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NATIONAL AGENCY OF NATURAL RESOURCES

HYDROCARBON RESOURCES

EXPLORATION AND PRODUCTION OPPORTUNITIES IN ALBANIA

Contents

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COUNTRY OVERVIEW

1. GEOGRAPHY

Albania is situated in the Southeast of Europe, on the eastern shore of the Adriatic Sea, with Montenegro and Kosovo to the north, Macedonia to the east, and Greece to the south, whereas in the West it is bordered by the Adriatic and Ionian Sea (Fig. 2). Albania is composed of two major regions: a mountainous highland region (north, east, and south) constituting 70% of the land area, and a western coastal lowland region that contains nearly all of the country's agricultural land and is the most densely populated part of Albania. The country is characterized by a Mediterranean climate consisting of hot and dry summer, with long days of sunshine, mild winter and abundant rainfall. The average annual precipitation is 1,300 mm.

1.2 HISTORY

Byzantine Empire from 535 to 1204. An alliance (1444-1466) of Albanian chiefs failed to halt A part of Illyria in ancient times and later of the Roman Empire, Albania was ruled by the advance of the Ottoman Turks, and the country remained under at least nominal Turkish rule for more than four centuries, until it proclaimed its independence on 28th of November, 1912.. From end of 1944 to 1990 Albania has suffered a communist regime. From 1991 a democratic regime has been established in Albania.

1.3 INFRASTRUCTURE

Railways: The Albanian railway system is undergoing a fundamental renovation process across the entire country. Actually the total railway system is 447 km (2004).

Ports and harbors: Durrës, Sarandë, Shëngjin, Vlorë.

Airports: Mother Teresa International Airport (close to Tirana),
Kukës International Airport "Zayed – Flatrat e Veriut",
Vlora International Airport

1.4 GOVERNMENT AND POLITICAL SYSTEM

Albania is a Parliamentary Democracy. The Parliament of 140 seats is elected every four years through general elections. According to the Constitution, the Parliament (known as the Assembly of Albania) elects the President for a five-year term.

The President appoints the Prime Minister who is the head of the Council of Ministers, the highest executive body in Albania. Ministers are nominated by a presidential decree based on the Prime Minister's recommendation. The Parliament gives the final approval on the composition of the Government.

The country is divided into 36 districts grouped into 12 prefectures. The Prefects are appointed by the Council of Ministers. Local elections are held every three years and out of these District Councils are elected. The latter appoint the District Governor. City mayors are directly elected by voters.

The judicial system consists of the Constitutional Court, the Supreme Court, Appeal Court and District Court.

1.5 GENERAL INFORMATION

Population: about 2.4 million;

Surface: 28,780 km^2. Almost 70% of the area is mountainous, whereas the rest consists of hilly and flat lands. Mountains are situated on the eastern part, with the highest peak 2750m (Korabi) above sea level and flat lands are situated along the coast in the west.

Capital: Tirana is the Capital of Albania, since 1920. Its recent population is nearly 700.000. At the same time, Tirana is the main administrative and commercial centre of the country.

Borders: There are 720 km of land boundaries: Kosova 100 km, Montenegro 187, Macedonia 151 and Greece 282 km. There is a coast line of 362 km.

Currency: The official currency is the Albanian Leke (ALL), easily convertible in other currencies. In the exchange approximately 1 EUR = 96 ALL (Dec. 2025).

2

GENERAL GEOLOGICAL STRUCTURAL SETTING OF ALBANIA

2. GENERAL GEOLOGICAL STRUCTURAL SETTING OF ALBANIA

Based on the age of the outcropped deposits, the geological history of the Albanides is included in Pre Alpine and in Alpine cycles and they are divided in two main units: **Internal Albanides** and **External Albanides**.

The Internal Albanides are characterized by a developed magmatic and by the intensive tectonics which has led to the over thrusts and tectonic napes.
The Internal Albanides are further subdivided from East to West in the following zones: Korabi, Mirdita (main ophiolite bearing zone), Albanian Alps and Gashi.
The above mentioned tectonic compressions with over thrusting toward SW, formed two post orogenic sedimentary basins: The Burrel Basin in the north and Korça Basin in the south-eastern part of Albania. These deposits overlie transgressively on Mirdita zone and partially on Krasta-Cukali zone.

The External Albanides are characterized by lack of magmatic and by more regular structural models compared to the Internal Albanides, they are highly affected by a considerable thrusting of the tectonic zones and/or structural belts westwards.
From east to west, the External Albanides include the Krasta-Cukali zone, the Kruja platformic zone and further to the west the Ionian trough and Sazani platformic zone. Northward, the overlying Peri-Adriatic Depression 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 (Fig. 1.2).

3

TECTONO - STRATIGRAPHY

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Based on the age of the outcropped deposits, the geological history of the Albanides is included in the pre-Alpine cycle (Ordovician- Devonian-Carboniferous-Permian) and in the Alpine cycle (Triassic-Quaternary). These two cycles are separated by the tectogenesis of the Variscane Cycle (at the end of Paleozoic) which is noticed in Korabi, Gashi and Mirdita zones ("Albanian Alps").

3.1 Pre-Alpine cycles (Ordovician-Permian)

During the Ordovician-Permian, the Korabi zone represented a marine area with generally pelagic conditions of the basin in which clays, siltstones and rarely radiolaritic cherts and limestone's with tentaculite were deposited.

At the end of the Permian, the tectonic zones of the Korabi, Gashi, Mirdita and Albanian Alps underwent folding, tectonising and emerging as a result of Variscan tectogenesis.

3.2 Alpine cycle (Triassic-Quaternary)

This cycle starts with transgressive placement of sandstones and conglomerates of "Luma" suite (top of Permian-Verphenian) on the oldest deposits.

The "Luma" suite deposits were formed by the intensive inflows of the clastic matter in the basin. Along with them, in the deeper sectors the action of the turbidity currents and the formation of intercalations of sandstones and conglomerates with radiolaritic and intraclastic limestones continued.

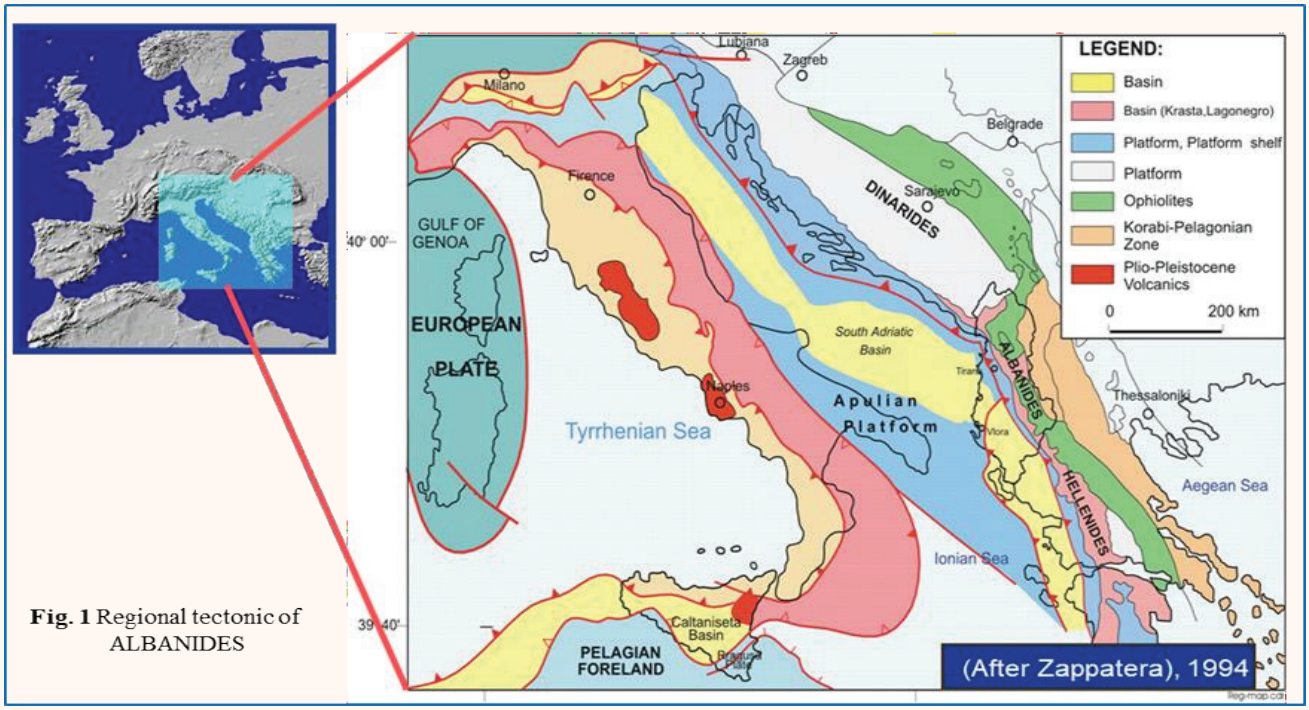


Fig. 1 Regional tectonic of ALBANIDES

As a result of a slight tectogenesis in the Devonian, there were noticeable eustatic movements of sea level which led to shallowing, deepening and a volcanic activity of effusive nature.

After a relative deepening at the end of the Devonian and during the Carboniferous, the more eastern tectonic zones underwent uplifting movements and erosion. In their submerged sectors due to block tectonics, the pelagic (Carboniferous-Permian) clayey siliceous carbonate sedimentation continued and quartzose sandstones, conglomerates and biointraclastic limestone's were sometimes encountered.

The presence of evaporation in the Ionian zone and Dibra unit (Korabi zone) indicates shallow sea, lagoon conditions with high salinity.

After sedimentation of the terrigenous and evaporitic Permian-Verphenian series during Verphenian and Anisinian times, sedimentation in open and shallow sea conditions of the terrigenous- carbonatic deposits continued in the eastern zones.

At the end of Anisinian, with the Triassic split of Pangea, the rifting of the Apulian and Pannonian Plate began and the Vardar Ocean was formed as part of the Tethys Ocean. This process was associated with vigorous volcanic and subvolcanic activity.

The general deepening of the basin at the end of the Anisinian was followed by its differentiation, which is reflected in pelagic and neritic sedimentation during the Ladinian. During this time, the Korabi and Krasta-Cukali areas are individualized as troughs with pelagic sedimentations of biomicritic limestones and cherts with radiolarian and pelagic bivalve animals, whereas the Mirdita and Albanian Alps zones are presented as shoals with biomicritic and biospotitessediments and reef and pre- reef carbonates, where algae and corals flourished.

In the upper Triassic, Ladinian sedimentation conditions are preserved. In Mirdita and Albanian Alps areas (after erosion) strong beds of megalodont and algae limestones were formed.

In the Ionian and Sazani zones, these deposits (Upper Triassic) are represented by dolomites and dolomitic limestones of neritic facies. In the Ionian zone, the evaporitic formation was formed under the dolomites. At the beginning of the Lower Jurassic (Lias), in the Ioniazone differentiations are noticed at the bottom of the basin which are associated with the formation of two different carbonatic facies:

1- Pelagic facies “Delvina” represented by crystalline limestone with cherty lenses and

2- Neritic facies “Cika” represented by algal limestones and dolomites.

At the base of Liassic deposits, a noticeable horizon of bituminous shale’s is encountered.

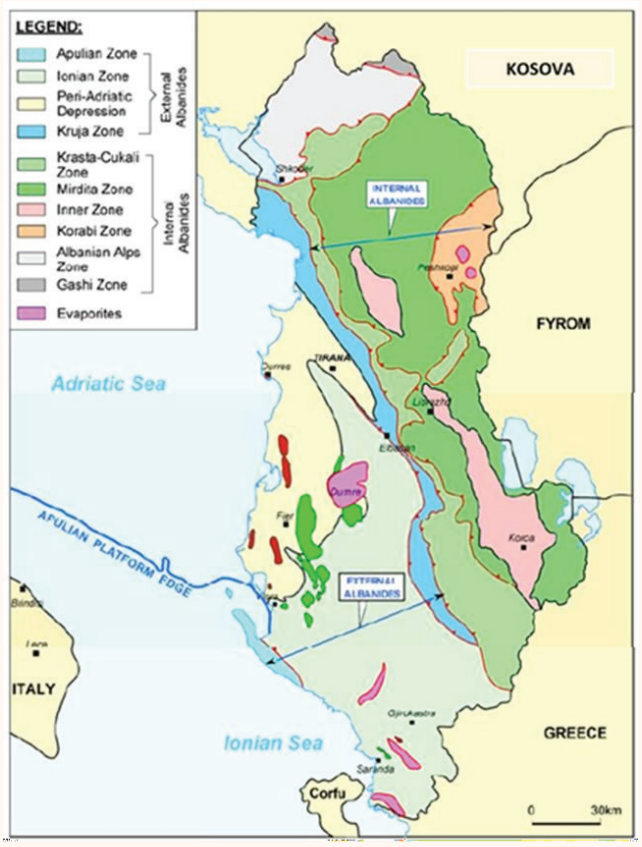
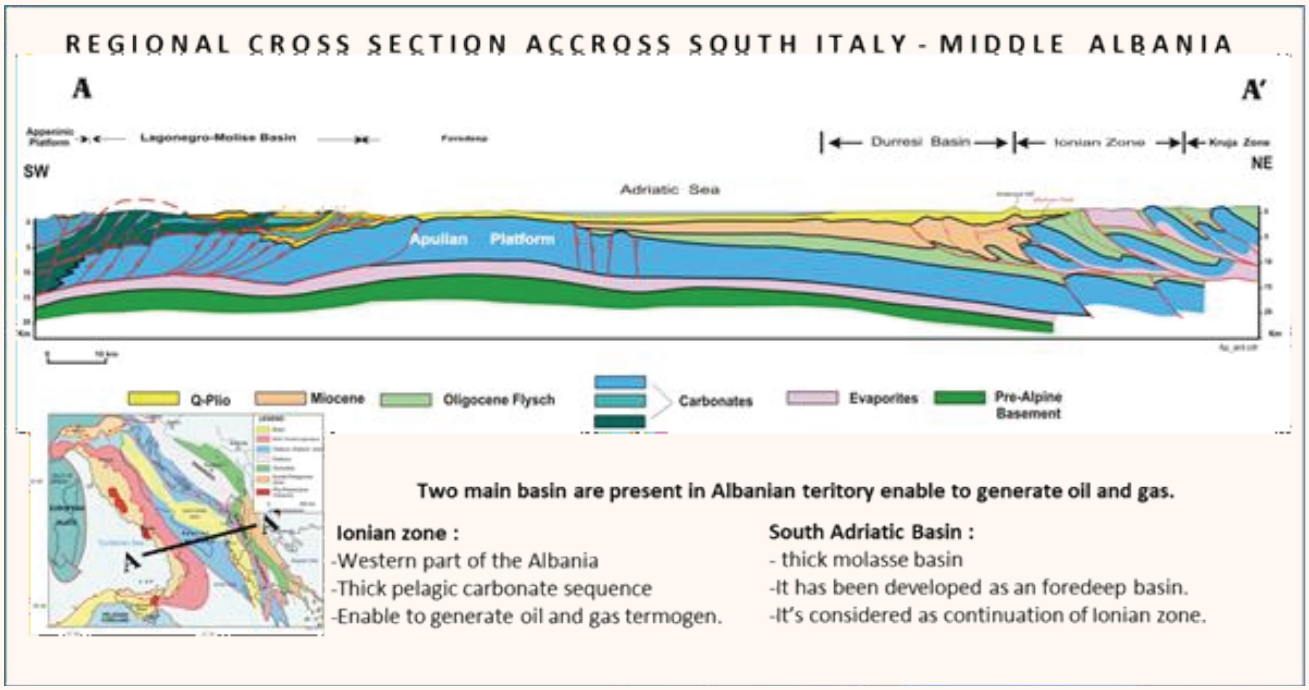


Fig. 2 Tectoic devision of ALBANIDES

At the beginning of the Lower Jurassic (Lias), in Ionian zone, differentiations are noticed at the bottom of the basin, which are associated with the formation of two different carbonate facies: Pelagic facies “Delvina” represented by crystalline limestone with cherty lens and neritic facies “Cika” represented by algal limestones and dolomites.



In Toarican, the differentiation of the basin bottom of the Ionian Trough becomes more evident having an islands archipelago view. In the central part of the Ionian zone, the lithofacies of marly schists with possidonia is formed, whereas on both lateral sides the lithofacies of limestones and dolomitic limestones with Ammonites, known as “Ammonitico Rosso”, are formed. It is relatively shallower than the “Possidonia” facies.

