

# Gas Master Plan for Albania & Project Identification Plan Their Recent Developments

**Prof. As. Dr. Stavri Dhima**  
**Head of Petroleum Monitoring, Permits and Licencing**  
**Gen. Directorate of Regulatory and Compliance in Infrastruc.**  
**Ministry of Infrastructure and Energy,**  
**ALBANIA**



**WORKSHOP ON WB GAS INFRASTRUCTURE**

**24th MAY2014**  
**VIENNA, AUSTRIA**

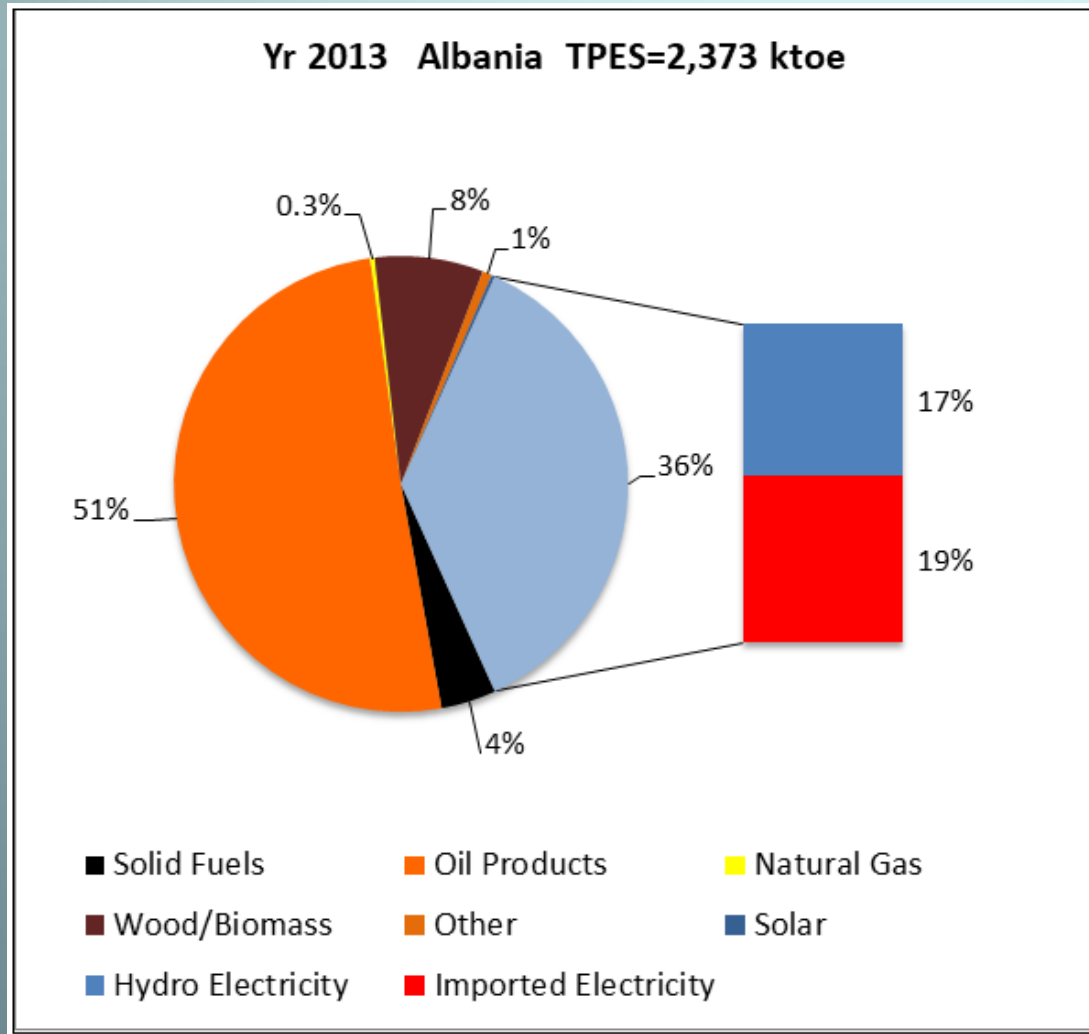
- 1.- What is the energy situation in Albania?**
- 2.- Gas Master Plan for Albania & Project Identification Plan.**
- 3.- Recent developments on gasification of Albania.**
- 4.- Why international Natural Gas connections should take advantage from connection and crossing Albania?**

