Russia and Turkey to assert their interests under a legitimizing institutional umbrella.

The more efficient organization was BSEC that has proved to be confidence-building forum for discussion of common interests, but with some deficiencies like over-bureaucratization and some tense bilateral relationships.

The regionalization of the Black Sea Region should be constructed with the base of building important two-way accommodating bridges between the major players in the Black Sea Region, combining the mechanisms of regional dialogue with top-down international initiatives as main driving forces of the cooperation process.

The Black Sea Region has emerged as a key issue for recasting a new balance of power between Russia and the West.

But which sector is most visible and affected? The energy sector is the sector in the Black Sea Region where the geostrategic implications for the EU are most visible and urgent.

The EU is dependent on oil and gas imports from Russia, the Middle East and North Africa, up to an estimated 70% of its total supply by the year 2030. In terms of the EU Eastern Member states, the data displays an even worst picture, with Lithuania and its industry being almost entirely dependent upon Russian energy resources and Bulgaria getting over 90% of its gas from the Russian colossus Gazprom.

But what about the Mediterranean Sea, a region with a visible economic success reached by the Mediterranean ports that represent a strong competition and in the same time a great opportunity to develop the cooperation between the two regions?

First of all it is necessary to improve the ports constantly with the new infrastructure, logistic base and services offered to can attract new quotas of traffic.

Exports of crude oil from Black Sea ports averaging at over 100 million tons a year are expected to continue to rise, resulting in continued seaborne transits via the Bosporus and increased use of eastern Mediterranean ports linked to new pipelines intended to bypass the Bosporus.

The development of the pipeline will increase oil exports from Eastern Mediterranean load terminals, but, if Black Sea exports continue to increase, this may not result in a significant fall in oil exported through the Bosporus. The Eastern Mediterranean will see an increase in the density of crude oil tanker deployment.

The most significant change in overall traffic patterns in the Mediterranean in the coming years will be the development of export routes for crude oil from the Caspian region, which is currently shipped predominantly via Black Sea ports through the Bosporus. The Bosporus forms the boundary between the Black and Mediterranean Seas and is the only maritime access route between the two. All crude oil shipped by sea out of the Black Sea consequently has to pass through the Bosporus. Tankers up to 165,000 DWT currently transit the Bosporus.

Right now, there are 16 offshore rigs working in the waters of both the Mediterranean and the Black Sea. While most of these rigs are drilling in the waters offshore North Africa, there are also rigs drilling in Italy and Croatia, in the Mediterranean, as well as Romania, Bulgaria, Turkey and the Ukraine in the Black Sea[4].

Furthermore, the drilling in these regions is not restricted to shallow waters. While there are 13 jackups drilling in the Mediterranean and Black Sea, there are also two mid-water rigs, a drillship and a semisub, as well as a semisub rated for ultra-deepwaters. Two of the deeper water rigs are working in Libya, and one is working in the Mediterranean waters offshore Egypt.

Currently there are four offshore rigs drilling in the waters of the Black Sea. A relatively unexplored area, the Black Sea has become more of a reality in the last decade. In fact, in 2000 there was only one rig drilling in the region, making the current number of rigs a huge increase that has helped to boost production from the region.

