

Exploitation of hydrocarbon resources in Cyprus

Geostrategic and financial interests regarding gas exploration and exploitation

Regarding the natural Gas Production Prospects in the East Mediterranean, Cyprus, the third largest island in the Mediterranean Sea, is located at the crossroads of big international energy routes unifying Europe with the Middle East, Africa and the countries of the Gulf. Its status as a full Member State of the European Union offers security guarantees, while its economy is well known as an open services-oriented market. The geographical position of Cyprus and its worldwide financial activities highlight it as a strategic hub for business activities in the region and with a large potential for oil and gas trading.

The area is divided in five main offshore recognised hydrocarbon plays. These are the Eratosthenes Continental Block, the Levantine Basin, the Herodotus Basin, the Nile deep sea fan, the Eratosthenes Basin and the high anticlinorium and the top Eastern Cyprus Arc. The offshore deep water frontier exploration area extends to about 51,000km² being part of the exclusive economic zone and is located at the South of the island of Cyprus. The studies to be carried out in the area concern 13 exploration blocks. While the island continues to be a promising frontier for exploration with proven potential in the vicinity. The geostrategic factors which coincide with the development of Cyprus as new emerging hydrocarbon region or with offshore investments may be able to provide explanations regarding the large potential which is offered.

The Israeli experience regarding the exploitation of natural gas resources in the Eastern Mediterranean rim demonstrates that the demand for natural gas is increasing shortly and that a shortage is expected in 2012-2013 due to disruptions in Egyptian gas supply. Gas supply will be accelerated in 2014 with the commissioning of the Tamar field, discovered in 2000, 15km off coast near Ashkelon, produces considerable gas quantities (Est. deposit 1.2 TFC/33,5 BCM).

The natural export options are concentrated on the installation of a plant joining Israel and Cyprus and assisting fertilizers, methanol and petrochemicals. The initial estimates of a Leviathan – Vasilikos pipeline indicate a length of 200 km, where the pipeline crosses water depth of more than 2 km. The construction and the development cost of the relevant pipeline should reach 3,5 billion dollars, whereas the cost of the plant should raise from 8 to 12 billion dollars.

Based on EU reports, Cyprus Republic is classified as an emergent market for natural gas and also as an isolated market. Unlike the electricity sector, which has already been liberalised, the gas sector according to the last amendment of the law regulating the natural gas market, as well as the relevant decisions of the Council of Ministers, shall be fully monopolistic for a minimal period of 20 years.

DEFA, the Natural Gas Public Company, which is controlled by the State, has been appointed by Cyprus Government, as the sole importer and distributor of any form of natural gas in Cyprus.

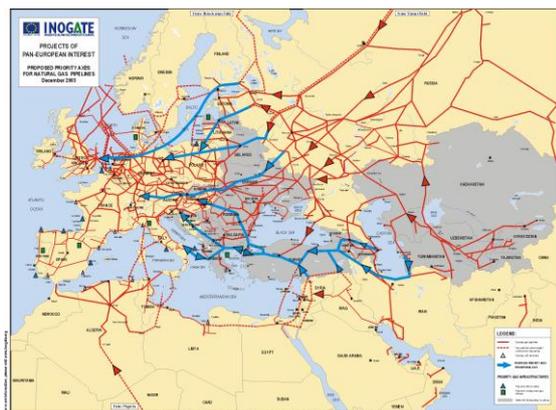
The relevant recent licensing rounds in the area concern 3 countries. They concern firstly Egypt, where the creation of a new joint venture between Dana Petroleum and the Egyptian General Petroleum Corporation aims at the production of oil and gas through a lease in the Gulf of Suez after approval by the Egyptian Ministry of Petroleum. Egypt is offering 15 blocks covering over 18.000 km² with bids to be submitted by January 31, 2012. Second one is Algeria, which proceeds with the signature of contracts for the exploration and exploitation in two blocks including the Rhourde Rouni Block by Alnaft, the national agency for the development of hydrocarbon resources. Last one, is Iraq, where twelve blocks are offered in the fourth licensing round with bidding in January 2012 for an area covered 87.200 km².

Energy resources	Old data		New policies scenario		Current policies scenario	
	1980	2009	2020	2035	2020	2035
Coal	1792	3294	4083	4101	4416	5419
Oil	3097	3987	4384	4645	4482	4992
Gas	1234	2539	3214	3928	3247	4206
Nuclear	186	703	929	1212	908	1054
Hydro	148	280	377	475	366	442
Biomass and waste	749	1230	1495	1911	1449	1707
Other renewables	12	99	287	690	256	481
Total	7219	12132	14769	16961	15124	18302

World primary energy demand by fuel and scenarios

If we analyse the several inter-regional gas trade activities, operations and movements in the area during the past years, it will be possible to realise that due to the economic crisis, the global market of gas supply, in 2009/2010 has seen a depressed gas demand, most heavily in the OECD and in Eastern Europe/Eurasia. The over-capacity was exacerbated by the investment in unconventional gas production in the USA, reducing the need of USA for gas importation.

