AKBN

AGJENCIA KOMBETARE E BURIMEVE NATYRORE

NATIONAL AGENCY OF NATURAL RESOURCES

NATIONAL AGENCY OF NATURAL RESOURCES

PETROLEUM EXPLORATION OPPORTUNITIES IN ALBANIA

Beograd, September 2009

ALBANIA

Albania is located in the Western part of the Balkan Peninsula, at the Eastern coasts of Adriatic and Ionian seas.

Albania has common national borders with Montenegro (north, north west), Kosovo (north east), Macedonia (east), Greece (south east, south).

Albania is characterized by a Mediterranean climate, consisting of hot and dry summer, with long days of sunshine, mild and wet winter.

ALBANIA

State Organization:	**Parliamentary Republic**
Population:	**3.170 million***
Area:	**28 000 km²**
Capital city:	**Tirana**
Official language:	**Albanian**
Currency:	**Lek**

Hydrocarbon occurrence

Albania was established as a Hydrocarbon bearing province as early as Roman times, when heavy oil and asphalts of Selenica mine were used for lamps.

In 1918 the first oil discovery was made in Oligocene flysch in Drashovica.

In 1927 and 1928, respectively, Kucova and Patosi oil fields, related to Messinian clastic reservoirs, were discovered. Marinza, as the biggest oil field in Albania, related to Messinian-Tortonian clastics reservoirs, was discovered in 1957.

Visoka, as the first oil field related to carbonate reservoirs, discovered in 1963, was followed by other discoveries such as: Gorishti (1965), Ballshi (1966), Finiq-Krane (1974), Cakran-Mollaj (1977), Amonica (1980) and Delvina (1987).

Hydrocarbon occurrence

With the first Gas discovery (1963) in the Tortonian sandstone layers of Divjaka, other gas fields respectively: Frakulla (1972), Ballaj 1983, Povelca and Panaja gas fields in 1987 and Durres (1988) were discovered.

The A4-1x well drilled in 1993 by AGIP and Chevron (Adriatiku-4 offshore) proved oil (condensate) and gas bearing in Messinian clastic reservoir.

The first light oil discovery onshore Albania was made by OXY (American Company) in 2001 (Shpiragu Discovery), after the drilling and testing of Shpiragu-1well in the Sqepuri structure, located in Block 2 Area.

Hydrocarbon occurrence

Due to the intensive development of the discovered oil and gas fields, during the last century, the production increased greatly, reaching the highest values:

oil - about 2.25 million tons (1974);
gas - about 940 million Nm3 (1982).

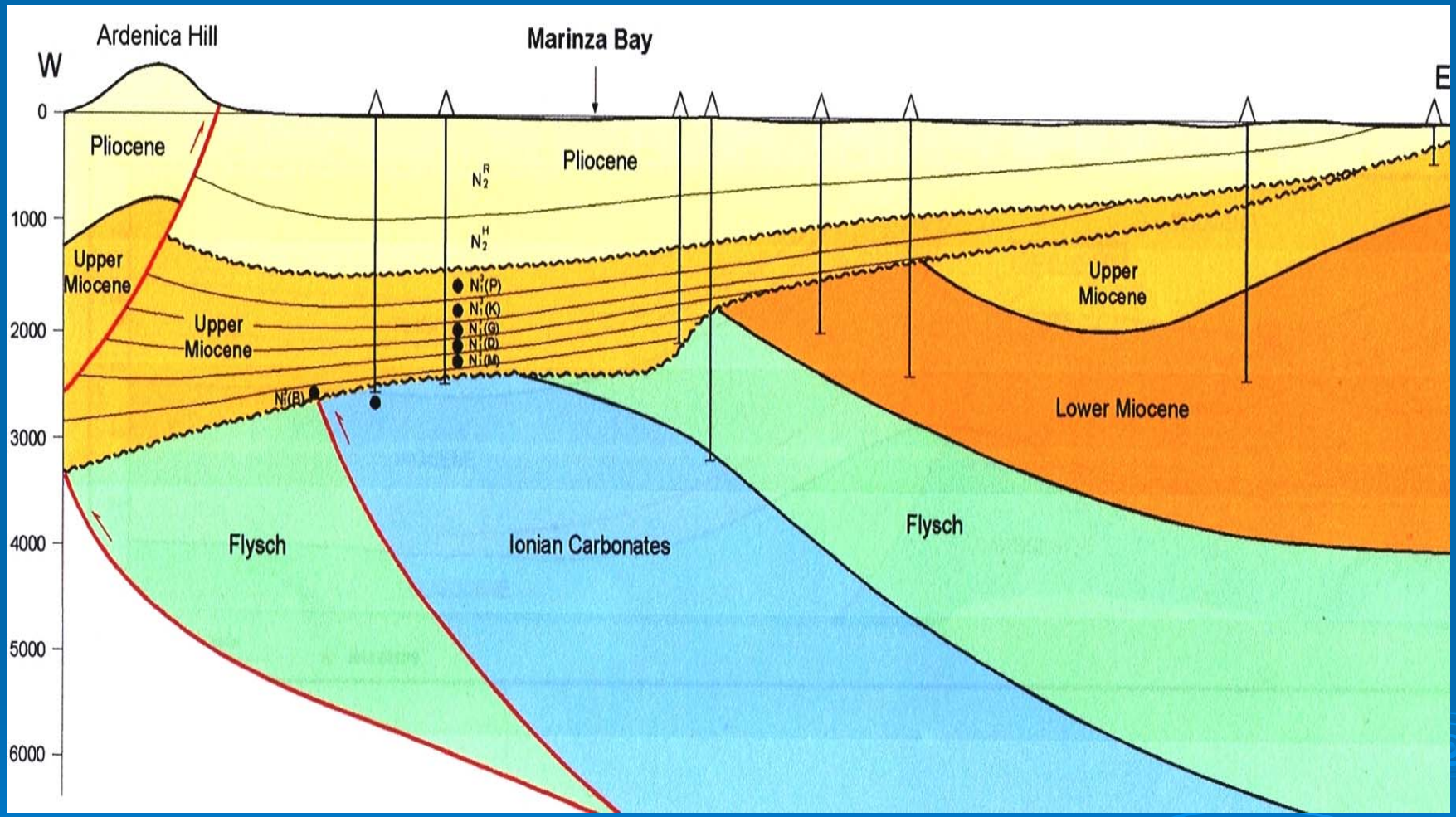
In the 80', the crude oil production decreased to about 1.4 million tons and continued to slowly decrease up to about 1.1 million tons in 1990.