Middle Jurassic in the Ionian zone is represented by the lower cherty package which consists of limestones with numerous cherts followed by micritic and biomicritic limestone deposition rich in cherts.

During the Upper Jurassic the deepening of the Ionian Trough continues and it is associated with a marked increase of siliceous matter (the upper cherty package), which is encountered in the entire Ionian zone.

In the Tithonian-Berriassian, the sea depth reaches the maximum values, covering the Liassic-Neritic deposits. These deposits are overlaid uncomfortably on micritic- biomicritic limestones, rich in tintinide. In the Sazani zone, the Jurassic deposits are represented by dolomites and dolomitic limestones.

During and after Late Lias, in the deeper eastern zones, along with the regional deepening which brought about the complex and differentiated warping of the Korabi, Mirdita, Gashi and Krasta-Cukali zones, the oceanic opening intensifies and ophiolite formation starts.

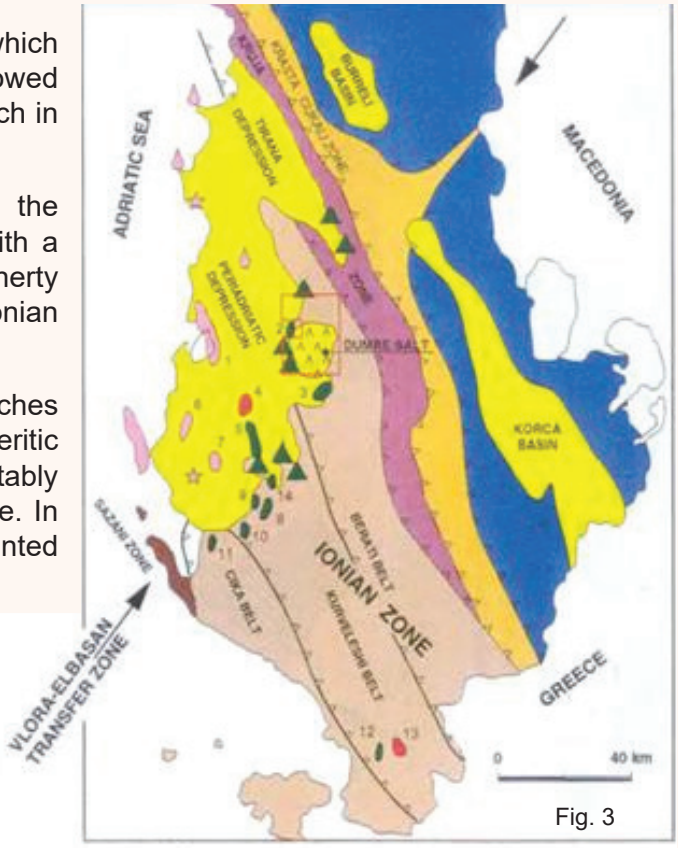


Fig. 3

In Krasta-Cukali zone, during the Jurassic, flag-like siliceous with pelagic bivalves were formed. In the Albanian Alps zone, Jurassic is represented by biomicritic limestone with involutina Liassica, crinoidal clasts and pelagic bivalves followed upwards by flag-like micritic, biomicritic limestones and cherty lenses.
In Korabi and Mirdita zones, the deposits of the Lower Jurassic are represented by clayey limestone with siliceous interlayer. In the upper part of the section, the ammonite level of Toarcian is encountered. Ophiolites with plutogenic and volcanogenic facies were formed in abyssal conditions during the Middle and Upper Jurassic. They are encountered in the Mirdita zone.
A very condensed of carbonatic-siliceous sediments was deposited on both sides of the newly formed oceanic ridge, which moved laterally in opposite directions.

The opening of the Southern Atlantic in the Lower Cretaceous forced the African Plate to move eastward and in Albanides time, northward to the European Plate. This even marks the end of the expanding stage of the Vardar Ocean and marks the beginning of its subduction and compression. This intensive subduction consumed the oceanic crust of the Vardar Ocean although some fragments of this oceanic crust were overlapped the Apulian plate margin.

The tectogenesis of Jurassic- Cretaceous age of the main tectonic phases in the Albanides was associated with acidic and mesoacidic magmatism and caused the folding and thrusting of the Korabi, Gash and Mirdita zones westward. This phase is reflected in the formations of the old flysch of Upper Jurassic-Lower Cretaceous age in the Mirdita and Korabi zones and in the Krasta subzone.

In the Korabi and Mirdita zones, the Lower Cretaceous is of a flyschoidal nature and is represented by marly-sandy-silty intercalations with conglomerates and volcanogenic-sedimentary rocks. The Upper Cretaceous is represented by biomicritic limestone and biointraclasts of neritic facies as well as micritic, biomicritic limestones and biointraclasts of the pelagic facies (Mirdita zone).

In the Albanian Alps zone, the Cretaceous deposits are represented by medium to thick bedded limestone rich in rudists, gastropods and algae, which are covered by micritic and marly limestone with siliceous lenses.

In Krasta-Cukali zone, the Cretaceous is represented by clastic limestone and interclasts (Kosore Suite) on which lies the new flysch of Maastrichtian-Eocene hiatus on the limestone. In Kruja and Sazani zones, the Cretaceous deposits are of neritic and are represented by dolomites, dolomitic limestones with rudists, gastropods and forams.

In the Ionian zone, the Cretaceous is of pelagic facies and is represented by porcellaneous, clayey limestones and bituminous clays (Lower Cretaceous) on which lie phosphatic- biomicritic limestone and intercalations of organogenic-clastic and pelitomorphic limestone (Upper Cretaceous). The increase of the clayey matter etc. shows that the inversion and the regressive series of deposits had begun. At this period, a reverse movement is noticed in the External Albanides. As the Ionian trough was undergoing a relative lifting, the adjacent zones of Kruja and Sazani were undergoing a relative deepening.

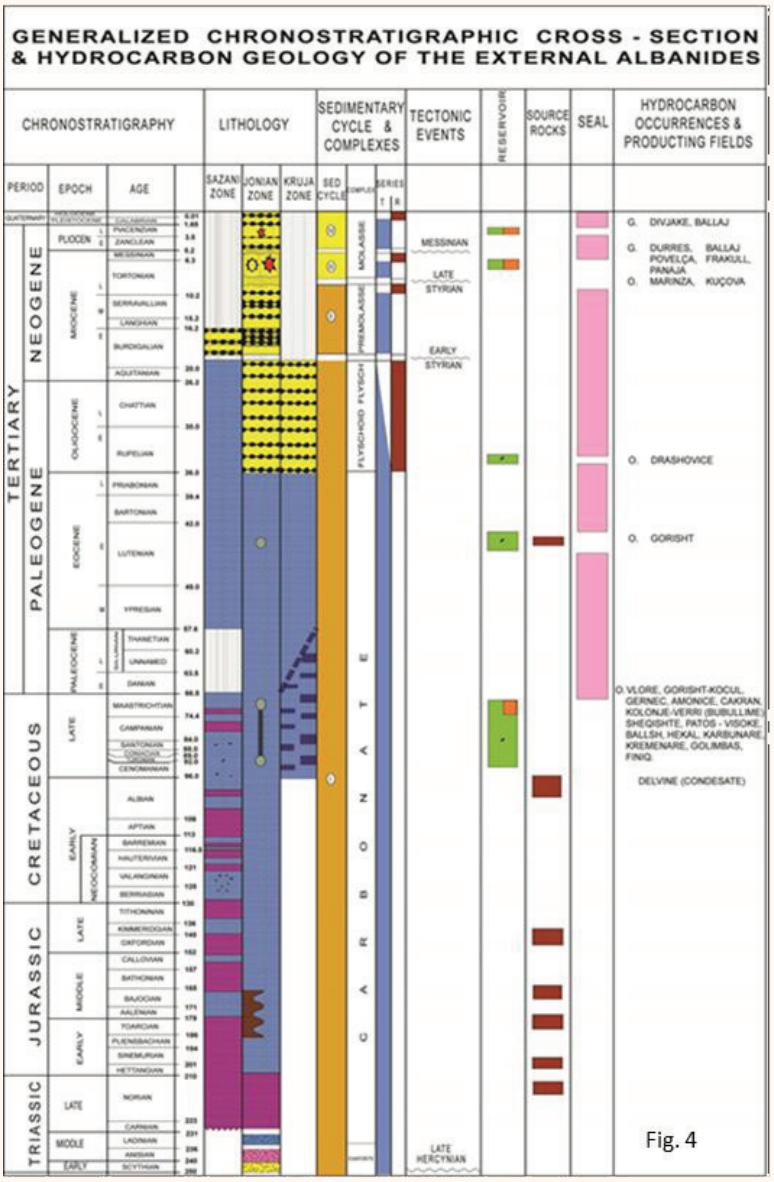


Fig. 4

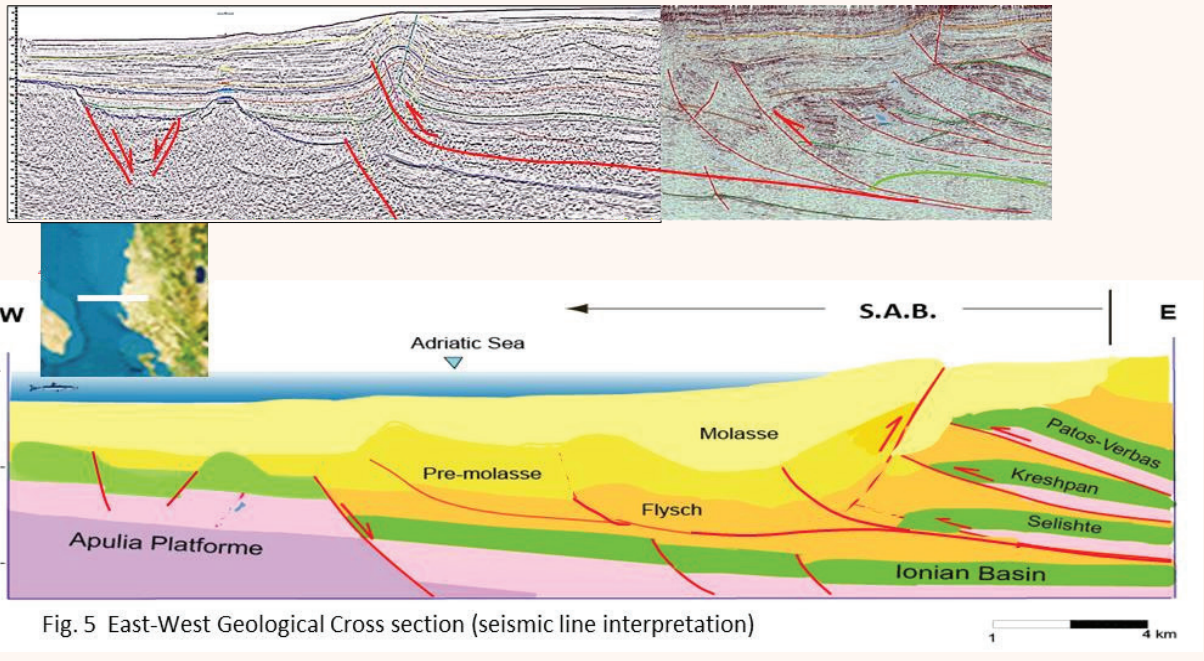


Fig. 5 East-West Geological Cross section (seismic line interpretation)

At the end of the Cretaceous (Maastrichtian), the laramik tectogenesis began, which has folded, tectonised and transformed the Cretaceous carbonatic formations and Jurassic- Cretaceous flyshoidal ones of Mirdita and Krasta-Cukali zones into erosional zones. As a result of this, during the

Maastrichtian-Paleocene-Eocene, in the Krasa-Cukali and Albanian Alps zones, the terrigeneous flyschoidal formation of pelagic facies was formed. It is represented by clayey-sandy-marly intercalations and turbiditc limestones, slumps and olistolyths of different rocks. In the Korca basin, the sediments of hemipelagic facies were formed during this time. They are represented by conglomeratic-siltstone and clayey intercalations. In the Kruja and Sazani and to a lesser extent in the Ionian zone, the laramik tectogenesis effect is reflected with the hiatus of the Palaeocene-Eocene deposits on the oldest ones. During the Palaeocene in the Kruja zone and the Eocene in the Sazani zone, the detrital limestones (biointroclasts) of the neritic facies rich in miliolids and textularids were formed.

During the Paleocene-Eocene, in the Ionian zone, the pelagic conditions of the Upper Cretaceous paleogeography are still preserved, reflected by the formation of micritic limestone and detrital limestone intercalations. (Fig. 3.4).

At the end of the upper Eocene, the Krasta-Cukali zone is tectonised and emerges, whereas in the Kruja and Ionian zones the sedimentation of flysch formation begins. In the Lower Oligocene, the Kruja zone regions fill with flysch deposits reaching a thickness of 3000-4000 m and intensively submerge, becoming in this way the “subduction front”. In the Kruja and Ionian zones, the Oligocene-Aquitanian deposits are represented by intercalations of flysch- flyschoidal-sandstone-silts with underwater slumping horizons and organogenic-clastic limestones, which became thicker and coarser eastward and upward (in the younger levels). In the Sazani zone, the Oligocene is represented by biomicritic limestones of neritic facies. The Chatian-Aquitanian is represented by massive carbonate clays, which lie with hiatus on the Upper Cretaceous limestone. The structural development of the special tectonic units in the External Albanides during the Oligocene-Aquitanian is intensified and associated with noticeable reductions of the deposit thickness of up to 10 times, both at the centers of synclinals (represented by flyschoides) and at the tops of anticlines (represented by clays).

At the beginning of the Middle Oligocene, the Mirdita zone was impacted by vertical graben tectonics creating the Korçë basin, which starts to be flooded by the sea on the south-eastern sectors. During the Oligocene and Aquitanian, in the Korçë basin the molassic formation was formed. It is represented by intercalations of sandstones, conglomerates and clays. The presence of coals indicates littoral lagoonal conditions.

Along with the transgression expansion up to the Langhian, which is reflected by the appearance of marls in the Burdigalian and the increase of clayey matter etc. the basin has suffered the vertical tectonic oscillations which are obvious in the hiatus position of the Aquitanian and Burdigalian deposits.

As a result of the continuous development and migration to the west of the tectogeneses, the Kruja Zone folds and emerges at the end of the Lower Oligocene. The eastern part of the Ionian zone (Berati belt) floods and emerges at the end of the Upper Oligocene, whereas the coastal line continues its regression westward.

From the Oligocene to the Aquitanian, the sea regression is intensified and at the end of the Aquitanian the western sectors of the Ionian zone are tectonised and emerged and the tops of the anticlinal structures are eroded. The sedimentation continues without interruption in synclines.

During the Burdigalian, the sea suffers transgression and in pelagic conditions marls are deposited, intercalating with marly-clays, sandstones and lithothamnion limestone.

Deposits of these sediments, together with those of the Langhian and Seravallian, which formation in some places is represented by a two stage construction, mask the underlying carbonate structures.

The formation of pre-molasses was associated with a marked tectonic development reflected by the formation of new tectonic incidents, the intensification of thrusting degree and the creation of back thrust tectonic incidents on the eastern flanks of the structures. This structural-tectonic development becomes more evident in the tectogeneses phase of the beginning of the Tortonian, which finally emerges in the central and western sectors of the Ionian zone (Kurveleshi and Çika (Chika) belts) and in the Korçë Depression as well. (Fig. 5).

The Peri-Adriatic Depression molasses of Tortonian-Messinian-Pliocene consist of a considerable number of sandy-clayey mega-sequences (going upwards). In some cases, these mega-sequences become more complete and begin with conglomerates and clastic limestones

with lithothamnion, and end with clays, coals or gypsum. From south-east to north-west, the thickness of the molasses increases, reaching 5000 m. The clayey matter content also increases. As a result of sedimentation conditions changing in the Messinian, the clayey- sandy lithofacies was formed in the eastern of

Peri-Adriatic Depression and the clayey-gypsum lithofacies in the western part.
The Tortonian transgression created the Burrel basin, in which conglomerates, sandstones, siltstones, clays and coal beds were formed. Before and after the formation of Pliocene deposits represented by clays, sandstones and conglomerates, two tectogenesis phases are recognized which together with the pre- Tortonian one, give the final shape to the structural elements. During the molassic cycles, the structures and structural chains of the Ionian, Kruja and Sazanizones have increased the thrusting and back thrusting degree as a result of a powerful tectonic development. This phenomenon often led to the formation of tectonic blocks (within the carbonatic section) of imbrication in nature (as a result of the collision of the limestone of the adjacent structures), and to the partial and complete masking of the expected anticlinal structures from the evaporates and the adjacent eastern structures.