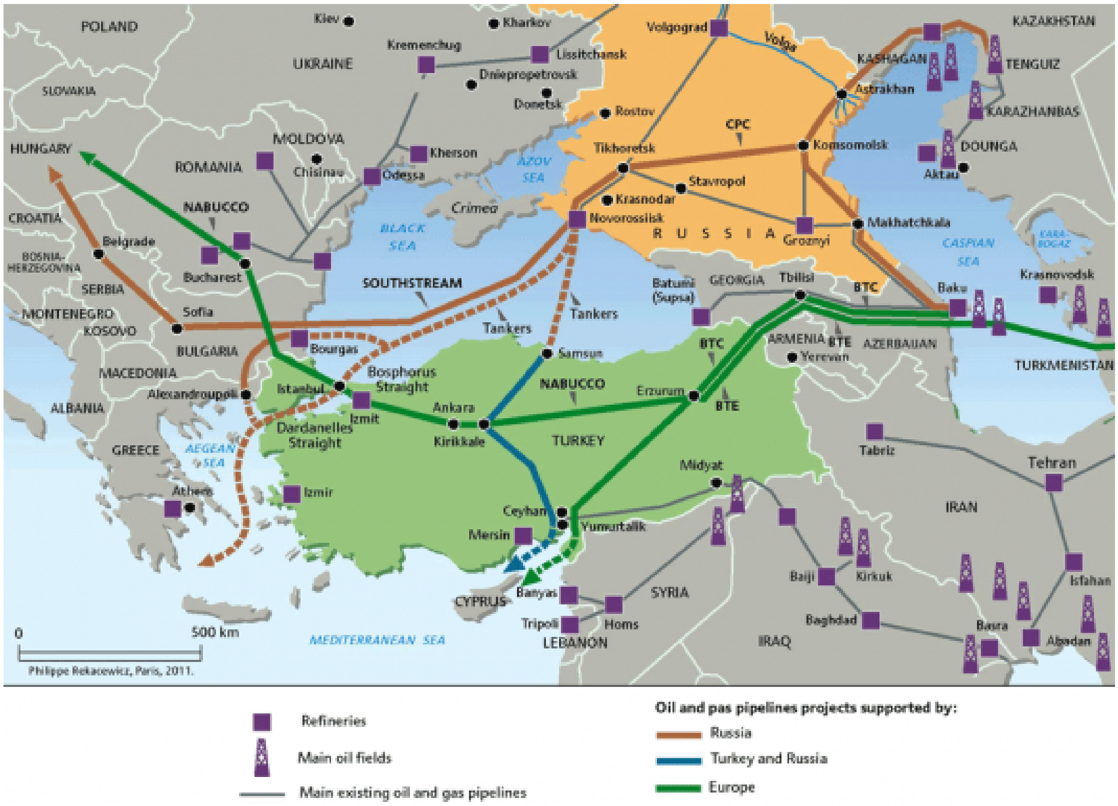
With a concerted focus on exploration and production in the Black Sea, Melrose Resources currently employs the Prometeu jackup in the waters offshore Bulgaria. In 2004, Melrose successfully brought on-stream the first offshore gas development in Bulgaria, the Galata field. In 2008, the company made two nearby discoveries, the Kaliakra and the Kavara fields, which will be developed as subsea tie-backs to the Galata infrastructure in 2010. Exploratory drilling continues on the block. Contracted for one well, the Prometeu contract only spans two months.

The states neighboring the Black Sea do not have significant proved reserves of oil and gas. There is a potential of the Black Sea continental shelf in the now disputed area between Romania and Ukraine related to the Serpents' Island that is supposed to count for about 100 billion cubic meters for gas and to about 10 billion tons for oil, quite insignificant as against the world reserves or even the Caspian potential.

The main problems are represented by the transportation and security of the very long pipelines that will pass through several countries till reaching their final destination.

[4] Analysis: Drilling Picks Up in the Mediterranean and Black Seas, `http://www.rigzone.com`

Figure 3: Pipeline chess across the Black Sea.



Source: www.mondediplo.com

Figure 4: Oil and natural gas drilling rig.

Source: GSF Development Driller II, Transocean, Black Sea, Constantza Port. ©Mihailovici, C.

3.1. Alternative Pipeline Projects and Security in the Region

The European Union now seems poised to offer its support behind the Southern Gas Corridor project which would include three separate but interconnected segments of one gas pipeline corridor:

1. The South Caucasus Pipeline (in function);
2. The Trans-Anatolian Natural Gas Pipeline – TANAP (expected to be constructed by 2018);
3. The Trans Adriatic Pipeline – TAP (expected to be constructed by 2018).

The Southern Gas Corridor will ultimately transport natural gas from the Shah Denis gas field in Azerbaijan, through Georgia, Turkey, Greece, Albania and the Adriatic Sea to Italy. Moreover, the corridor will have the possibility for further connections to gas networks in South Eastern, Central and Western Europe.

Russia is looking with some regrets to the Southern Gas Corridor project which is under development and it has indicated that it will attempt to effectuate the suggested natural gas pipeline project from Russia to Turkey across the Black Sea and then to the Turkish-Greek border.

The suggested annual capacity for this pipeline is 63 billion cubic meters (same as that which was planned for the South

Stream project). The projected pipeline remains without an official name as of yet, however it has been referred to as the Turkish Stream in the media. What about the security in this sector?