Hydrocarbon occurrence

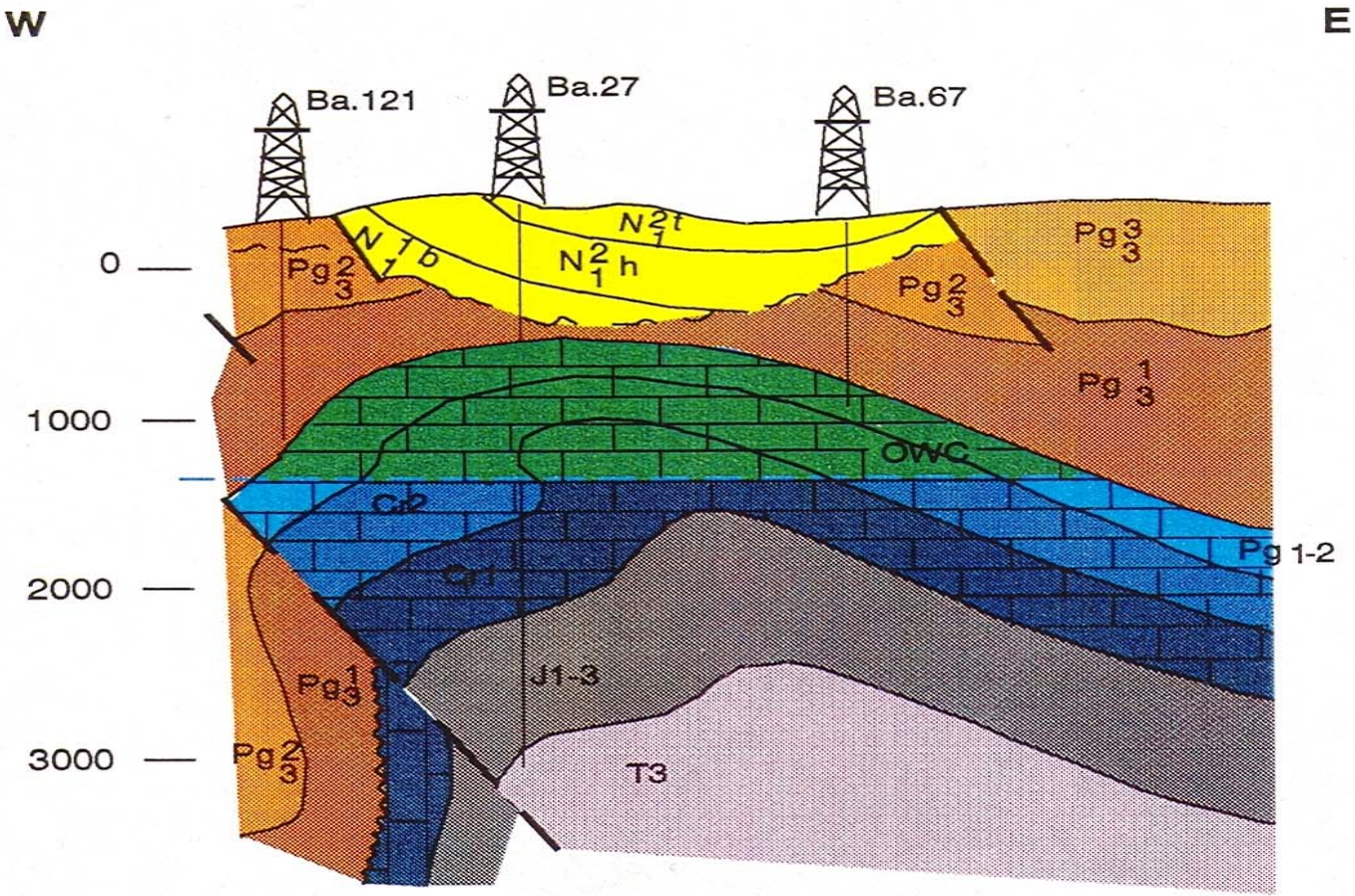
Albania has had a drastic fall down of oil production during the first half of 90' reaching the bottom in 2000 with 0.315 million tons. Some of the reasons:

- **Decrease of wells in production;**
- **Decrease of stimulation interventions;**
- **Decrease of crude oil recovery from Enhanced Oil Recovery (EOR) methods.**