By the time the Peri-Adriatic Depression molasses deposits were formed and folded, the adjacent carbonate structures of the Ionian and Sazani zones, as a result of the intensive submerging of southern Adriatic basin, were “absorbed” towards the north-west and were rotated anti-clockwise, increasing their tectonic complication degree. One of the consequences of this process is the formation of back thrust tectonic incidents, encountered in the eastern and southern edge of the Peri-Adriatic Depression.

4

PETROLEUM SYSTEM

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4.1. SOURCE ROCKS

The geochemical studies have proved the existence of some source rock levels, beginning from Silurian to Paleogene (Table 1).

In the Sazani zone a source horizon is encountered in the well Sazani-1, which is related to the bituminous, dolomitic schists of the Upper Triassic with a thickness of 10m. Maceral components show that the organic matter of this horizon is of type II/III, able to generate gaseous hydrocarbons or fat gas. The Vitrinite Reflectance values (Ro=0.87%) show that this organic matter is matured in the Ionian zone, there is evidence of some source rock levels which are related to clayey- marly-dolomitic-bituminous schists of the Upper Triassic-Cretaceous. (Fig. 6)

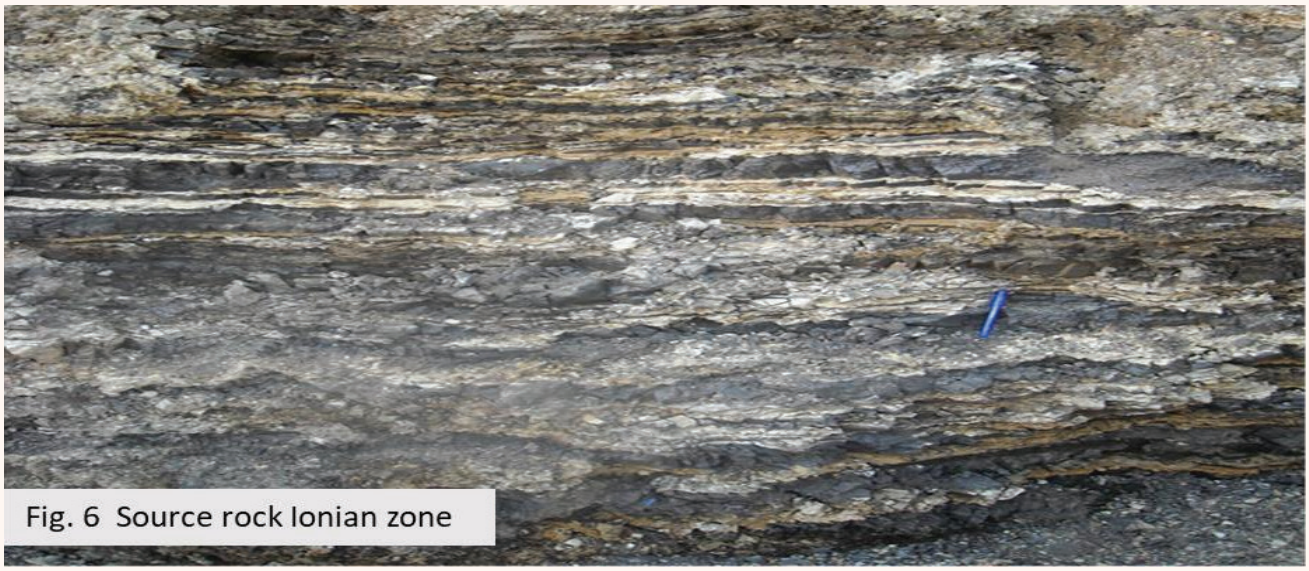


Fig. 6 Source rock Ionian zone

Source rocks of the Upper Triassic-Lower Jurassic prove to have Total Organic Carbon (TOC) values of 4.96%-29.16%. Based on the values of Hydrogen Index HI=617-778 mg CH/gr and the maceral components, the results show that the organic matter is of type I, able to generate liquid hydrocarbons. The Vitrinite Reflectance (Ro=0.65-0.7%) shows that the organic matter is matured.

TOC is 0.17-15.66 % for the source rock of the Jurassic. The maceral components of the organic matter show that it belongs to the type I-III, which is able to generate liquid and gaseous hydrocarbons. The Vitrinite Reflectance values Ro>0.5 show that the organic matter is mature.

The source rock of Cretaceous with TOC=0.34-26.1 %, HI=272-666 mgHc/gr belong to the type I/II, able to generate liquid hydrocarbons. The Vitrinite Reflectance values Ro=0.42-0.53 % show that the organic matter is in the maturing stage or is matured.

In the Kruja zone, the source horizon is proved to be related to Upper Cretaceous deposits. The analyses performed for this

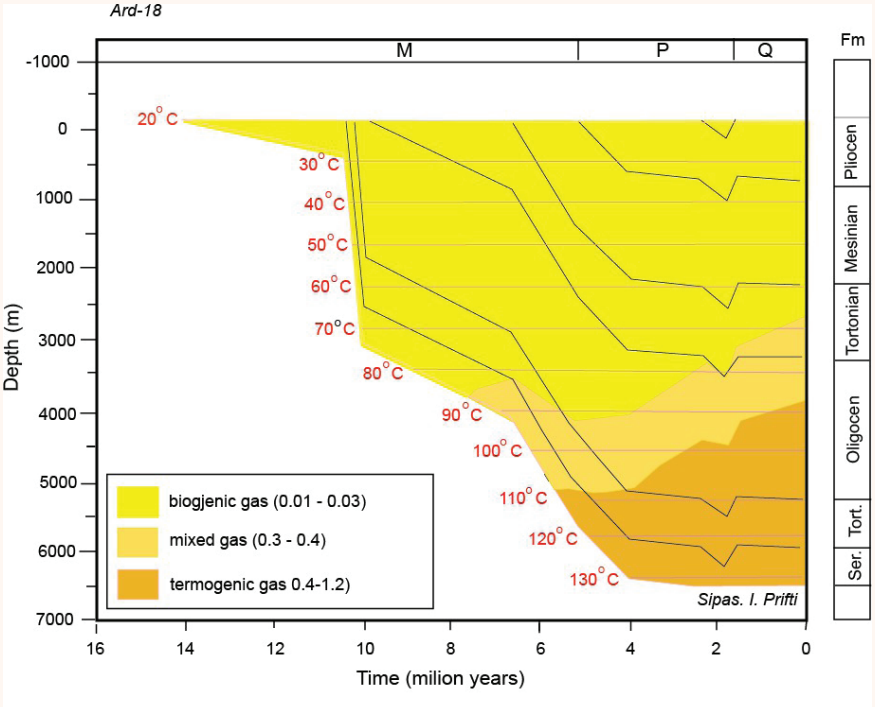


Fig. 7 Hidrocarbon generation in S.A.B (well Ard. 18)

source rock horizon show that TOC ranges from 0.664 % to1.05 %. The Hydrogen Index values (HI) as well as the maceral components show that the organic matter belongs to the type I/II, able to generate liquid hydrocarbons.

The Vitrinite Reflectance Ro=0.338 % to 0.403% shows that the organic matter is just starting maturation. The numerous oil seeps, encountered on the surface in the Kruja zone prove the existence of source rock which has generated liquid hydrocarbons.

The flysch and flyschoidal deposits of the Kruja and the Ionian zones, based on the maceral components

(where the oxidized and wooden components predominate) as well as on the average value of HI=71 mgHc/gr show that their organic matter is able to generate gaseous hydrocarbons.

The Vitrinite Reflectance value Ro=0.335 % show that the organic matter ranges from the immature stage to the transitory stage.

The geochemical indexes of the organic matter for the Tortonian deposits in Peri-Adriatic depression such as: HI=34.8 mgHc/g, Vitrinite Reflectance Ro=0.330 %, as well as the predomination of the oxidized and wooden composition, shows that the organic matter of these deposits is able to generate gas of the biogenic and mixed origin. In some cases, in the organic matter of these deposits, a higher content of Liptinites of continental origin is noticed, which is able to generate unsaturated liquid hydrocarbons (condensate). (Fig. 7)

In the geochemical indexes of Pliocene in the Peri-Adriatic Depression, changes are noticed compared to the Tortonian ones. The changes consist of an increase of the “Oxidized” composition and of the decrease of the Liptinite composition. The organic matter of Pliocene deposits is able to generate dry methane gas of biogenic origin.

Table 1. Source Rocks in Albanides

No.	Zones	Age	Lithology	Sample Location	TOC (%)	HI MgrH c/gr	Tma x	Kerogen Type	VR/E
1	Sazani	Upper Trias.	Dolom/ Shale	Well	0.16-1.72	162	424	II/III	0.87
1	Ionian	Upper Trias.	Shale/Clay/ limes	Outcrop	0.02-38.5	617	416	I	0.54-0.88
2		Low. Jurassic	Dolomite Shale	Outcrop	0.0.1-52	450	434	I/II	0.55-0.75
3		Toarcian	Possidonia Shale	Outcrop	0.09-3.7	588	432	I/II	0.5-0.6
4		Mid. Jurasic	Clay	Well	2	505	424	II	0.57
5			Shale	Outcrop	0.04-9.4	508	432	I	0.52
6		Upp. Jurassic	Shale	Outcrop	0.03-5.9	520	430	I	0.45-0.57
7		Low.Cret.	Shale	Outc/Well	0.02-27	521-700	413	I/II	0.45-0.54
1	Kruja	Upper Creta.	Dolomite/ shale	Outcrop	0.18-4.2	540	427	I/II	0.3-0.4
1	IO,KR,S A PAD	Aquitan/ Burdigal	Clastic	Outc/Well	0.19-1.72	71	434	III	0.4-0.5
2		Tortonian-Pliocene	Clastic	Well	0.05-1.62	34.8	431.5	III	0.330-0.28
1	Krast- Cukali	Triassic Jurassic	Shale	Outcrop	7.48	85.27	463	III	0.64
2		Cretaceous-Paleogene	Shale	Outcrop	0.5	16.28	455	III	0.52
1	Korabi	Silurian	Black Shale	Outcrop	2.48	0	548		2.747

In the Krasta-Cukali zone, two source rock horizons are proved. The first horizon is related to the bituminous schists of Triassic-Jurassic (TOC=7.48 %), while the second one is related to the

bituminous schist of Cretaceous-Paleocene (TOC=0.5 %). The values of Hydrogen Indexes HI=85.2-16.28 mg Hc/gr as well as the maceral composition for both horizons, shows that the organic matter is of type III, which is able to generate gaseous hydrocarbons. The Vitrinite Reflectance Ro=0.64-0.52 % shows that the organic matter has reached the maturation stage.

Only one source of rock horizon is proved so far in the Internal Albanides, which is related to black shale within Silurian deposits in Korabi zone. The geochemical indexes of these source rock horizons with TOC=2.48 %, Ro-2.47 % and predomination of Micrinit in the maceral composition of the organic matter, show that the organic matter of this source rock has generated all of its potential of prone to gaseous hydrocarbons.

The methane gas seeps, bitumen seeps and very rarely oil seep encountered in the Internal Albanides (Blocks 8, 7, & 1) prove the existence of source rocks which have generated gaseous and liquid hydrocarbons. The geochemical analyses performed for the Korça Depression for the Paleocene-Lower Miocene indicated TOC=0.86 % for Paleogene deposits and TOC=0.56 % for the Lower Miocene deposits. The main component of the organic matter, Liptinite, appears to be type II, which is able to generate fat gas, whereas the Vitrinite Reflectance values Ro=0.412-0.453 % shows that the organic matter is at the entrance of the oil window (fig. 8) Based on the submerged history of the basin, we can say that the older source rock of Mesozoic has entered the window during the Early Miocene (Ro=0.5 %). In the External Albanides, where oil fields are discovered, results show that primary massive migration has taken place during the Middle Miocene (heavy oils), while the generation and massive migration of light oils and condensate has taken place during and after the Pliocene.

4.2. RESERVOIRS

Oil and Gas reservoirs have been proved in both deeper marine carbonates of the Ionian zone and in the clastic section of the Peri-Adriatic Depression.

The limestone reservoir in Albania ranges in age from Cretaceous to Eocene, it is virtually clay-free, massive and represented by

micritic and clastic limestone. The main type of reservoir consists of fractured carbonates (Fig. 9), going deeper from the Eocene-Paleocene to Cretaceous is noted that the reservoir storage capacity is largely improved, because of increasing of the secondary porosity, which consists of fracture, and vuggy porosity. Based on some well cores analysis of Cakran oil field, the matrix porosity results to be mainly 2,5 % going up to a peak 6 % for a couple of samples.

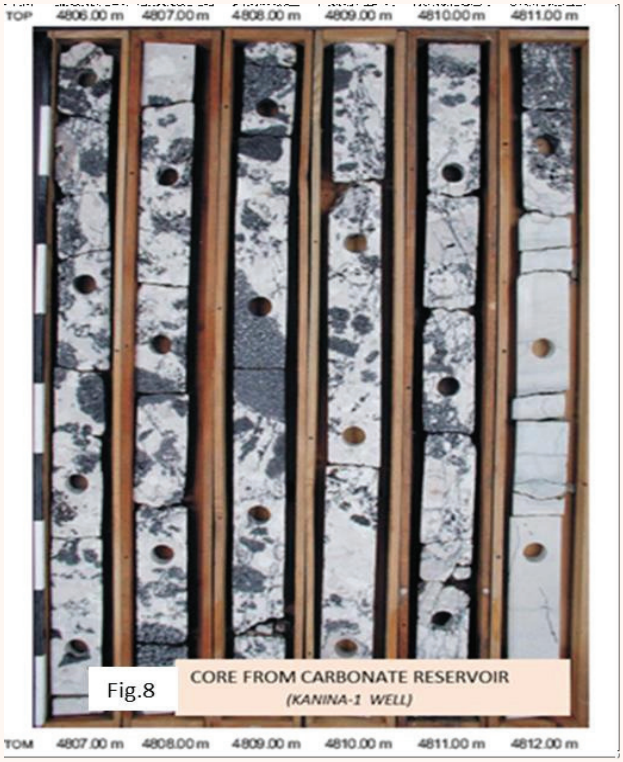


Fig.8 CORE FROM CARBONATE RESERVOIR (KANINA-1 WELL)

Also, from the well core measurements in the Paleocene reservoirs belonging to the Ionian zone (Kurveleshi belt), the fracture porosity resulted to be at a range between 2.4-2.5 %. (Fig. 8)

The Upper Cretaceous reservoir in Kruja zone, consisting of dolomites and dolomite limestone has not been penetrated by any well, thus they are described based on outcrops. Considering the fact that those reservoirs in Kruja belong to neritic platformic facies, good to excellent reservoir properties are expected to be found there.

From the well cores of the Upper Triassic-Lower Jurassic reservoirs in Sazani zone, the effective porosity consisting of intercrystalline, fracture, and vuggy porosities range from 2-10.5 %. In the Lower Cretaceous reservoirs (Sazani zone) the fracture and intercrystalline porosity ranges from 2.6-7.9 %, whereas for the Paleocene–Eocene reservoirs fracture porosity varies from 0.9-1.3 %. The matrix

porosity and vuggy porosity of the Upper Cretaceous reservoirs measured in A4-1x well cores are respectively 4.3 -10 % and 6-7 %. In the Upper Cretaceous (Apulia Platform) reservoirs, consisting of dolomites limestone of A5- 1x well (Block JONI-5) the total porosity is 13.6 %.