Most long-term supply contracts into Europe and Asia provide with minimum volume commitments and most buyers under long-term supply contracts have reduced their purchases to the maximum should their contracts would allow it. Refusal of the pipeline suppliers to Europe, particularly Russia and Algeria to the calls of the reduction of their prices, have caused their exports to fall heavily in 2009. The gas trade scenario sees a decline of excess of supply capacity over demand, where the capacity utilisation rate moves from less than 75% in 2009 to around 80% before 2015. In this gas scenario, a global demand is driven strongly by Asia, whereas the gas demand growth in Europe is expected to recover more slowly. A new transport capacity will then cause the utilisation of pipeline capacity at pre-crisis levels to have no occurrence.



Regarding the Gas/LNG markets in Europe and the Eastern Mediterranean Region, natural gas increased its share in the global energy mix over the last 40 years, whereas according to latest International Energy Agency (IEA) analysis, the outlook for gas for the next 30 years is positive with the prospect of an even bigger share in the overall energy mix.

Gas demand in Europe is likely to reach nearly 670bcm in 2035 in the GAS Scenario of the IEA. The decreasing cost of LNG makes itself more competitive in more markets and especially where political instability takes place and it becomes a more attractive option than international pipelines that cross multiple borders.

Global demand for natural gas may be double by 2030, with LNG growing perhaps fivefold-driven by continued cost reduction. The IEA's analysis shows that the total capital costs for new LNG projects will increase by about 40% from the mid 1990s to 2010 with the greatest cost reduction being seen in projects to expand existing facilities and to build larger trains. Also, LNG shipping fleet will need to increase the number of operational ships as demands require.

Further, LNG allows access to otherwise inaccessible suppliers and can hence improve gas supply security. With the exception of Greece and Turkey, South-East Europe (SEE) lacks LNG import facilities and cannot benefit from availability of cargoes at what may be attractive prices.

LNG triggers an important role in European gas supply. Today, LNG represents approx 20% of European gas imports estimated of 300 BCM's in 2010. Total EU30 gas consumption for that year reached approx 560 BCM's. Main European LNG supply sources so far include Algeria, Nigeria, Libya and Egypt although of late Qatar has also started supplying LNG to European destinations.

Legal regulatory framework

The importance should be turned to the alignment of Cyprus Energy Policy with the EU policy and legislation, as the long term Strategic Plan of Cyprus is aligned with the European Union directives and is based on three main areas: security of supply, economic efficiency and environmental strategy. The security of supply reflects EU's ambition for diversification

of energy sources and parallel maintenance of natural security stocks. On the next step, the economic efficiency is connected with the decrease of the cost of energy and the cost of production. On the other hand, environmental strategy targets EU's objectives regarding the contribution by renewable energy sources to 13% by 2020 and the reduction of CO₂ emissions and the improvement of the power generation efficiency.

The European Commission insists on further liberalisation in the European energy markets in order to promote better energy prices through a variety of suppliers, to guarantee a fair chance of investment among small and big companies by giving them a fair access to the market, to encourage investment in power plants and allow the emissions trading scheme to work properly.

The harmonisation of Cyprus Law with EU Directives 2009/72 and 2009/73-3 is aiming at this end. The regulation is seeking to harmonise and strengthen the powers and duties of the national regulators in order for them to be able to issue binding decisions on companies and impose penalties, where is considered appropriate. Further, EU regulation is seeking to ensure the independence of the national regulators of industry interests and government intervention by having their own budgets and strict rules for management appointments. A platform of mutual cooperation should also be developed and implemented in order to facilitate cooperation among the totality of EU national regulators.

Regarding the legal and regulatory framework for hydrocarbons, their prospection exploration and exploitation and the oil and gas drilling activities as well as their implications on the business and environmental framework, those are regulated either by national laws or by EU regulations, international and bilateral agreements.

The hydrocarbon exploration licence is granted initially for up to three years with ability for two renewals of two years each. The activities authorised by the licence include geophysical surveys as well as exploration drilling. On each renewal, at least 25% of the initial area is relinquished and in case of a discovery, the licensee has the right to be granted an exploitation licence. The hydrocarbon exploitation licence is granted for an initial period of up to 25 years with ability for one renewal of up to 10 years.