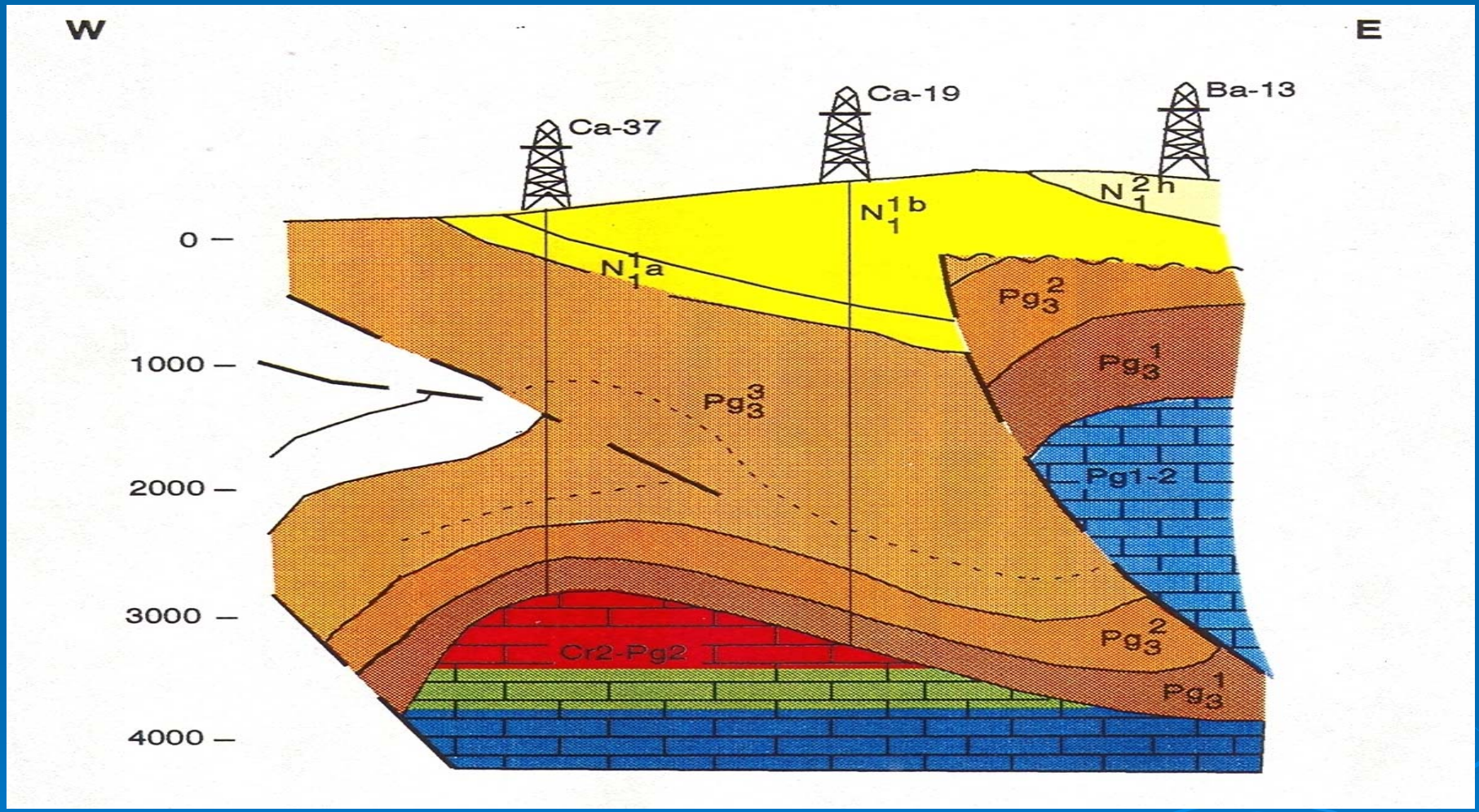
From 2000 up to date, a gradual increase in oil production is on the way.



Marinza oil field



Ballshi oil field



Cakrani oil field

A summary of the oil and gas discoveries in Albania

Field	Discover year	Reservoir type	Reservoir depth (m)	O/g gravity (api)	Sulphur content (%)
1	2	3	4	5	6
Drashovice	1918	Oligoc.flysch	100-200	Oil<10^{o}	?
Patos	1927	Mess-clastics	Surf. To 1200	Oil (12-24^{o}API)	2.5-6
Kucove	1928	Mess-clastics	Surf. To 1500	Oil (13-16^{o}API)	4
Marinze	1957	Mess-clastics	1200-1800	Oil (12-35^{o}API)	4-6
Visoke	1963	Cret/Eoc.Carb	800-1000	Oil (5-16^{o}API)	5-6
Gorisht-Kocul	1965	Cret/Eoc.Carb	1000-2500	Oil (17^{o}API)	6
Ballsh-Hekal	1966	Cret/Eoc.Carb	1000-3000	Oil (12-24^{o}API)	5.7-8.4
Cakrran-Mollaj	1977	Cret/Eoc.Carb	3000-4500	Oil (14-37^{o}API) Cond., 52 ^{o}API	0.9
Finiq-Krane	1973	Cret/Eoc.Carb	800-2000	Oil (<10^{o}API)	3.7-4.3
Delvine	1989	Cret/Eoc.Carb	2800-3400	Oil (31^{o}API) Cond., 53 ^{o}API	0.7

1	2	3	4	5	6
Divjake	1963	Tort/clastics	2400-3000	Gas & Condens.	Na
Ballaj-Kryevidh	1983	Plioc/clastics	300-1700	Gas	Na
Frakull	1965	Mess/clastics	300-2500	Gas	Na
Povelce	1987	Mess/clastics	1800-3500	Gas & Condens.	Na
Panaja	1988	Mess/clastics	2500	Gas	Na
Ad-4 (offshore)	1994	Mess/clastics	2500-3100	Biogenic Gas & Condens., 54.3^{o}API	Na
Sqepur	2001	Cret/Eoc.Carb	4950	Oil (37^{o}API)	2.3