Reservoirs in some oil fields in the central part of Albania is related to Miocene deltaic sandstones with porosities ranging between 10-30 % and permeability's 200-2000 md, such as in Marinza, Patos and Kuçova fields. Reservoir in the gas fields of the Peri-Adriatik Depression is related to molasses sandstones of Late Miocene (Tortonian-Messinian) or with turbitide sandstones of Pliocene, with porosities ranging between 12-37 %. (Fig. 9,14)

4.3. SEALS

Flysch and flyschoidal deposits of Oligocene-Miocene are proved to be excellent seals in the existing oil fields in the Ionian zone. (Fig. 9)

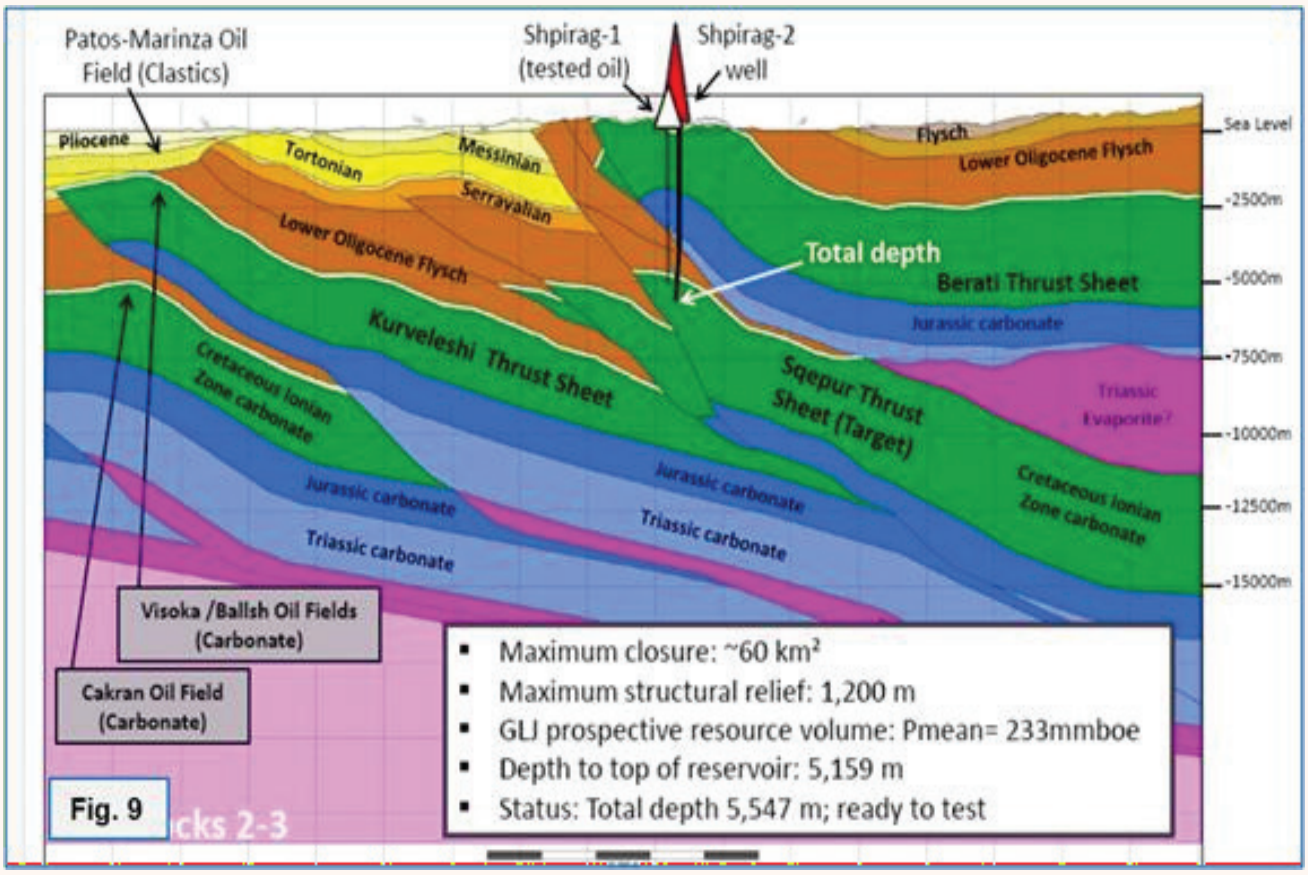
Considerable clayey thickness of Tortonian-Pliocene has proved as well to be a good seal for the gas and oil fields in Peri-Adriatic Depression. The following can also be predicted as good seals:

Clayey-marl shale of Toarcian, cherty packages of Jurassic and clayey shale of Lower Cretaceous within carbonate formation in the Ionian zone.

The Old flysch of Jurassic-Cretaceous in Mirdita and Krasta zones and the Young flysch of Mastrichtian-Eocene in Krasta-Cukali and Albanian Alps zones.

4.4. TRAP FORMATION

The main trap formation mechanism in Albania is linked to the compression tectonic regime of Alpine Orogeny and the resulting over thrust. This mechanism is valid not only for the carbonate reservoir fields in Albania such as Visoka, Ballshi-Hekali, and Cakran-Mollaj



Gorisht-Kocul, Delvina, Finiq-Krane, and Shpirag Discovery recently made (2001) but also for most traps concerning the clastic sandstone reservoirs proved in Albania such as Patos - Marinza, Kuçova etc.

The main folding phases responsible for forming traps in Albania are related to the geological times listed below:

- The Late Eocene/Early Oligocene
- The Burdigalian
- The Tortonian
- The Pliocene to recent (Fig. 11,12)

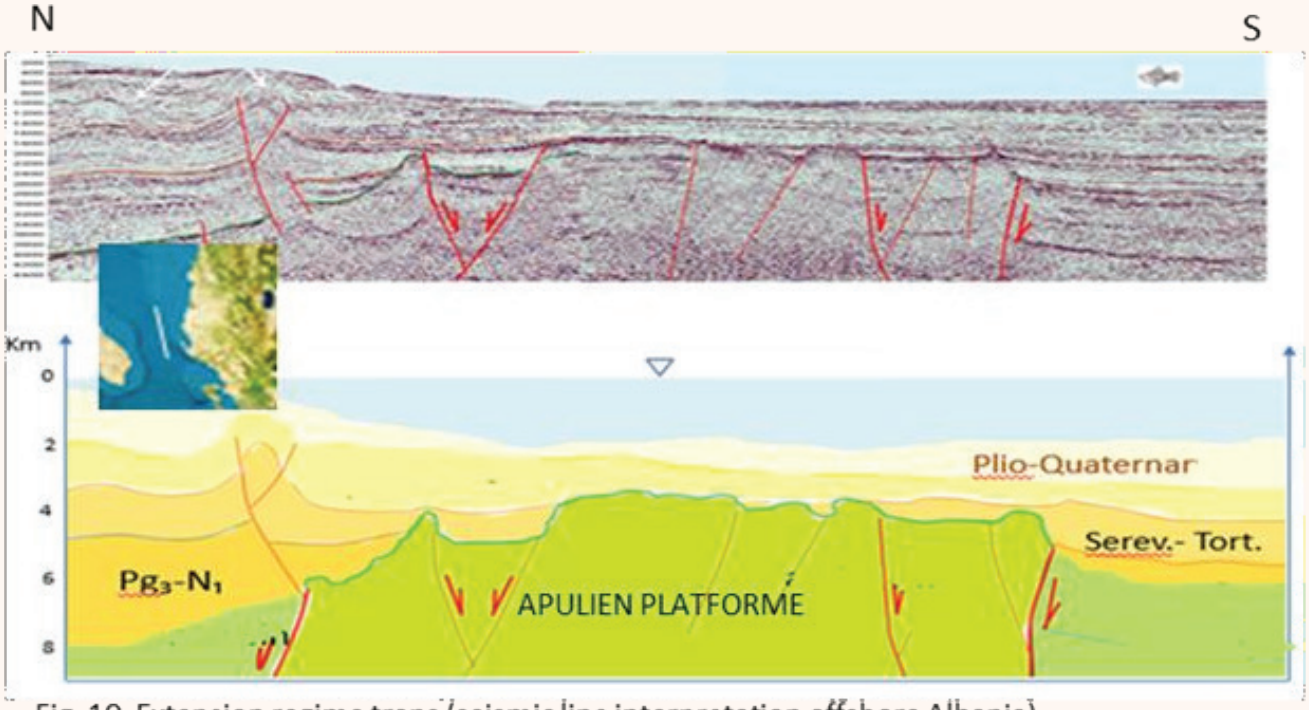


Fig. 10 Extension regime traps (seismic line interpretation offshore Albania)

In the Dumrea region, around the salt dome, traps are also partly linked to the diapirism of Triassic evaporates, forming among others, some salt dome flank traps and traps sealed by evaporates such as those proved in Pekisht-Murriz.

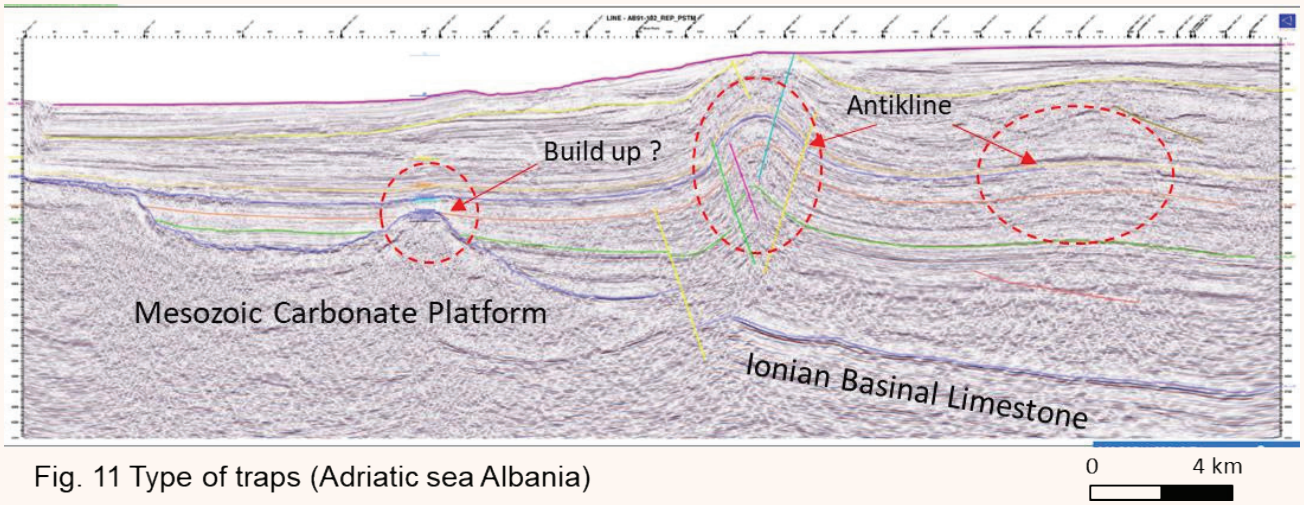


Fig. 11 Type of traps (Adriatic sea Albania)

5

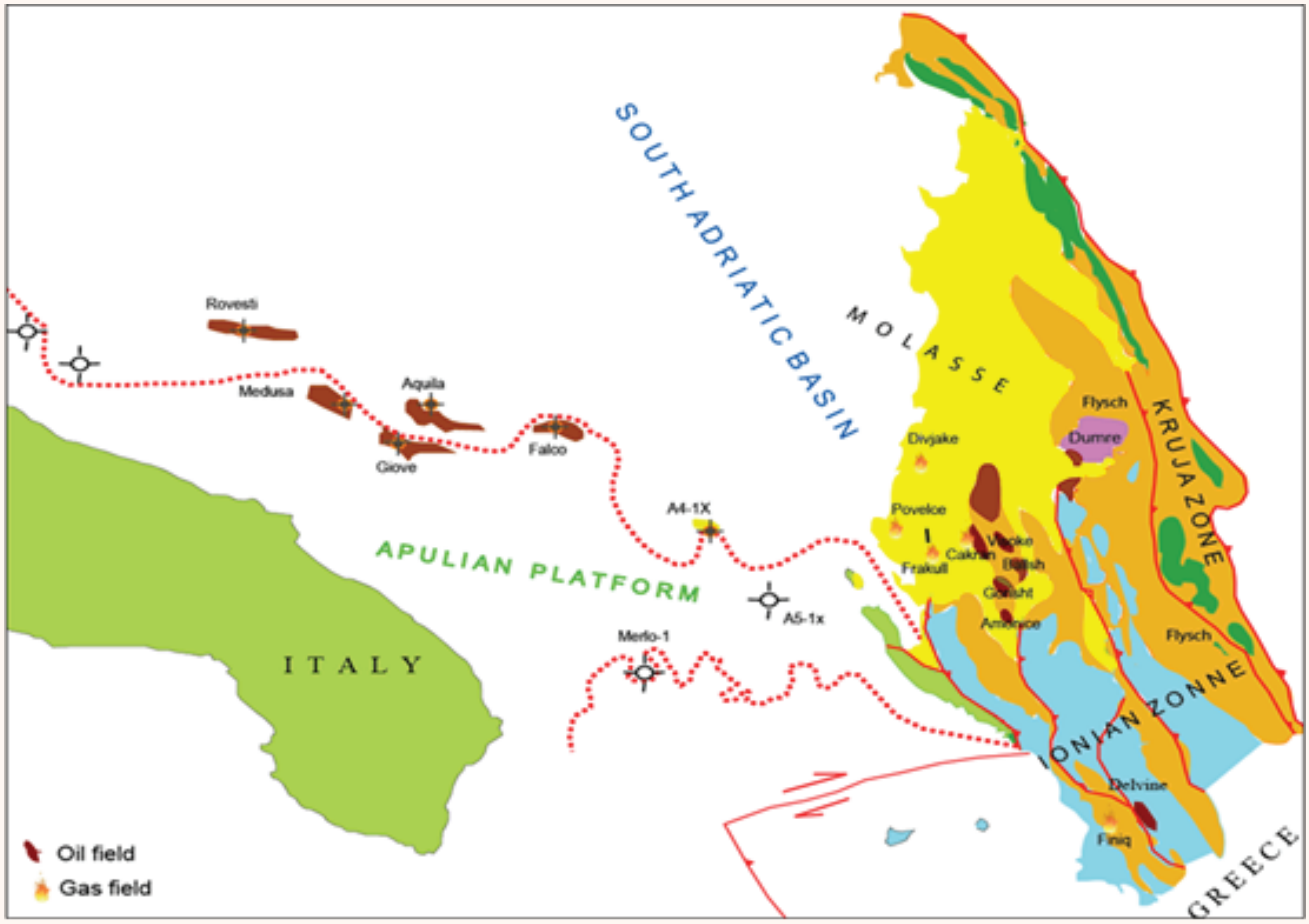
HYDROCARBON POTENTIAL IN ALBANIA

A BRIEF HISTORY OF EXPLORATION

5. HYDROCARBON POTENTIAL IN ALBANIA

A BRIEF HISTORY OF EXPLORATION

Oil exploration in Albania began in 1918 as a result of the interest shown by foreign companies from Italy, France, and Britain. At the very beginning, oil exploration was based on the oil seeps encountered in the eastern and south-eastern edge of Peri-Adriatic Depression, near the transgression contact of molassic deposits with the oldest ones in Kuçova and Patosi and in the western part of Ionian zone. Consequently, some oil bearing fields were discovered, such as: Drashovica (1918), Patos-Verbas (1926), Kuçova (1928), Patos-Marinza (1957).



Fig,12 **Oil and gas fields in onshore & offshore Albania region**

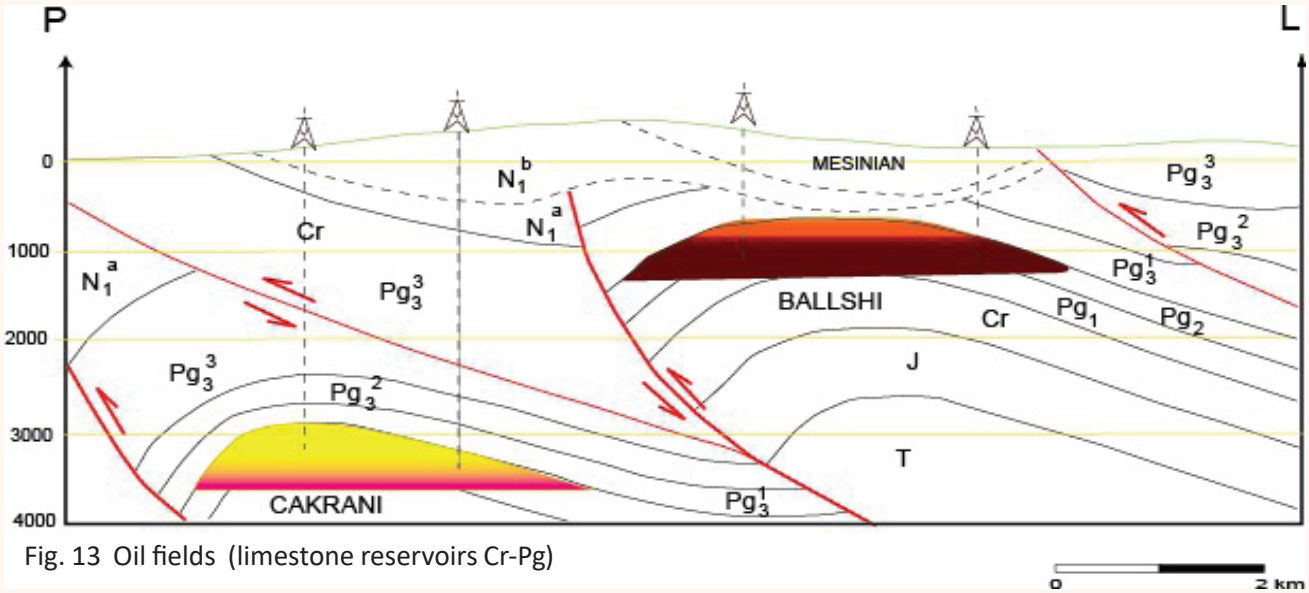


Fig. 13 Oil fields (limestone reservoirs Cr-Pg)

The oil pools in these oil fields are formed in sandstone reservoirs belonging to Oligocene flysch, Tortonian and Messinian age and produce mostly under dissolved gas drive.