In late 2010, the European Commission issued a communication on safety in the offshore oil drilling, in order to develop the EU legislative provisions relating to oil platforms. The main objective of such measures is to ensure the highest safety standards in the world and also avoid environmental disasters such as the Gulf of Mexico.

During March-May 2011 it was launched a public consultation session aims reconsidered EU legal framework and current practices on safety of offshore exploration and production of oil and natural gas. "Safety is non-negotiable. We must ensure that in European waters will never be a disaster similar to the Gulf of Mexico. That is why we propose that best practices already existing in Europe will become the standard throughout the European Union[5]".

With multiple projects upcoming and prolific production existing, both the Mediterranean and the Black Sea are logging more rig time every year. A unique offshore region, the Mediterranean is bordered by countries in both the European Union and Northern Africa.

4. Conclusions

In the last years, the strategic situation for the European region is being impacted by several major developments, but exist many factors that influences all the activities in this area and one of them is the political factor in European countries, which is still a powerful one.

In this situation we assist to a greater efforts and increased focus by individual EU members on the national level, and a substantial switch to bilateral international relationships, reaching beyond the common framework of the EU.

In the context of Europe's strategic shifts, the Black Sea-Caspian Region is emerging as an area of strategic importance for the long-term security and stability of Europe and the key factor for long-term security and stability is energy.

Russia will continue to play the dominant role of the supplier of energy for Europe, but the Caspian region has the potential to mitigate some of the emerging challenges, and the Caucasus, the Black Sea area, and Turkey are key transit areas.

Europe must to analyze and to capitalize in an efficient way its Eastern strategies and make new strategies, in order to diversify its sources of energy, make its economy more competitive, engage with a cheap and well-educated labor force from Eastern Europe – including the Caucasus and to start securing markets in these countries that exhibit substantial growth potential.

Europe needs a deep level of integration with the Black Sea-Caspian region to meet its own needs of long-term political and economic security.

The Black Sea region is an important part of today's energy geopolitics. The region has a strong Euro-Atlantic inclination, especially after the 'colour revolutions' in Georgia and Ukraine.

[5]European Commissioner for Energy, Günther Oettinger

The European Union must secure gas from the area to supplement EU energy security but for this must to develop more gas pipelines. Black Sea states have major goals in the energy sector, from Russia's huge production and transit interests, to Turkey's ambition to become Europe's fourth energy supply "artery", to Georgia, Romania and Ukraine's roles in oil and gas transits. It is important for the EU to develop mechanisms to increase solidarity.

The crisis in relations between Russia and Ukraine is very serious. It will have long-term consequences for bilateral relations, and for Russia's and Ukraine's relations with Europe, but with the intervention of EU and financial guarantees to resolve the gas crisis , we will have positive result in this area.

I think that the main objective for the European Union is to exchange the best practices in the European and international context, as well as to create a framework for co-operation and dialogue with the Mediterranean and Black Sea partners, to encourage and sustain this cooperation.

The principal and common interests, especially on the issue of the transportation of the energy resources to the world markets must to be the preoccupation of all the actors implicates. At this point, however, neither of the constituent sub-regions of this broader area can function as a single and meaningful functioning economic region within the global economic system involved Mediterranean Sea, Black Sea and also Caspian Sea, with their harbors.

In conclusion, the Black Sea region is a highly prospective source of oil and gas both locally and for the rest of Europe, and also a prospective transit corridor for Russian gas and may therefore play an integral role in ensuring future security of supply for the whole continent.

We will be the witnesses for quickly change over the next 5-10 years in the Black Sea energy perspective, not only that will become transport hubs for oil and natural gas supplies moving into Europe but also will boost their own hydrocarbon output. Morover, Black Sea actions having seriously effects on Southeast Europe, Russia, the Caspian Sea, Middle East, and ultimately the European consuming markets.

On the 27th-28th of January 2016 in Vienna, from speeding up exploration projects to reducing investment risk, from overcoming regulatory hurdles to increasing foreign investments, all the critical issues to move forward and reveal the true potential of the Black Sea region, will be tackled. And in a variety of formats that support deals getting done, and partnerships being formed.

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