GEOLOGICAL SETTING OF ALBANIDES

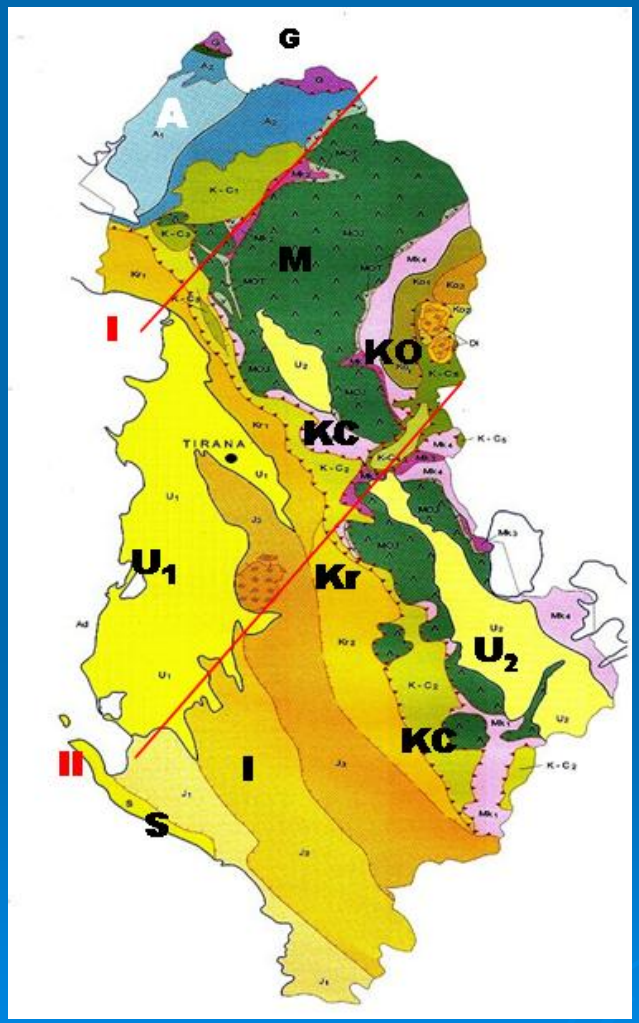
From the geological standpoint, Albania is part of the Mediterranean Alpine Folded Belt and fits in the Dinaric-Hellenic range, between Dinarides in North and Hellenides in the South.

The geological structure of the Albanides comprises two major units: the Internal Albanides in the eastern part of Albania and the External Albanides in the West.

The Internal Albanides are characterized by a developed magmatism and by the intensive tectonics, which has led to the over thrust and tectonic napes. The Internal Albanides are further subdivided from East to West into the Korabi (KO), Mirdita (M), Gashi (G), Albanian Alps (A), and Krasta Cukali zones (KC).

Regional setting of Albania

The two post orogenic sedimentary (intermountainous) basins respectively: Burreli Basin in the North and Korça Basin, overlie trasgressively the Mirdita zone and partially the Krasta-Cukali zone.



Tectonic units of Albanides

The External Albanides, even though characterized by the lack of magmatism and by more regular structural models compared to the Internal Albanides, are highly affected by a considerable thrusting of the tectonic zones and/or structural belts westwards.

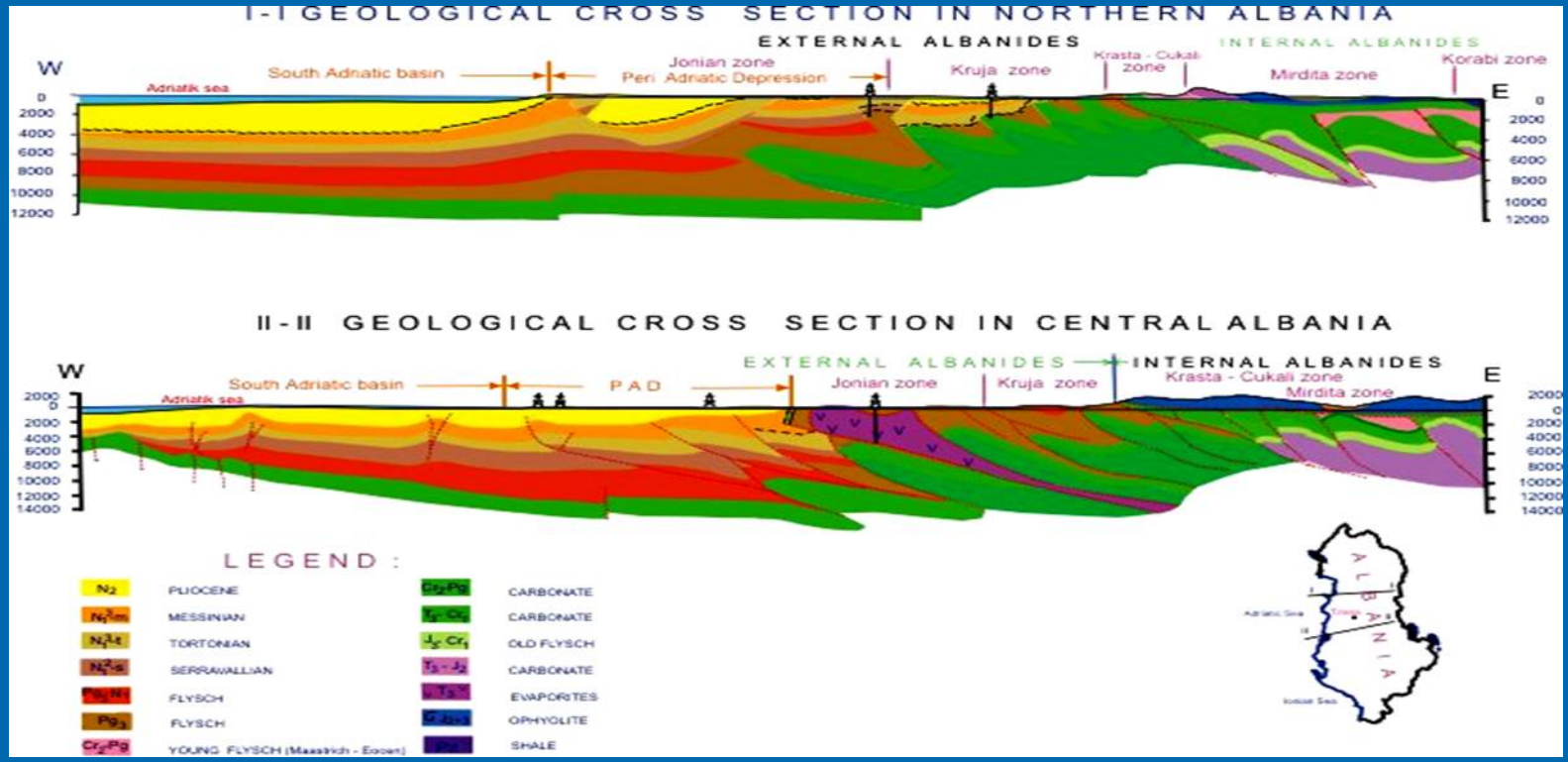
From East to West, the External Albanides comprise the Kruja platformic zone (Kr) and, further westwards the Ionian trough (I) and Sazani platformic zone (S).