After 1960, along with the expansion of the existing oil fields in the terrigenous section, oil and gas-bearing rock of the Cretaceous-Paleogene carbonate section were also tested and in 1963, the first oil-bearing field of Visoka was discovered in the carbonate section. The discovery was followed by other oil-bearing field located also in the carbonate section such as: Gorisht-Kuculi, Cakrani, Ballshi, Amonica, Delvina, etc. (Fig. 12, 13)

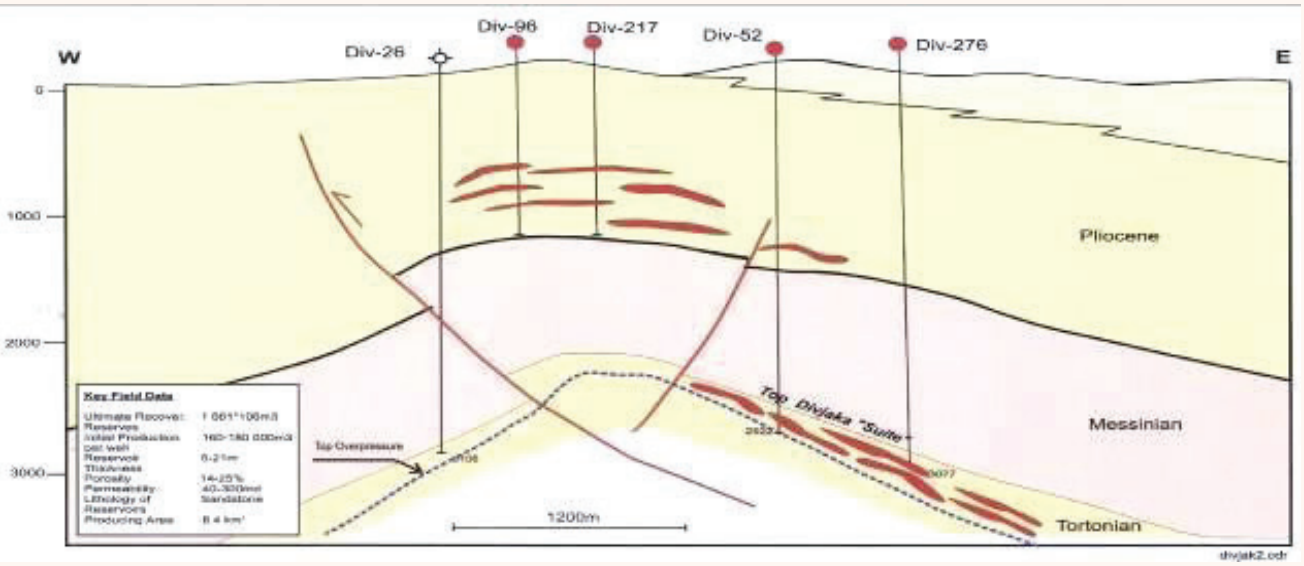


Fig. 14 Divjaka gasfield (sandstones reservoirs S.A.B.)

As far as the fluid phase content in the formation is concerned, oil pools in the carbonate section are represented by oil accumulations with dissolved gas and oil accumulations with gas or gas condensate cap with bottom water, gas cap and dissolved gas drive.

TABLE II. Oil and Gas fields in the Albanides

Field	Year of Discovery	Type of Reservoir	Reservoir Depth (m)	O/G Gravity (API)	Sulphur Content (%)
Drashovica	1918	Oligoc.flysch	100-200	Oil<10o	?
Patos	1927	Mess-clastics	0- 1200	Oil (12-24oAPI)	2.5-6
Kuçova	1928	Mess-clastics	0 - 1500	Oil (13-16oAPI)	4
Marinza	1957	Mess-clastics	1200-1800	Oil (12-35oAPI)	4-6
Visoka	1963	Cret/Eoc.Carb	800-1000	Oil (5-16oAPI)	5-6
Gorisht–Kocul	1965	Cret/Eoc.Carb	1000-2500	Oil (17oAPI)	6
Ballsh-Hekal	1966	Cret/Eoc.Carb	1000-3000	Oil (12-24oAPI)	5.7-8.4
Cakrran-Mollaj	1977	Cret/Eoc.Carb	3000-4500	Oil (14-37oAPI)	0.9
Finiq-Krane	1973	Cret/Eoc.Carb	800-2000	Oil (<10oAPI)	3.7-4.3
Delvina	1989	Cret/Eoc.Carb	2800-3400	Cond, 53 oAPI	0.7
Divjaka	1963	Tort/clastics	2400-3000	Gas &Condens	Na
Ballaj-kryev.	1983	Plioc/clastics	300-1700	Gas	Na
Frakulla	1965	Mess/clastics	300-2500	Gas	Na
Povelca	1987	Mess/clastics	1800-3500	Gas & condens	Na
Panaja	1988	Mess/clastics	2500	Gas	Na
Sqepuri	2001	Cret/Eoc.Carb	4695 TVDss	Oil (37oAPI)	2, 3
Shpirag	2013	Cret/Eoc.Carb	4600 TVDss	Oil (37oAPI)	0.3-6.7 mol%

Gas exploration in Albania began in 1955 and was concentrated on the Neogenic structures of Peri-Adriatic Depression. The first gas-bearing field was discovered in 1963 in the Divjaka structure, which was followed by the discovery of other gas-bearing fields such as: Frakulla, Ballaj-Kryevidhi, Panaja,

Trevllazer, Durrës, Povelçë, etc. The gas pools in all of the above- mentioned fields are related to the sandstone reservoirs of Serravalian-Tortonian to Pliocene inclusive.

The oil and gas-bearing fields discovered up to now are in the External Albanides, particularly in the Ionian tectonic zone and in the Peri-Adriatic Depression. Numerous and thorough works and studies made in this region indicate the exploration potential in this region both in depth and extent.

A summary of the Exploration History in Albania is represented in the table II, while the oil and gas fields location map is presented in the figure 12.

Some works and studies of general character indicate that exploration also exists even in the other tectonic zones of the External Albanides and Internal Albanides. Limited financial means have hindered explorations and investments in these areas and in particular, in the Internal Albanides, to test their potential.

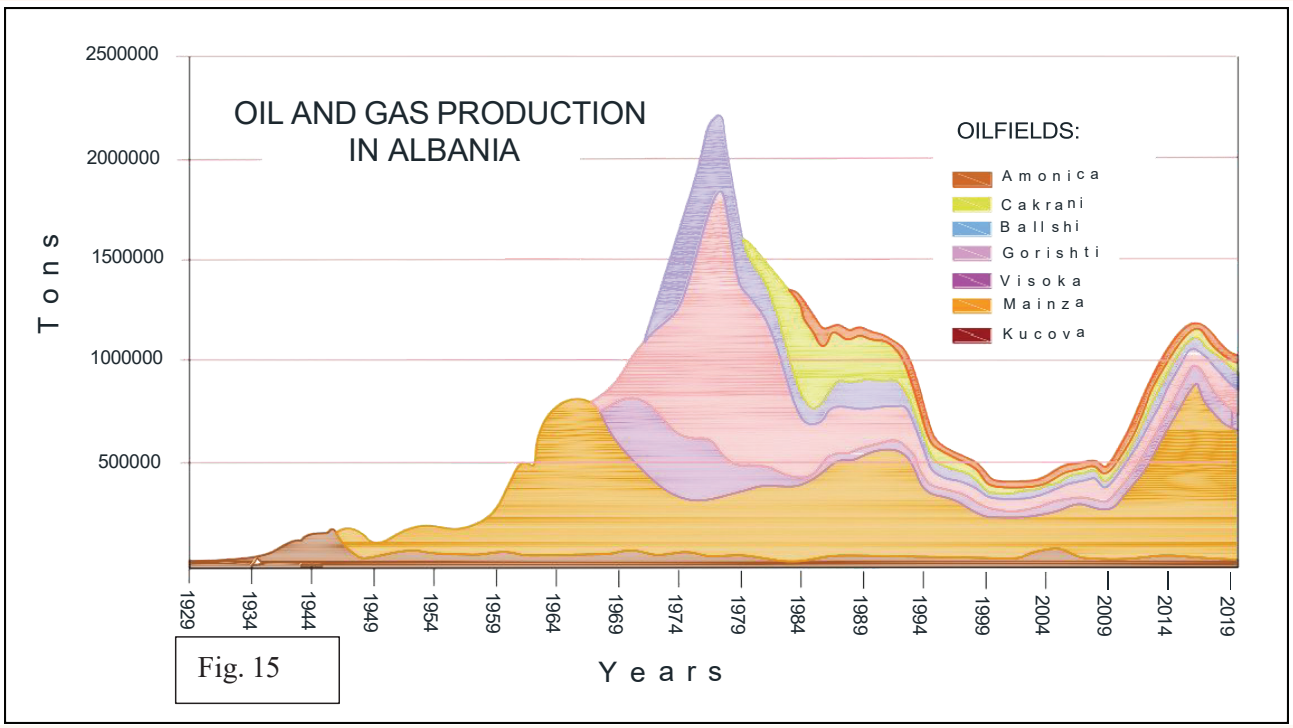


Fig. 15

The Albanian Government is interested in co-operation with foreign companies for the exploration and development of hydrocarbons across the Albanian territory.

From 1991 to the present, contracts have been signed and the following foreign companies have been involved in petroleum operations for oil and gas exploration:

Offshore:

Deminex, OMV, Agip, Edison Gas, Occidental Petroleum, Chevron, BHP Petroleum, Svenska Petroleum Exploration, Premier Consolidated Oilfields, Lundin Petroleum, Capricorn Albania, San Leon Energy, Beach Petroleum and Emanuelle Adriatic Energy.

Onshore:

Shell, ENI, Occidental Petroleum, OMV, Ina Naftaplin, Coparex, Lundin Petroleum, Premier Consolidated Oilfields, Enterprise, Clyde Expro PLC, MOL, Hellenic Petroleum, Anschutz, IPC, Petromanas Albania GmbH and Albanides Energy.

5.1 AVAILABLE DATA

2D seismic acquired by the National Oil Company, Albpetrol, from 1970 to 1993.

Total amount: **18680 km** Analog lines **12,080 km**, up to 4.5 sec; Digital lines **6,590 km,** 6 to 8 sec; Albpetrol reprocessedlines 7400 km, 2D seismic acquired by foreign companies from 1992 to 2006 (Fig. 16).

Offshore:
2D seismic 11124 km 3D seismic 700 km^2

Onshore:

2D seismic 2217 km Exploratory wells drilled by foreign companies (after 1992)

Offshore Wells

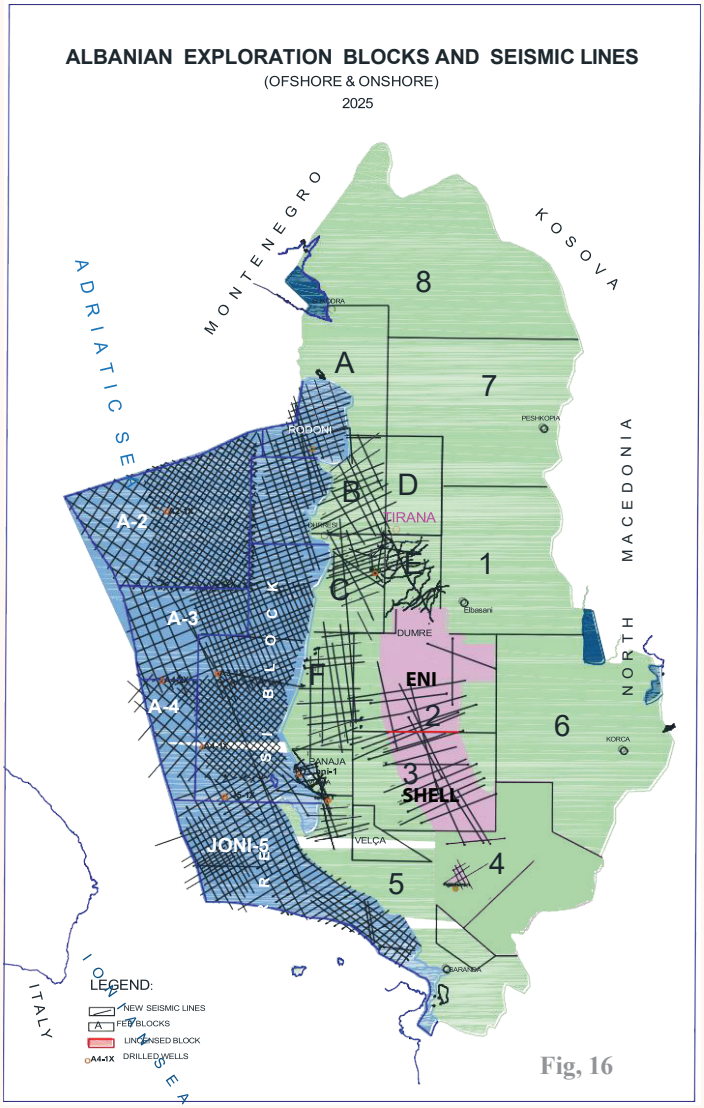
6 wells in total (1 well in Rodoni 1 block;1 well in Adriatiku-2 block; 1 well in Adriatiku-3 block; 2 wells in Adriatiku-4 block; 1 well in Joni-5 block)

Onshore Wells

17 wells in total
1 well in block “A” – Jub-1;
1 well in block “C” – Peza 1;
2 wells in block F – No. 5300 and No. 5350;
1 well in Dumre Block – Dumre 7;
1 well in block 2 –

Shpirag 1;

1 deviated well in block 2 – Shpirag ST;
1 well in block 2 – Shpirag 2;
1well in block 3 – Molish.1;
1 well in block 4 – Palokas;
1 well in block 5 – Kanina 1



Fig, 16

During the press release of November 4, 2013, Petromanas Energy Inc. and Royal Dutch Shell Plc. announced positive test results from Shpirag-2 well, confirming OXY discovery made almost 10 years ago in this structure (Shpirag-1). Test results proved that the Shpirag-2 well flowed at rates of 1500 to 2200 barrels per day oil equivalent (boe). The oil is a light one (35 to 37 degree API) and the hydrogen sulphide content (5000 ppm) was lower than the expected level. This discovery did materialize huge efforts done by companies that have been operating for years in Albania and at the same time it opened a real perspective for further explorations. All the data (seismic and drilling) available at AKBN archive are in the following formats and media:

Seismic Field data: 9 track magnetic tape, in SEGY, SEGB, SEGD format, 8mm, 3480, 3590, DLT cartridge Observer logs etc.
Processed data: hard copy, in film, on Tape 9 track, 8mm cartridge, 3480 and 3590, SEGY format
Well data: hard copy, digital (9 track magnetic tape and CD last format)

5.2 HYDROCARBON POTENTIAL

Based on geological studies and on seismic works, carried out by Albpetrol and other foreign companies in the recent years, it results that Albania has a considerable hydrocarbon potential and is a very promising area for further explorations both onshore and offshore.