At last, the production sharing contracts include a minimum exploration of work obligations, the definition of the work programs and of the budgets to be attributed as well as the specification of the appraisal and the development plans of the project. The relevant contracts should contain clauses regarding the profit sharing of the oil and gas production, the annual surface fees as well as the bonuses and every kind of training obligations included in the project.

As for the legal and regulatory framework on health and safety, the Republic of Cyprus has carried out a Strategic Environmental Assessment (SEA) to identify, describe and evaluate the likely significant effects on the environmental effects of implementing hydrocarbon exploration and exploitation activities. To this end, applicants are bound to follow and

comply with the results and recommendations of the Strategic Environmental Assessment (SEA).

As to the bilateral agreements regarding the maritime boundaries of the exclusive economic zone, relevant agreements may be examined and used regarding the legal framework governing the Arab Republic of Egypt, Lebanon and Israel. Relevant delimitation agreements of the EEZ have been signed in 2003 with Egypt, in 2007 with Lebanon and in 2010 with Israel. Further, a framework agreement concerning the development of cross-median line hydrocarbon resources has been signed with Arab Republic of Egypt as well as a confidentiality agreement in 2006.

Granting rights to hydrocarbons and financing of gas drilling operations

Exploitation of hydrocarbons usually comes with the granting of a licence and the production of sharing agreements that secure the holder with the 'licence rights'. The three main kinds of licences can be distinguished during the formal licencing rounds organised by the states possessing oil and gas natural resources. These include the three stages during the life line of an oil and gas energy project: Oil and gas exploration licence, oil and gas prospecting licence, oil and gas mining licence, where exclusive rights of exploration, extraction and production may be given to a limited number of companies to act and implement their projects on the contracted area for a certain number of years.

The exploration allows surveying and some drilling for a limited period and upon discovery of a commercial reserve. The holder of this licence is able to apply for the production, which permits the extraction of the petroleum, without necessarily being bound to authorise the related infrastructure, as pipelines, which will be dealt with by a separate regime.

The essential terms governing the licences' regime deal with questions related to the relationship of the subject with the project. Matters which concern licences mainly focus on duration and the possibility of renewal or extension of the relevant licences as well as on the contrary the process for its abandonment. Further, the restrictions on assignment and the relinquishment of areas fixed after the statutory period have great importance, as for the content and the power extracted from the licencing contract. Last, the right to revoke the licence by the state or the responsible authorities is of considerable importance, as it determines the borders of the state interference in the project and the delimitations of the State's force to intervene in several stages of the project's development and implementation.

Financing of the exploration, extraction and production stages of an oil and gas project should be secured by the use of the participation in the licence. Any assignment of the transfer should only be allowed after strict authorisation of the relevant governmental authority which in the present case would be the Ministry of Trade. In parallel this should mean that the receiver will not be able to proceed with any transfer of the licence, limiting the effect of security in case of enforcement. The financing of the exploration, extraction and production in a second stage, presupposes a cash call financing. In order for this stage to be

completed, lending against sales and marketing receivables, which includes assignment and also a security over participation is considered a necessary ingredient.

Further, the financing exploration and production should be moved in two main axes, which is the reserve-based lending and the stand alone field financing. On the one hand, the reserve-based lending triggers a possible financing, where reserves are discovered even though not proved. Possible reserves are also taken into serious consideration. Security should be taken over the field agreement and assets used in the exploration and lenders will look for an assignment of the receivables. On the other hand, under the stand-alone field financing, lending can also be arranged in relation to the production, either on a continuous basis or for separate cargoes, which more often is structured through trading companies through pre-payment agreements.

The life cycle of financing for oil and gas companies covers three broad faces that is firstly, the exploration face, where preparation is the key to developing a successful strategy. Further, targeting the correct partners' increases returns and reduces time scales while functioning with the robust process drives value and encourages healthy competition. The second is the development face that is based on the adoption of a conservative oil or gas price assumption with the relevant discount rates included. At this stage, banks use a conservative production profile and they perform their own technical due diligence. Thirdly, the last face consists of the production and the development of other mechanisms which try to raise finance involving sharing equities, as for example, net profit interests, profit participating loans or convertible bonds.

The perspectives of the use of the natural gas resources of Cyprus will make a substantial contribution to Europe's energy security and will radically contribute to the development of the whole South-Eastern Mediterranean region and the increase of the geopolitical stability of the area. These effects could turn the region into a highly developed area with sustainably increased economy and development. As a result of this development further bilateral relationships and synergies may be developed with international investors and other interested countries within the international scene.

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