In the central western part of Albania, the overlying Peri-Adriatic Depression (U1) masks the Ionian and, partly Kruja tectonic zones. Westwards offshore, the Peri-Adriatic Depression is unified with the South Adriatic Basin, which overlay the Preapulian (Sazani zone) and Apulia Platform

Tectonic style in Albanides

The tectonic zones and their respective structural belts in Albanides have a general NW-SE orientation and thrust over one another from East to SW direction. Except for the over thrusting in the SW direction, some differential horizontal displacement occurred in Albanides, causing local rotation of the mountain fronts and thus to the formation of mountain arcs. The Triassic evaporates formed the main gliding planes for overthrusting.

Locally the thick Triassic evaporate did not only played the role as a gliding plane, but pierced as salt domes into flysch and/or molasses and eventually reached the surface as it is the case in Dumrea salt dome or in some other places in the South of Albania.



Geological cross-sections in the Northern and Central part of Albania

The mountain fronts and fold belts in Albanide and especially in the External Albanides, comprise the main features of a thrust system, including, drag faults, back thrusting and triangle zones. Thrusting of tectonic zones and their structural belts or individual structures on one another westwards represents one of main tectonic features in Albanides.

Both the Shkoder-Peje [Scutari-Pec] lineament (I) and Vlore-Elbasan lineament (II) permeate the Albanide structure respectively in the north and in the central part with a SW-NE trending.

Petroleum geology

Stratigraphy

The sediments ranging in age from Palaeozoic to Quaternary included, are encountered in Albanides.

The metamorphic rocks, consisting of terrigenous, effusive and rare carbonate rocks, are encountered in the Internal Albanides (Korabi Zone) and they belong to the Palaeozoic age.

The evaporate formations, which consists of salts, anhydrites etc, belong to Permian-Triassic ages is mainly encountered in the Korabi and Ionian tectonic zones.

The ophiolitic formations, which consists of plutogenic and volcanic faces, belong to the Middle Upper Jurassic age and it is widely spread in the Internal Albanides, especially in the Mirdita tectonic zone.

AKBN

Petroleum geology

The carbonate formation, widely spread in both External and Internal Albanides, represented by limestone of different kinds and dolomites. The carbonate formation in the External Albanides (Ionian zone) is of Upper Triassic-Eocene and belongs to pelagic faces. Its thickness varies between 2100-2850 m.

The flysch formation, identified with the so-called "Early flysch", which belongs to the Upper Jurassic-Lower Cretaceous and is encountered in Krasta-Cukali and Mirdita zones, while the "Young Flysch" (of Mastrichtian-Eocene age) was formed in Krasta-Cukali and Albanian Alps. In Kruja and Ionian tectonic zones, the flysch formation belongs to the Oligocene age, and its thickness varies 1000-3000m, which is reduced from East to West.

Petroleum geology

The Pre-molasses formation consists of marls, marl clays, sandstone, and lithotamnic organogenic limestone and belongs to the Acquitanian- Burdigalian- Early Serravalian in age and is encountered in the External Albanides especially in the western part of the Ionian zone and Sazani as well. The thickness of Pre-molasses formation varies from 850 m in the East up to 2300-2500 m in the West.

The Molassic formation, of Middle Seravalian-Quaternary age, consisting of a considerable number of sandy-clayey megasequences, conglomerates, clastic limestone and clayey gypsum. It is widely spread in the Peri-Adriatic Depression and westward offshore in South Adriatic Basin.

Oil and Gas potential in Albania

Based on the geological studies, carried out in the past by Albpetrol (Albanian state company) and those performed in the recent years by the foreign companies, it appears that Albania, in spite of the existing oil and gas fields, still has a very good potential and is very promising area for further exploration in both onshore and offshore.

Potential discoveries could be found under the existing oil discoveries in the deeper levels. The probable structures, linked to Triassic salt diapirism must be taken into consideration for further exploration in the onshore areas, close to the region where salt diapirism is present.