ONSHORE

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. (Fig. 17, 18)

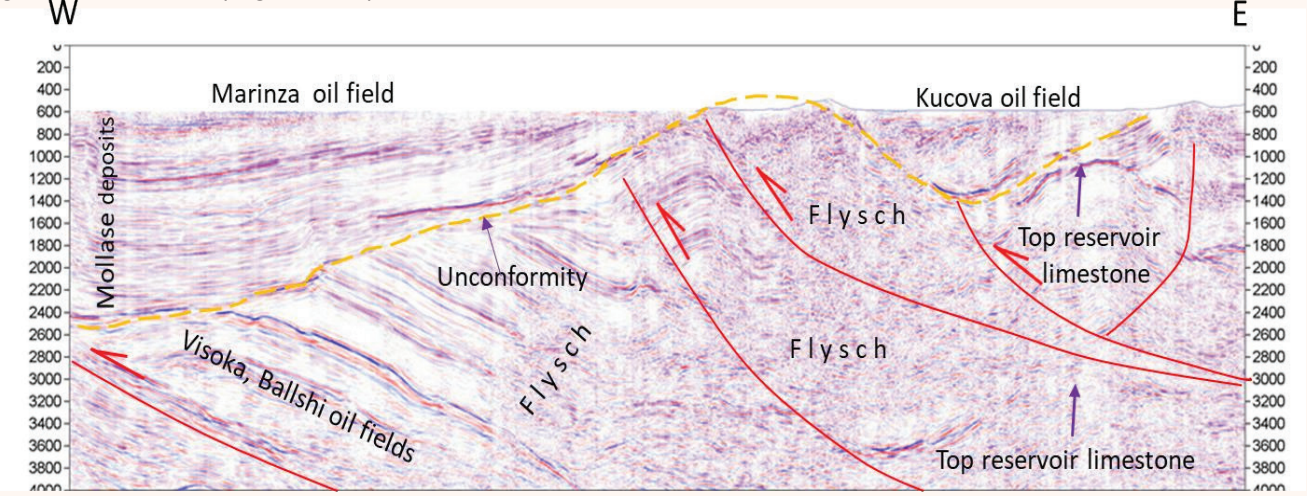


Fig.17 Migrated seismic line over Oil fields (cross-section)

Still there is enough room for further exploration for identifying the new possible sub thrust structures in onshore areas. Seismic lines above illustrate this model.

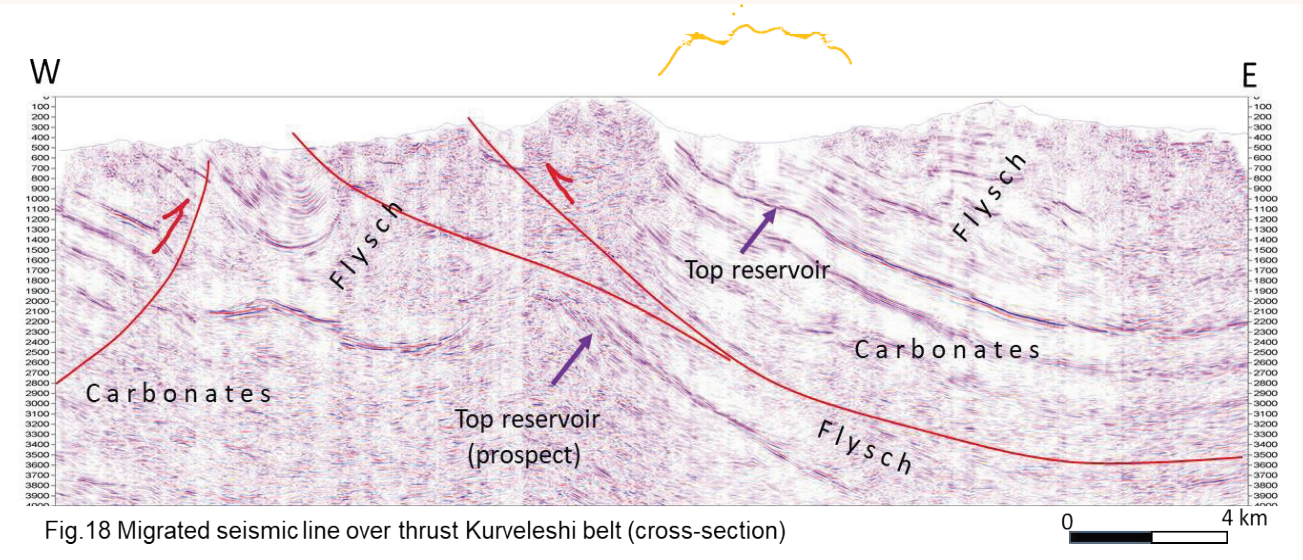


Fig.18 Migrated seismic line over thrust Kurveleshi belt (cross-section)

The possible 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.

Gas Potential discoveries could be found under the existing oil discoveries in the deeper levels, but the seismic information is not enough, to draw prospects. New reprocessing and acquisition of some more seismic lines are necessary for this target.

OFFSHORE

Oil Potential in the offshore area is related to the Possible Ionian carbonate structures and morphological highs of Apulia platform. (Fig. 19, 20)

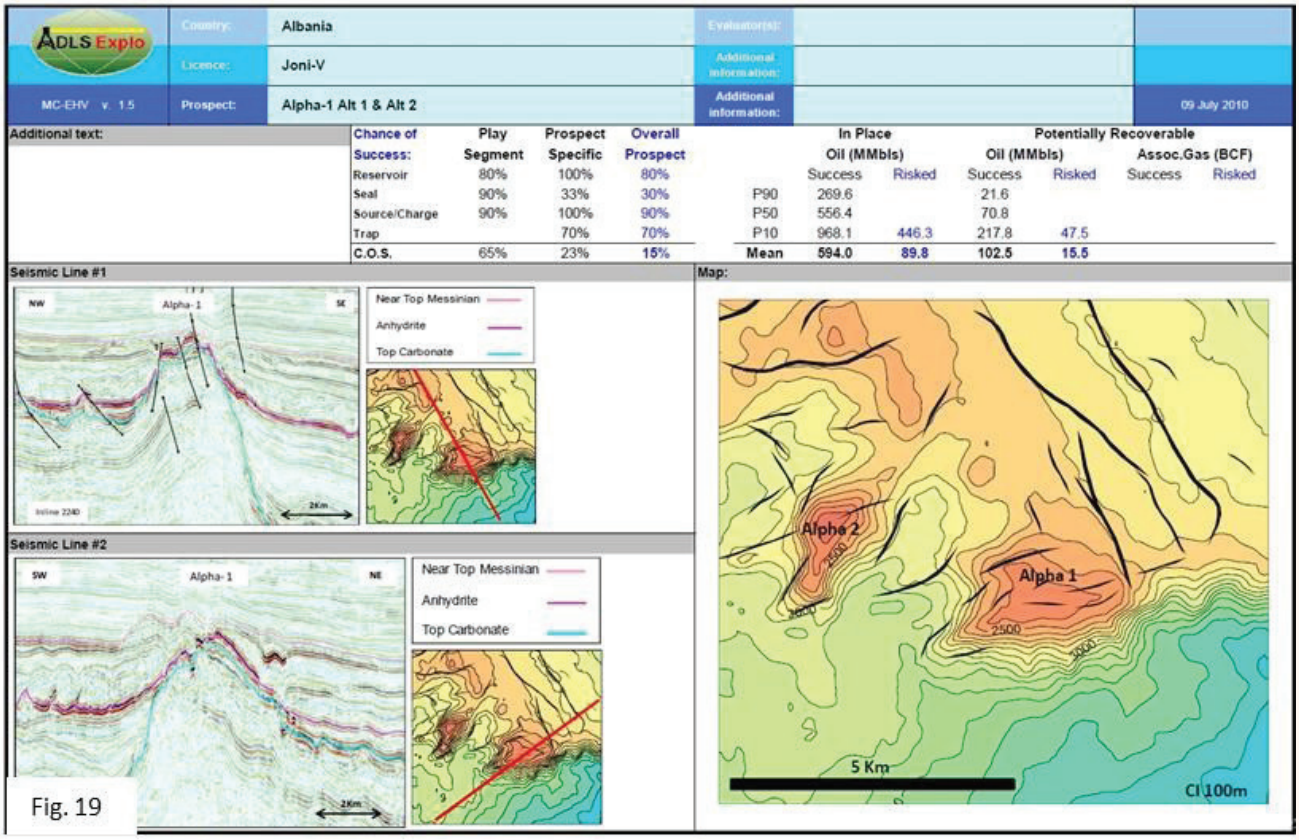


Fig. 19

In appropriate conditions and places offshore, there are possibilities for finding new and potential oil accumulations both in the clastic section (charged by the underlying limestone) as it was the case in A4-1x well, and/or in the platform carbonate reservoirs. See the following line.

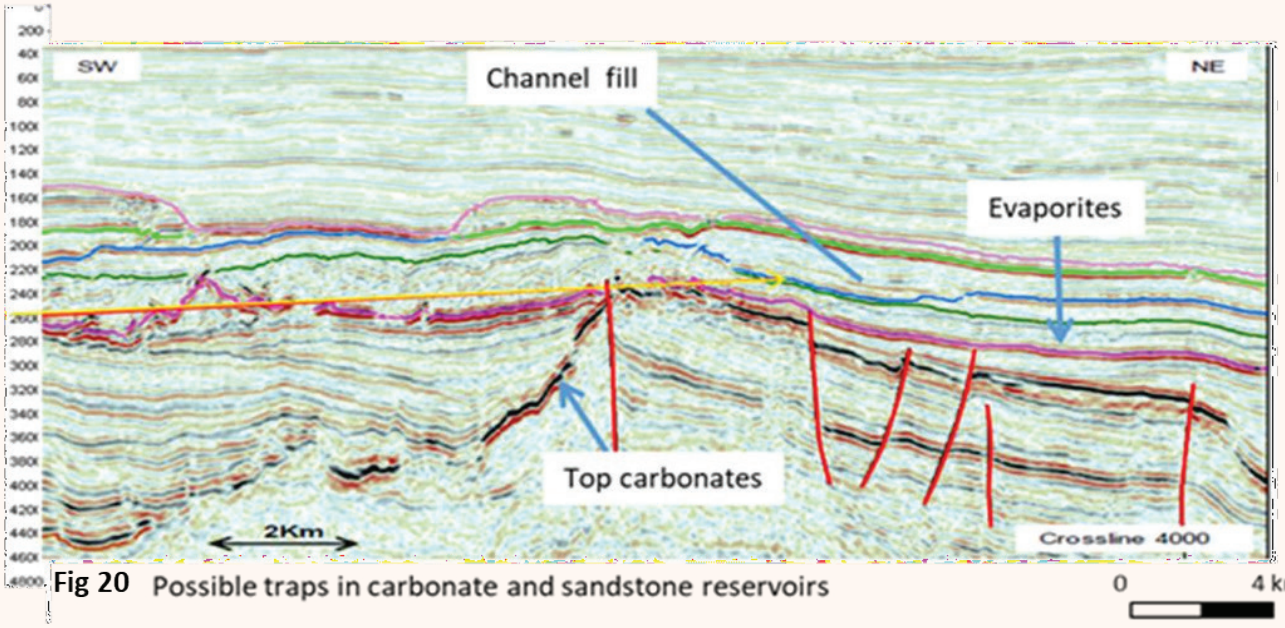


Fig 20 Possible traps in carbonate and sandstone reservoirs

Gas Potential is related to the Miocene–Pliocene folded structures, as identified in the offshore to be valid based on old seismic (1991) and confirmed by the new seismic recently acquired. Taking into consideration the fact that, the dimensions of the prognosed structures in offshore are considerably larger than their analog structures of the existing gas fields onshore, big reserves of biogenic and/or thermogenic gas is expected to be found in the area.

Thermogenic gas/oil

The thermogenic gas/oil play is confined to the Lower Messinian sequences pre-dating the depositions of the Messinian evaporate (Offshore, A41-X well discovery). (Fig. 21)

In onshore Albania, oil in the Messinian is mainly of a heavy and biodegraded type (Marinza field), as relatively early expulsion of oil in the Miocene and Pliocene from the underlying Mesozoic source rocks coincided with only a thin development of overburden capping the Messinian reservoirs.

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Biogenic gas play

Very high sedimentation rates helped preserve the organic matter under cool geothermal conditions. Syn-sedimentary tectonics (early trap formation) created favoring conditions for gas accumulations as early as diagenetic gas can migrate along the hydrodynamic gradient accompanying dewatering during compaction. (Fig. 21)

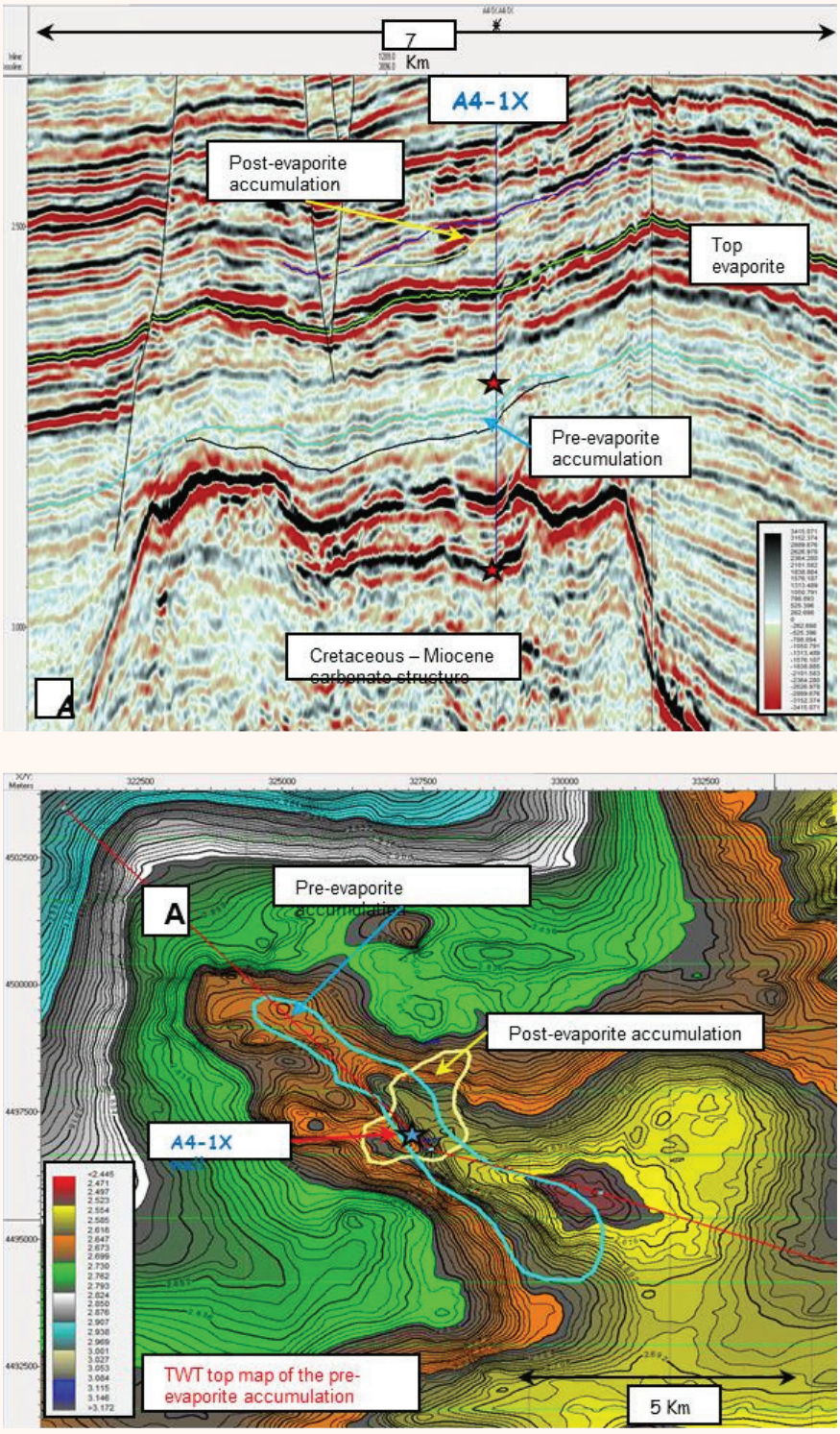


Fig 21 A4-1X prospect Durresi block

The biogenic gas production in onshore Albania comes from deep water turbidites reservoirs that for the most part occur in combined (structural-stratigraphic) traps.

Mid-Miocene and early Pliocene folding, and younger thrusting post-dated early, helped short distances migration of biogenic gas into these older stratigraphic traps.