Onshore Areas Potential

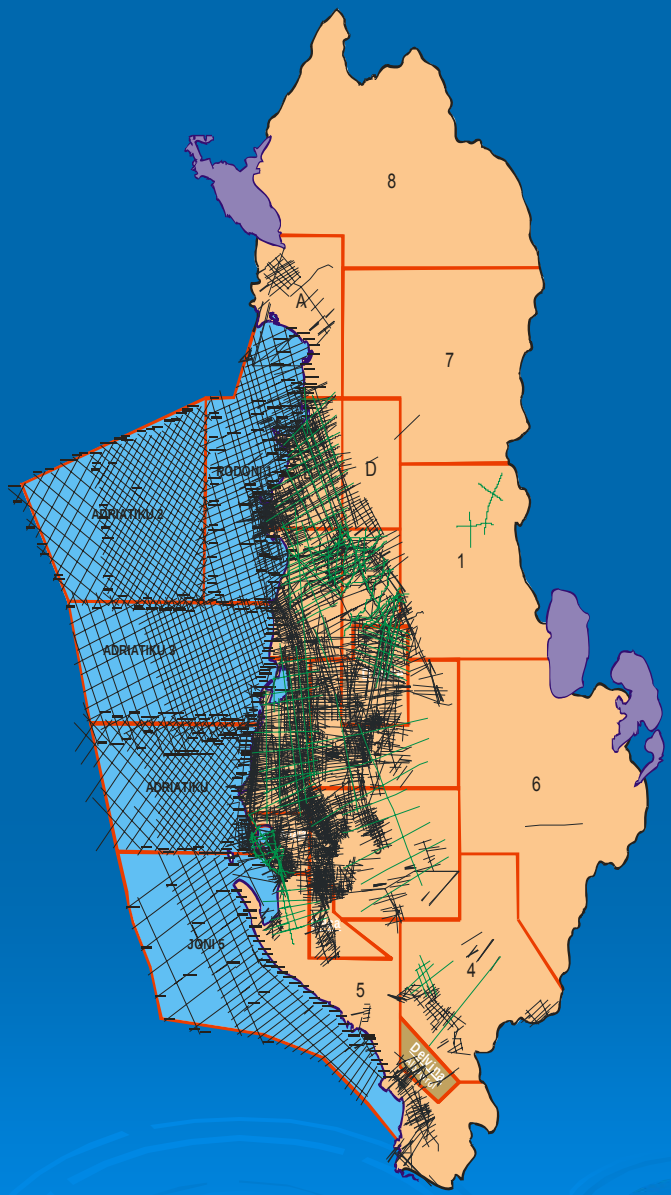
Thrusting westwards in the Albanides and especially in the External Albanides is associated with the masking of the separate anticline structures or anticline chains, which have potential for new oil and gas discoveries.

In the cases when thrusting westward is associated with the back thrust tectonic faults, synclines of triangular type are formed which are not easily identified, but generally hide potential structures for oil and gas discoveries. From this point of view, there is enough room for further exploration for identifying the new possible subthrust structures in onshore areas.

Offshore Areas Potential

Oil Potential in the offshore area is related to the possible Ionian carbonate structures and morphological highs of Apulia platform. In the appropriate conditions and places in the offshore there are possibilities for new and potential oil accumulations both in the clastic section as it was the case in A4-1x well, and/or in the platform carbonate reservoirs.

Gas Potential is related to the Miocene - Pliocene folded structures, as identified from the old seismic (1992) and confirmed by the new 3D seismic recently acquired. Taking into consideration the fact that, the dimensions of the prognosed structures in offshore are larger than their analogue structures in the existing gas fields in onshore, considerable reserves of biogenic and/or termogenic gas, are expected to be found in the area.



Exploration blocks and seismic lines

CURRENT LICENSING SITUATION

The current Licensing situation for petroleum exploration in Albania on September 2009, is as following :

a. Block Durresi (offshore), awarded in 2004. Contractor and operator is Island International Exploration BV and Beach Petroleum;

b. Block Joni 5 (offshore) awarded in 2007. Contractor and operator Capricorn Albania Ltd;

c. Blocks A and B (onshore), awarded in 2007. Contractor and operator is DWM Petroleum AG;

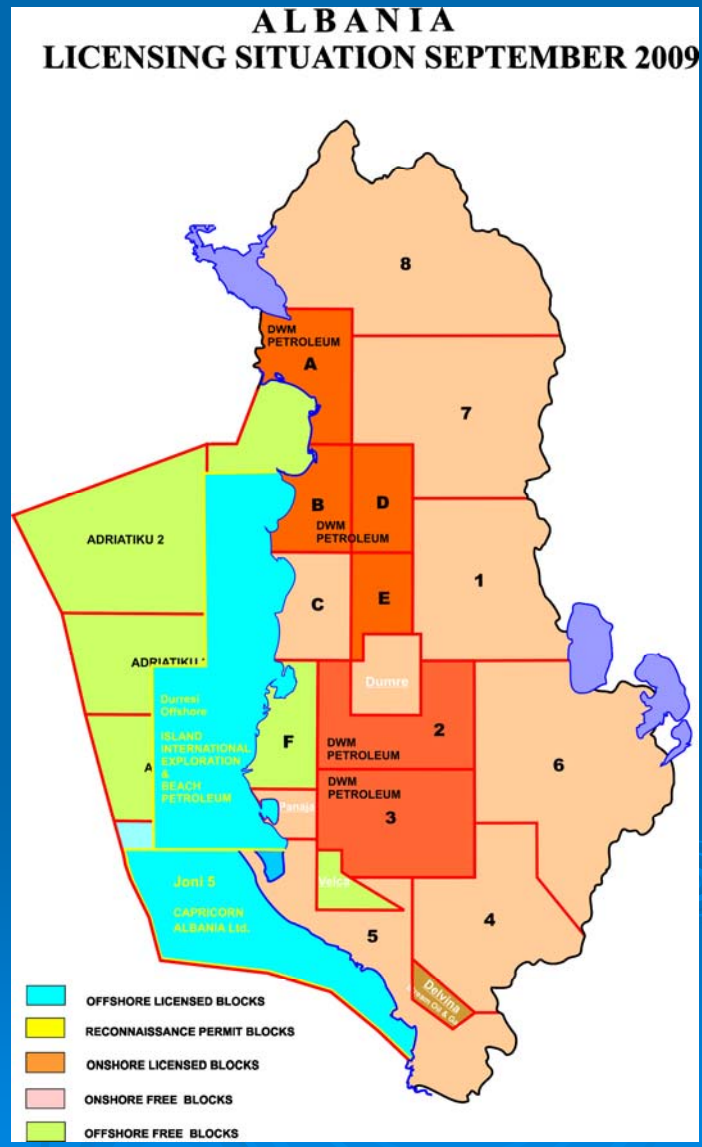


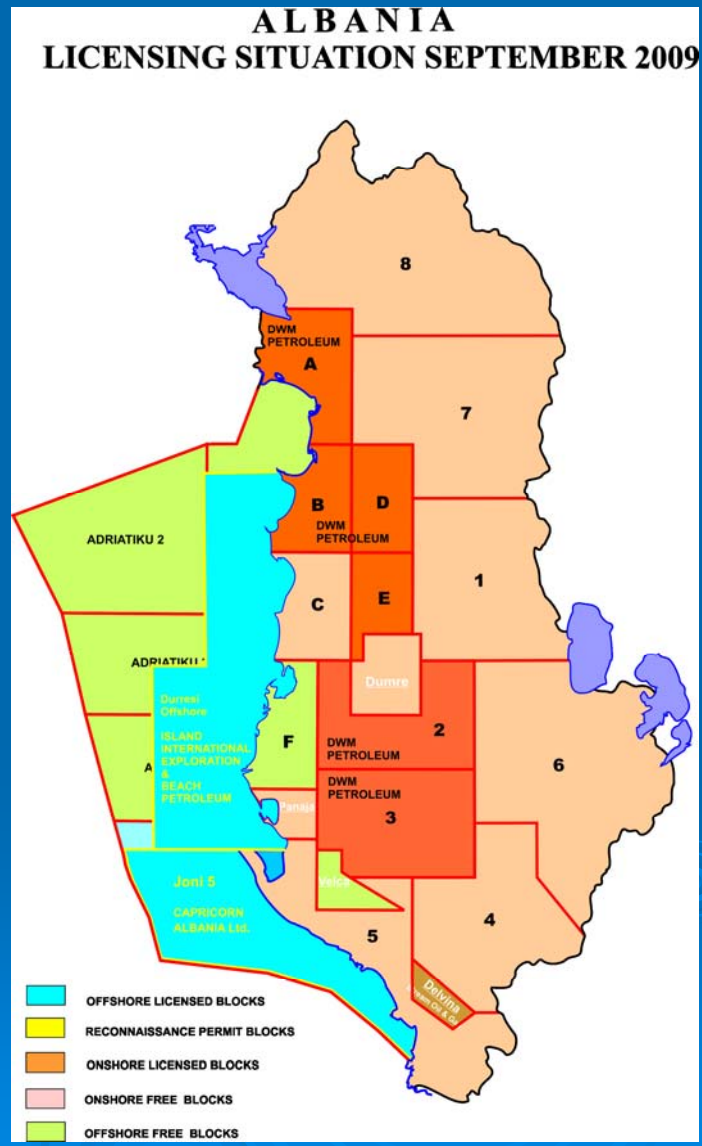
Fig.5 Licensed Exploration Blocks

CURRENT LICENSING SITUATION

d. Blocks D and E (onshore), awarded in 2007. Contractor and operator is DWM Petroleum AG;

e. Blocks 2 and 3 (onshore), awarded in 2009. Contractor and operator is DWM Petroleum AG.

Meantime, negotiations on the Northern Rodoni Block (offshore) and Blocks C and F (onshore) have reached their final stage.



License-Agreements with Albpetrol

In order to guarantee the development and increase the production in the existing oil and gas fields, there is a collaboration, based in the law, between the National Agency of Natural Resources and Albpetrol.

The Agency issues licenses to and signs agreements with Albpetrol for the development and production of hydrocarbons.

Till now, agreements in between the National Agency of Natural Resources and Albpetrol are in force, related to different oil and gas fields.

License-Agreements with Albpetrol

Licence – Agreements include the following areas:

Ballsh-Hekal oilfield, given in 2007. *Contractor Stream Oil & Gas*;

Cakran-Mollaj oilfield, given in 2007. *Contractor Stream Oil & Gas*;