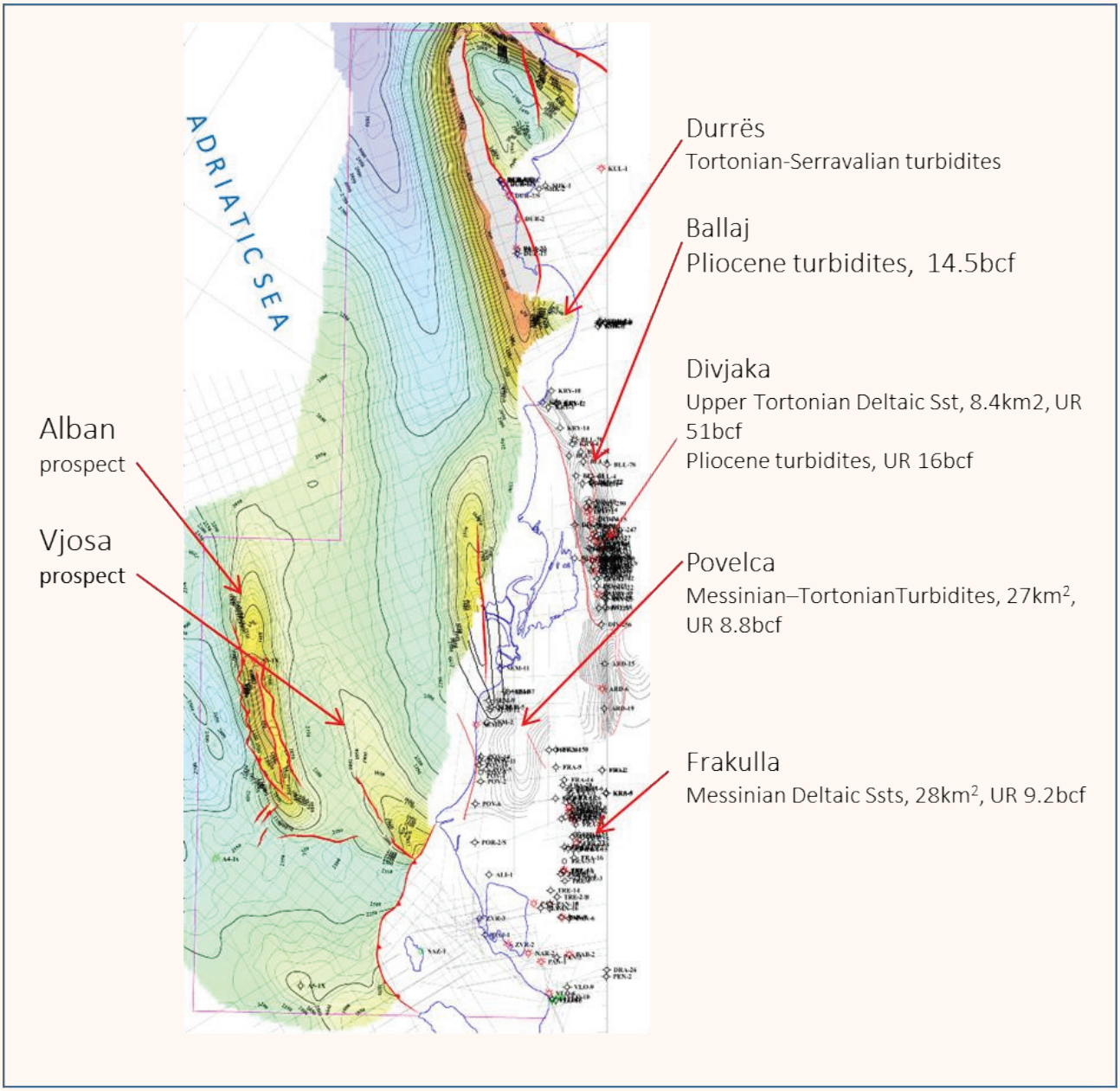
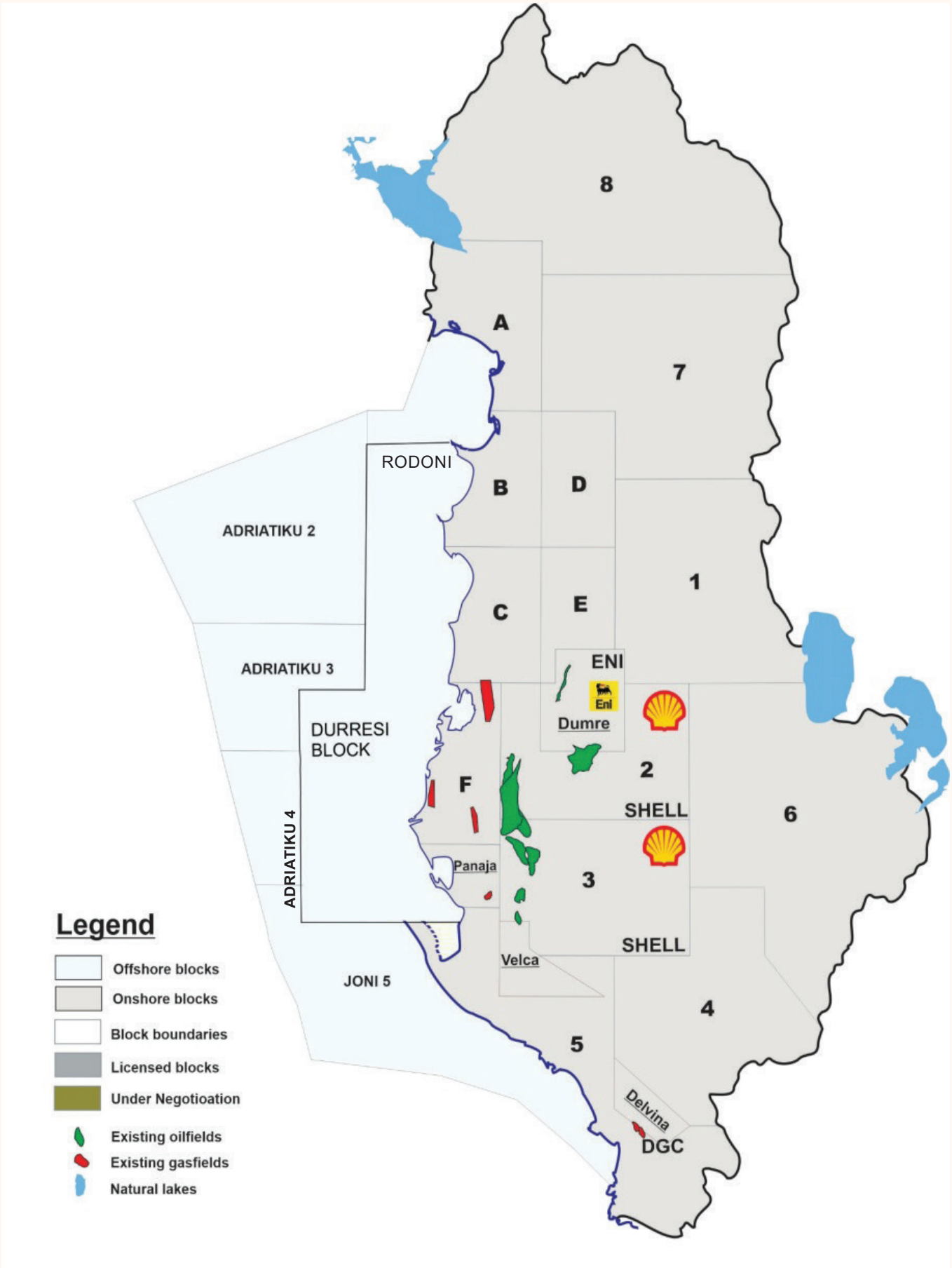


Fig. 22 Onshore Gas field discoveries as well as offshore prospects (OMW)

As a consequence, the gas bearing intervals were developed, for the most part, along the eastern anticlinal ramps, being closer to the sand fairways.

In the whole molassic basin Area, in the seismic lines there are indications for biogenic and thermogenic gas traps.

ALBANIA LICENSING SITUATION, DECEMBER 2025



E&P Opportunities in Hydrocarbons / Onshore Blocks

Blocks 2 & 3

Shell Upstream Albania BV (Operator 100%)
Shell is currently in the Appraisal Period.
Shell is analyzing all data obtained after the completion of SHP-5 testing.

Block Dumrea

Eni Albania BV is the operator with 100% of shares.
Effective Date: March 4, 2020.
The exploration period is 5 years, with 2 additional years approved.
Geofizyka Torun completed 256 km of 2D seismic acquisition/BGP conducted 210 km of reprocessing.
Drilling location has been determined/necessary preparations are in progress, aiming to begin drilling in the second quarter of 2026.

E&P Opportunities in Hydrocarbons / Albpetrol's License Agreements

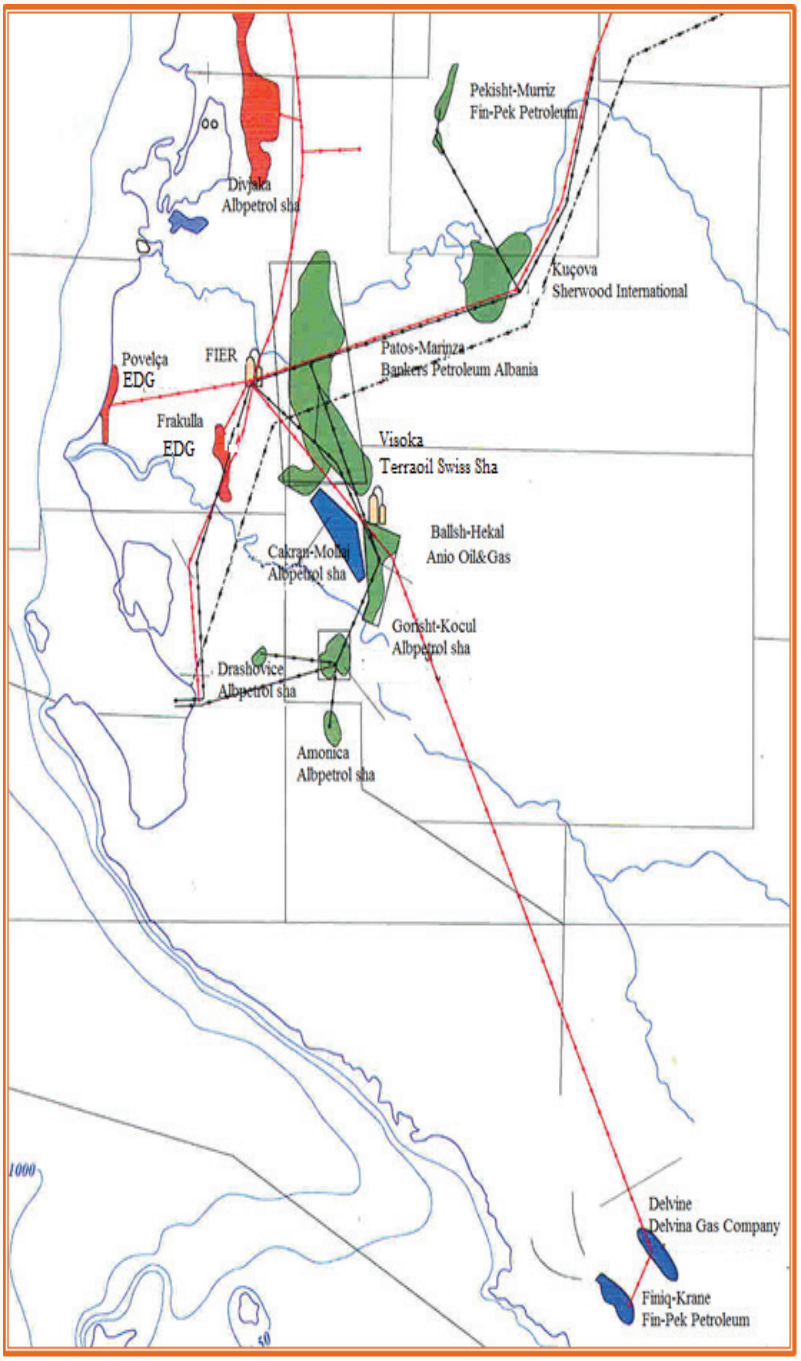
9 Licenses in force on existing oil & gas fields

No	Oil/Gas fields	Contractors	Licence issued
1	Patos-Marinza	Bankers Petroleum	2004
2	Ballsh-Hekal	Anio Oil	2007
3	Delvina	Delvina Gas Co.	2007
4	Kuçova	Sherwood International	2007
5	Visoka	United Terra	2009
6	Finiq-Krane	Fin-Pek Petroleum	2013
7	Pekisht-Murriz	Fin-Pek Petroleum	2013
8	Frakull	Energy Development Group	2022
9	Povelça	Energy Development Group	2022

The national oil company **Albpetrol** operates in five existing oil fields or parts of them: in a part of the **Patos-Marinza** oil field; in the **Cakran-Mollaj** oil field; in the **Gorisht-Kocul** oil field; in the **Amonicë** oil field; and a part of the **Kuçova** oil field. During the last six months of 2024, Albpetrol's average daily oil production was around **200 tons per day**.

Bankers Petroleum Albania Ltd, which accounts for approximately **85% of oil production in Albania**, has been actively implementing its development program for the **Patos-Marinza** oil field since 2004. This program is based on the approved and updated Development Plan (PoD) from 2016. In the last six months of 2024, the company achieved an average daily production of around **1,500 tons**.

Sherwood International Petroleum LTD has been operating in the **Kuçova** oil field since 2007 under a License Agreement granted by the Ministry, along with a Petroleum Agreement and the PoD approved in 2011.



E&P Opportunities in Hydrocarbons / Albpetrol's License Agreements

According to the License Agreement issued by the Ministry and the Hydrocarbons Agreement between Albpetrol and **United Terra**, the development program approved in 2016 for the **Visokë oil field** is continuing in line with the PoD approved in 2011. During the last six months of 2024, the average daily production was about **40 tons**.

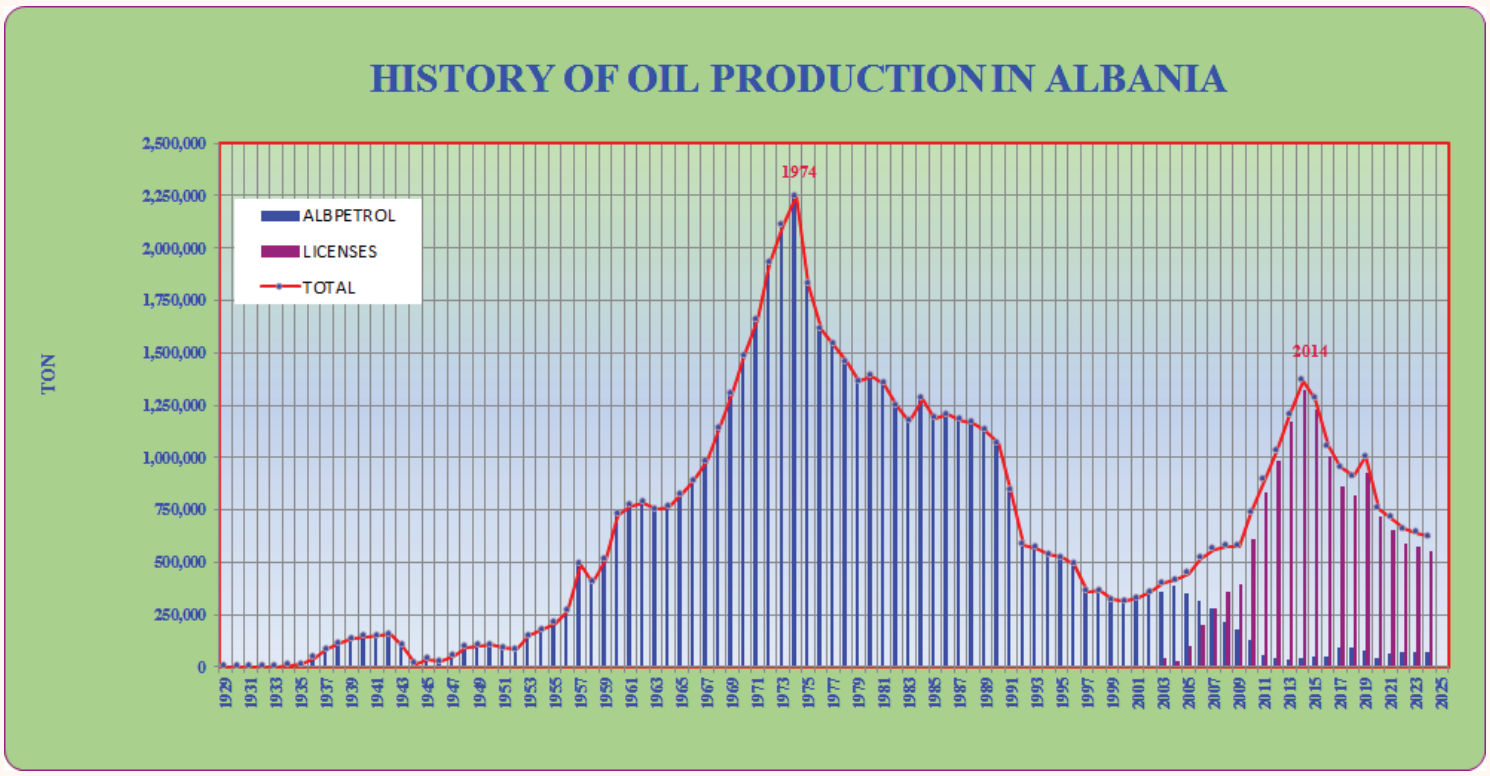
The license agreement for the **Ballsh-Hekal** oil field was signed in 2007, granting the license to the company **Anio Oil & Gas**. The company is continuing the development program according to the PoD approved in 2013. In **March 2025**, the company submitted for approval an amendment to the existing development plan, which is currently under discussion. During the last six months of 2024, the average daily production was about **60 tons**.