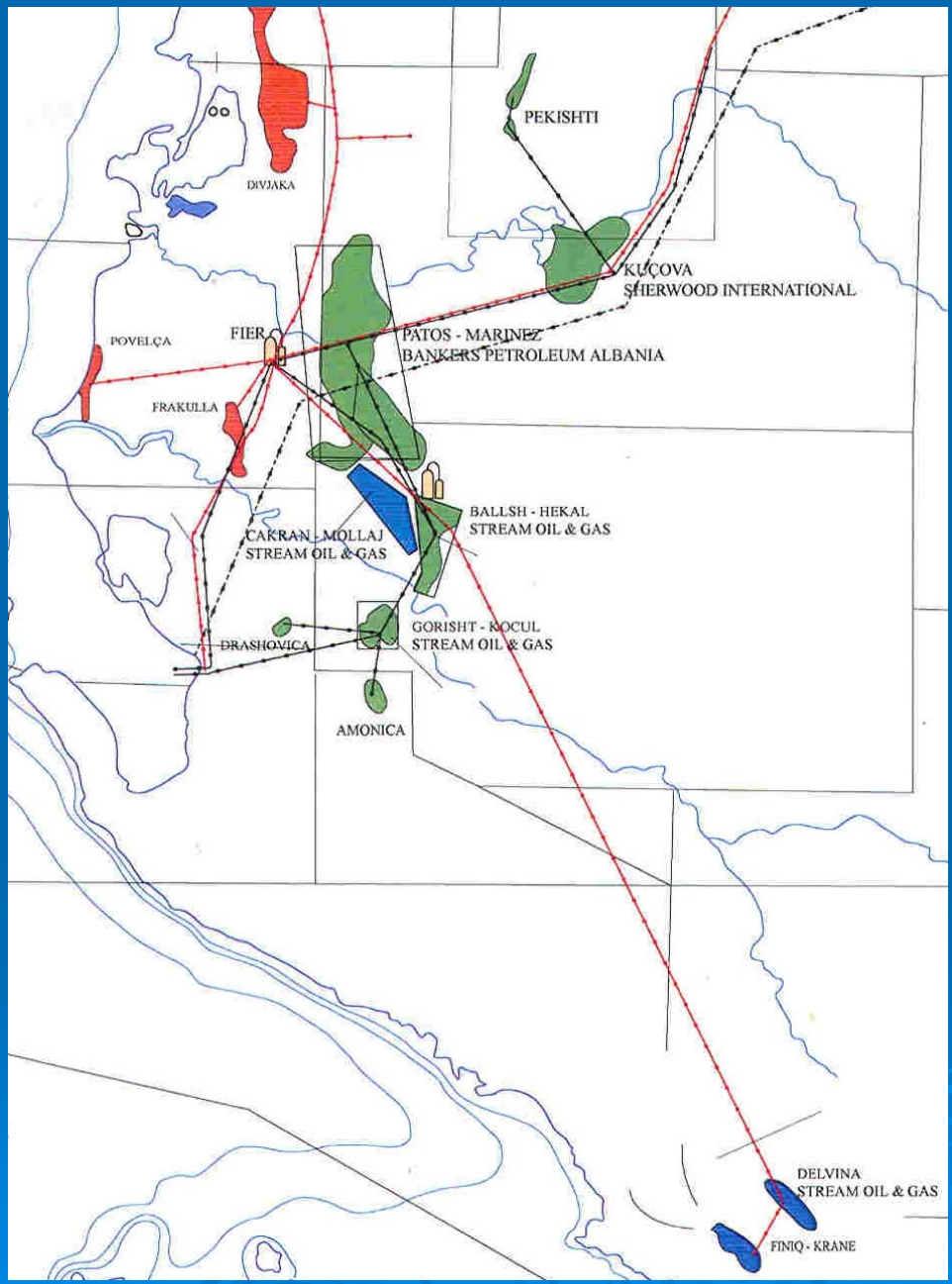
Gorisht-Kocul oilfield, given in 2007. *Contractor Stream Oil & Gas*;

Delvina oil& gas field and **Delvina** exploration block, given in 2007. *Contractor Stream Oil & Gas*;

Kucova oilfield, given in 2007. *Contractor Sherwood International;*

Patos-Marinza oilfield, given in 2004. *Contractor Bankers Petroleum*;

Visoka oilfield issued in 2009. Contractor-IEC Visoka Inc.



Existing Oil and Gas Fields

LICENSING PROCEDURES FOR PETROLEUM EXPLORATION IN FREE AREAS

- Evaluation of the available data;
- Presentation of an application for:
  - Evaluating Permit, or
  - Petroleum Agreement.
- Approval of the application;
- Negotiation related to Main Terms and Conditions of the Petroleum Agreement;
- Approval of Main Terms and Conditions of the Petroleum Agreement;
- Negotiation of the Petroleum Agreement;
- Signature of the Petroleum Agreement;
- Approval of the Petroleum Agreement.

LEGISLATION ON PETROLEUM ACTIVITY

There are three principal laws related to petroleum exploration and/or production in Albania:

- The Law “On petroleum” (exploration and production), No.7746, date 28.07.1993;
- The Law “On the fiscal system on petroleum sector”, No. 7811, date 12.04.1994;
- The Law “On national taxes”, No.9975, date 28.07.2008.

Why to invest in Albania?

Albania – attractive country for investments

Related to Doing Business 2009:

- Albania ranks 14th in the world (indicator "Protecting Investors"), which is a good sign for all of them who are planning to invest in the country;
- It ranks second in the world for reforming the economy and improving business climate;
- Albania has achieved a spectacular result: ranking 86th out of 181 countries, leaving behind almost all countries of the region and some of the EU countries.

Albania – attractive country for investments

Government's Reforms:

- Shortening the time needed for registering a business activity to one day in one location (One Stop Shop) – National Registration Center;
- Simplification of licensing procedures –National Licensing Center, Regulatory Reform on Business Climate;
- Reorganization of the inspection system;
- Reforms of the fiscal and procurements systems.

Albania – attractive country for investments

Government's Reforms:

- New Law on Concessions (PPP) - compliant with EU directives and regulations;
- Successful implementation of the Interim Agreement of Trade with EU;
- CEFTA – Free access to regional market;
- Reform for the reduction of the informal economy;
- Regulation of banking sector, adopting EU directives and legislation.

Albania – attractive country for investments

Reduction of the Fiscal Burden

Implementation of a flat tax of 10% on:

- corporate tax
- personal income

Albania – attractive country for investments

"…It is fair to say that Albania has taken us positively by surprise as far as the implementation of the Stabilization and Association Interim Agreement is concerned. Measures of that agreement are closely connected to trade policies. And for sure it is a positive signal that the country is capable to achieve progress in that important area in terms of the European integration…"

Olli REHN,
European Parliament, May 2007

Address: AKBN, Blv. B. Curri, N.18 ,Blloku “Vasil Shanto”, Tirana, Albania
http://www.akbn.gov.al
Tel: 00355 4 2257117
Fax: 00355 4 2257382