The Natural Gas License Agreement for **Delvina**, signed in 2007, is in the name of **Delvina Gas Company LTD**. This company currently conducts hydrocarbon operations based on the **Development Plan** approved in 2010. Meanwhile, it has submitted a **NEW Development Plan** as an amendment to the PoD approved at the end of 2010.

Hydrocarbon agreements for the **Pekisht-Murriz** and **Finiq-Krane** oil fields with the company **Fin-Pek Petroleum** have been operational since 2013, when the company was licensed. These are two very small fields, which together, during the last six months of 2024, had a low average production of around **3–4 tons per day**.

The two licenses for the existing natural gas fields in **Frakull** and **Povelçë**, signed with the company **EDG Natural Gas**, have just completed the Evaluation Phase (December 2024) and have expressed interest in proceeding to the **Development Phase**. The company has prepared **long-term development plans** for these two fields, which were approved in **February 2025**. So far, hydrocarbon operations leading to gas production have not yet begun.

E&P Opportunities in Hydrocarbons / Cumulative Oil Production



Oil production in Albania for 2024 was approximately 621 thousand tons.

6

SUMMARY OF THE LEGAL FRAMEWORK FOR PETROLEUM EXPLORATION AND PRODUCTION

LEGAL FRAMEWORK

Exploration, Development and Production of Hydrocarbons in Albania is governed by the "Law on Hydrocarbons (Exploration and Production)", no.7746, dated 28 July 1993, as amended, and Law No. 153/2020, dated 17 December 2020 "On the Fiscal System in the Hydrocarbon Sector".

The legal framework provides a considerable flexibility to the Government in negotiating the terms and conditions for entering a petroleum agreement with oil companies. At the same time, these laws provide enough incentives and flexibility to attract international oil companies and thus stimulate oil exploration in the country.

All the hydrocarbon deposits that exist in their natural state in the strata that lie within the jurisdiction of Albania are the exclusive property of the Albanian state.

"The Law on Hydrocarbons (Exploration and Production)" explicitly allows the Ministry of Infrastructure and Energy to enter into a Petroleum Agreement under which a petroleum company may be granted exclusive rights to explore and produce oil / gas within a certain zone / block.

The purpose of the Government is to negotiate terms and conditions with the Company, which is fair and balanced, taking into account the usual risk associated with exploration and the legitimate right of the state to revenue as the owner of natural resources. At the same time, based on fiscal law, the Albanian Government intends to encourage the development of small and marginal discoveries.

6.1. *Terms and Conditions of Production Sharing Agreements*

- According to "Petroleum Law", "Petroleum Operations" means all or any of the operations related to the exploration for development, extraction, production, separation and treatment, storage and transportation and sale or disposal of petroleum up to the point of export, or to the agreed delivery point in Albania or the point of entry into a refinery and includes natural gas processing operations but does not include petroleum refining operations.
- Hydrocarbons existing in their natural state are the property of the Albanian State. The Government represented by the NATIONAL AGENCY OF NATURAL RESOURCES (AKBN), authorizes the performance of petroleum operations by the National Oil Company (ALBPETROL) in its exclusive areas, or a Contractor in remainder of the territory of Albania.
    - AKBN is authorized to make available to interested oil companies the existing geological and geophysical data on the free areas in order to give oil companies the opportunity to evaluate the data before submitting applications.
- The contract type is the Production Sharing Contract (PSC) between AKBN, acting on behalf of the Albanian Government, and the Contractor.
    - According to the "Petroleum Law", "Production Sharing Agreement" means a Petroleum Agreement which provides for the recovery of Contract Costs from Petroleum produced in the Contract Area or from a proportionate part thereof, and for the division between the State and the Contractor of the balance of petroleum remaining after the recovery of Contract Costs in accordance with a scale or formula specified in the Petroleum Agreement.
- The Production Sharing Agreement includes provisions such as:
    - The performance of a minimum work program, backed by a performance guarantee.
    - The presentation of an annual work program and budget.
    - Preference given to local employment and supplies during petroleum operations, where these are competitive in terms of quality, availability and cost.
    - The opportunity for local service companies to bid and preference given to them when the offer is comparable or better than other third parties.
    - Indemnify the State or the Ministry against all claims made by third parties in respect of injury, loss or damage resulting from the conduct of any operation carried out by the Contractor or by any subcontractor.
    - "The Petroleum Law" deals with access to private land after giving the occupier and the owner a minimum time notice. However, the Contractor must pay fair, just and equitable compensation with regard to any disturbance or damage caused during the conduct of petroleum operations.

- The P.S.C. provides for the establishment of a training and administration fund, which is used for the training of AKBN employees, and for administrative purposes.
- The Contractor shall conduct petroleum operations in a safe and proper manner in accordance with generally accepted international petroleum industry practice and shall cause as less damage as is reasonably practicable to the general environment including (inter alias) the surface, air, seas, lakes, rivers, marine life, animal life, plant life, crops, other natural resources and property, and shall forthwith repair any damage caused to the extent reparable, and shall pay reasonable compensation for all damage which is beyond repair.

6.2 Technical Clauses

- Under the petroleum agreement the Contractor is authorized to conduct petroleum operations during an Initial Exploration period, which can be extended twice.
  - It is preferred that the Exploration Period includes a drilling commitment by the Contractor.
  - Exploration Period is 5 years from the approval of the Council of Ministers Decision that approves the PSC with the right to extend this period up to 2 years.
- If the Contractor declares a commercial discovery during the exploration period, it has the right to apply for a 3 years extension with the purpose of submitting the Appraisal Plan to evaluate its discovery in accordance with Petroleum Law.
- If the Contractor declares that the discovery is commercial he has the right to enter in the upcoming phase of development/production period of twenty-five years, which can be extended in accordance with the "Petroleum Law".
- During the exploration period, the Contractor is subject to minimum work programs and expenditure obligations. In the case of either the Initial Exploration period or the additional Exploration period expiring and the Contractor not having fulfilled its obligations for the said period, the Contractor must pay to the Government the monetary equivalent in respect of the work not carried out. All monetary obligations are expressed in US Dollars.
- Before the end of each Contract year, the Contractor must submit and present to AKBN the exploration program and budget for the next Contract year. AKBN may suggest modifications to the said work program and budget and the Contractor shall implement them when found in accordance with good international petroleum industry practice.
- In the event of a discovery, the Contractor shall notify AKBN and evaluation of this discovery will be carried out pursuant to an approved appraisal work program. After appraisal, the Contractor will declare to AKBN the commercial implications of the discovery.
- If the Contractor considers the discovery commercial, the area in respect of that commercial discovery is set apart from the Contract area as a Development Area. The Contractor prepares then a development plan, which is submitted for approval by AKBN.
- In the case of an oil discovery together with the flow of associated gas, the Contract considers the utilization of such gas. (Provisions concerning the flare and use of such gas either in petroleum operations or in the local economy are open for negotiations).
- Contractor has the right to develop and produce the natural gas discovered in the Contract Area. Preferably such gas will be utilized in the internal market or exported.
  - In case of a commercial Natural Gas discovery, AKBN and the Contractor will negotiate additional terms in the P.S.C, which will endeavor to ensure that the proportion of economic returns for both parties is similar to that for an oil discovery.
  - AKBN may process and utilize the natural gas with no compensation to the Contractor where the Contractor considers that either the natural gas is not required for use in petroleum operations, or there is no possibility of exporting it, or its utilization is not economical.
- Unitization
  - According to the "Petroleum Law", if a petroleum reservoir is located partly in the Contract Area and partly in another Contract Area and where it appears to the Ministry that gains in efficiency may be achieved through the joint development and

operation of that reservoir, the Ministry shall have the right to order the Contractors to develop and operate the reservoir jointly under an agreement entered into by them for that purpose.

- If at any time during the which a Petroleum Agreement is in force the petroleum bearing strata in the Contact Area, forming part of a single Commercial Discovery, overlap an area over which the Government of Albania has jurisdiction and in respect of which no contact or license has been entered into or is in force, the AKBN and Contractor shall enter into an agreement to enlarge the Contact Area accordingly and to provide for the proper development of the Commercial Discovery.

6.3 Cost Oil and Profit Oil Sharing

- All the expenditures related to the petroleum operations are recoverable only in the case of a commercial discovery but not before the start-up of production.
- Operating expenditures are recoverable during the year in which they are incurred.
- A negotiable set of a sliding scale of daily production for the part of oil referred to as “profit oil” can be used to share the profit. Based on that model, the oil from which costs are recovered is referred to as “Cost Oil”. The remaining part of production, which is referred to as “Profit Oil” is shared between AKBN and the Contractor according to the sliding scale (bbl/day) based on the “R” factor;
    - “R” Factor shall mean and be calculated as the ratio of CONTRACTOR’s cumulative receipts from the Effective Date until the end of the preceding Calendar Year to the CONTRACTOR’s cumulative expenditures incurred from the Effective Date until the end of the preceding Calendar Year.
- The Contractor is subject to tax on profit, according to the Law No. 153/2020, dated 17 December 2020 “On the Fiscal System in the Hydrocarbon Sector”, and the Royalty Tax.
    - The tax is at the rate of 50% of the realized profit and the Royalty is 10 %.
    - Cost limit is up to 85% on yearly basis.
- In compliance with the above mentioned Law, the AKBN takes the Government’s tax and/or its share of profit oil in cash or kind.
- The Contractor shall have the right to receive and retain abroad the proceeds from its export sales to the extent not required to meet on a current basis its local currency costs in Albania. The Contractor shall have the right to convert foreign currency into local currency at the generally applicable rate of exchange for commercial transactions.

6.4 Miscellaneous

Through Law no. 92/2014 “For Value Added Taxes in the Republic of Albania”, the Contractor is also offered facilities on VAT exemptions for the supply of services intended only for the realization of the hydrocarbon exploration phase carried out by contractors or subcontractors, certified as such by the National Agency of Natural Resources, as well as the supply of imported goods that contractor do for each other or their subcontractors serving the implementation of the exploration phase of hydrocarbon operations carried out by contractors or subcontractors working for these operations. Contractors and subcontractors are certified as such by the National Agency of Natural Resources.

Pursuant to the above provisions currently in the Republic of Albania is in force the Joint Guidance no. 17, dated 12.6.2015 “On the determination of the list of goods and services used in the conduct of the hydrocarbon exploration phase from the petroleum exploration companies that are exempt from VAT payment, as well as the custom duties” issued by the Minister of Finance (today the Ministry of Finance and Economy) and the Minister of Energy and Industry (today the Ministry of Infrastructure and Energy).

All international oil industry investments are fully protected (such as all foreign investors) under Law no.7764, dated 22.11.1993 “On Foreign Investments”.

6.5 MAIN TERMS AND CONDITIONS FOR APPLICATION UNDER PSC

The Ministry of Infrastructure and Energy through the National Agency of Natural Resources (AKBN) declare free onshore and offshore areas open for petroleum operation and invites applications for Production Sharing Agreements.
In accordance with the "Petroleum Law", No. 7746, date 28.07.1993, which authorizes the Ministry to enter into a Petroleum Agreement with foreign and local companies, in order to invest for petroleum exploration and production in territory of Albania, the Ministry Energy and Industry offers free areas for exploration.

Form of Agreement
Petroleum agreements will be in the form of Production Sharing Contracts signed between the Ministry of Energy and Industry, represented by the National Agency of Natural Resources (AKBN), and the Contractor. The most important items of PSA are given in the "Petroleum Law", No. 7746, date 28.07.1993, and other documents issued by Council of Ministers and Ministry of Energy and Industry.

Terms of the Agreement

Duration of Exploration Period

The duration of the exploration period is up to 5 years and can be extended up to 7 years in conformity with the "Petroleum Law". The exploration period is divided in three phases, with work obligations and financial commitments for each of them. The contractor can't follow the subsequent phase without completion of work obligations and financial commitments. The duration of each phase of Exploration Period is subject to negotiations.

Duration of the Development and Production Period

In case of a commercial discovery, the period for development and production of the area shall be twenty-five years and can be further extended as provided for in the "Petroleum Law".

Minimum Work Obligations and Financial Commitments

These obligations will be defined by the Contractor in its application to AKBN and are subject to negotiations before entering the agreement.

Training, Administrative and Signature Funds

The amount will be specified by the Contractor in its application and is subject to negotiations.

Cost Recovery and Petroleum Sharing

The terms for cost recovery and petroleum sharing will be specified by the contractor in its application, subject to negotiations with AKBN before the signing of the Agreement.

Currency, Exchange Control and Payments

The Contractor shall have the right to receive and retain abroad the proceeds from its export sales to the extent that they are not required to meet on a current basis its local currency costs in Albania. The Contractor shall have the right to convert foreign currency into local currency at the generally applicable rate of exchange for commercial transactions.

Bonus

Under the Petroleum Sharing Contract the Bonus is payable in various stages, including the signature bonus. The production bonus and the signature bonus per square kilometer are subject to negotiations.

APPLICATION PROCEDURE

1. Deadline for the submission of applications is 90 days after the publication of AKBN in its website. Discussions will commence directly thereafter with all companies that submitted offers provided that the Area is still available.

2. Address for Delivery:

   Agjencia Kombëtare e Burimeve Natyrore - AKBN, Bulevardi "Bajram Curri", Blloku "Vasil Shanto", Tirana, Albania

3. Method of Delivery:

   By sealed envelope delivered by registered mail, or by hand.
   The envelope must be clearly marked:
   Petroleum Exploration Project

CONFIDENTIAL

There is no application fee.

1. Presentation of applications shall be in accordance with the provisions of Item III below, taking into account the specific terms and conditions specified in the "Petroleum Law", No. 7746, date 28.07.1993, and the Law No. 153/2020, dated 17 December 2020 "On the Fiscal System in the Hydrocarbon Sector".
2. Any information or clarification for the submission of an application may be obtained from:
   AKBN, Bulevardi Bajram Curri, Blloku Vasil Shanto, Tirana, Albania.
   Att. Executive Director
3. After having examined the application received, AKBN will invite for negotiation the applicant in due time. It is the intention of AKBN that once contracts are negotiated and agreed upon by both parties, they will be entered into as soon as possible.

FORM OF PRESENTATION OF APPLICATIONS

1. An application will be presented in a sealed envelope.
2. An applicant may present applications for more than one Area, but each application will be made in a separate envelope.
3. A company or a group of companies may apply for a contract
4. An application shall contain the following:

   4.1 The contract area to which the application applies.
   4.2 In respect of each applicant:
   - 4.2.A The name of the applicant in full.
   - 4.2.B The nature of its business.
   - 4.2.C The place of incorporation.
   - 4.2.D The countries in which the applicant or applicants operate.
   - 4.2.E Evidence of the registration of the company, financial standing and technical qualifications of the applicant, including the most recent audited accounts, and those for the previous three years, of the applicant and of any corporate body having control of such applicant.

1.3. The main terms proposed by the applicant in respect of the major aspects of the model Production Sharing Agreement i.e.

- 4.3.A Duration of exploration periods.
- 4.3.B Minimum exploration work obligations and financial commitments.
- 4.3.C Training.
- 4.3.D Cost recovery and the net profit oil for Contractor.

4.4. Each application may contain the applicant's technical evaluation of the area and an explanation of the adequacy of the proposed minimum work commitment in support of the Contractor's exploration concepts for the area.

For more and detailed information please contact in the following address:

Address: Bulevardi “BajramCurri”, Blloku “Vasil Shanto”, Tirana, Albania.
Web: www.akbn.gov.al
E-mail:info@akbn.gov.al
Tel. +355 (0) 4 225 7117

AGJENCIA KOMBËTARE E BURIMEVE NATYRORE
NATIONAL AGENCY OF NATURAL RESOURCES

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