# Main Pillars of Albania's Energy Policy

- **Enhanced energy supply security.**
  - Domestic resources
  - Reliable
  - Sustainable
  - Efficient
  - Environmentally friendly
  - Cost effective
  - Competitive
- **Function as a regional energy center**
- **Contributed on the development of a safe and secure energy network in the South East Europe**
  - Gasification to diversify and to increase energy security of supply
  - TAP project contribution as a part of Southern Gas Corridor

# 1.- What is the energy situation in Albania?

# What is the energy situation in Albania?



**The present and future Energy Mix for Albania has been evaluated with reference to the implementation schedule, assuming full implementation, of the Gas Master Plan for Albania.**

**In 2013 Energy Supply the gas contribution has been only 0.3%, based on local natural gas and associated gas production.**

# What is the energy situation in Albania?

## Natural gas scenario for Energy Supply

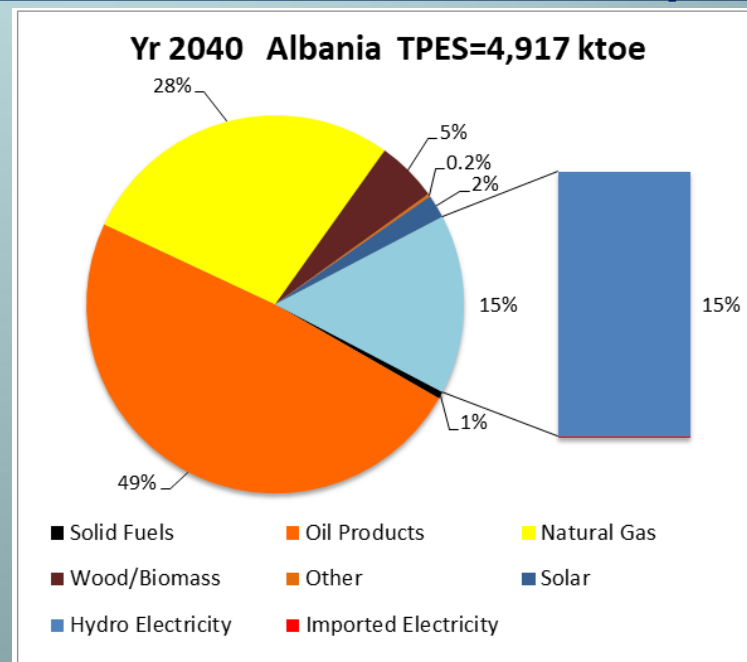
• Calculation of total energy supply was done with the assumptions that Natural Gas will primarily replace 100% of the imported electricity, the remaining natural gas energy will replace 20% of wood energy and the rest will replace oil products.

• **In the case of heavy industry and anchor loads**, such as refineries, it is assumed that natural gas energy will primarily replace oil products.

Furthermore, assumptions were made for the efficiency of CCGT plants in generating electric energy : this efficiency was assumed to be 60%,

Based on the above, below Tables present the Total Final Energy Supply by sector and fuel type in Albania for the natural gas scenario. The gas contribution will arrive up to 28%

	2013	2020	2025	2030	2035	2040
Solid-fuels	-93	-93	-79	-41	-34	-30
Oil-products	-1,200	-1,424	-1,697	-2,054	-2,302	-2,393
Natural-gas-incl.-CCGT	-8	-242	-458	-833	-1,060	-1,371
Wood-biomass	-182	-255	-281	-290	-287	-257
Other	-16	-18	-19	-18	-18	-12
Solar	-6	-22	-31	-43	-55	-99
Hydro-electricity	-409	-623	-769	-778	-754	-755
Imported-electricity	-454	-252	-34	-0	0	-0
<b>Total</b>	<b>-2,367</b>	<b>-2,928</b>	<b>-3,369</b>	<b>-4,057</b>	<b>-4,509</b>	<b>-4,917</b>



# What is the energy situation in Albania?

## Historic and Present Situation of the Albanian Petroleum Sector

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, 1928 respectively **Kucova and Patosi oil fields** related to Messinian clastic reservoirs were discovered.

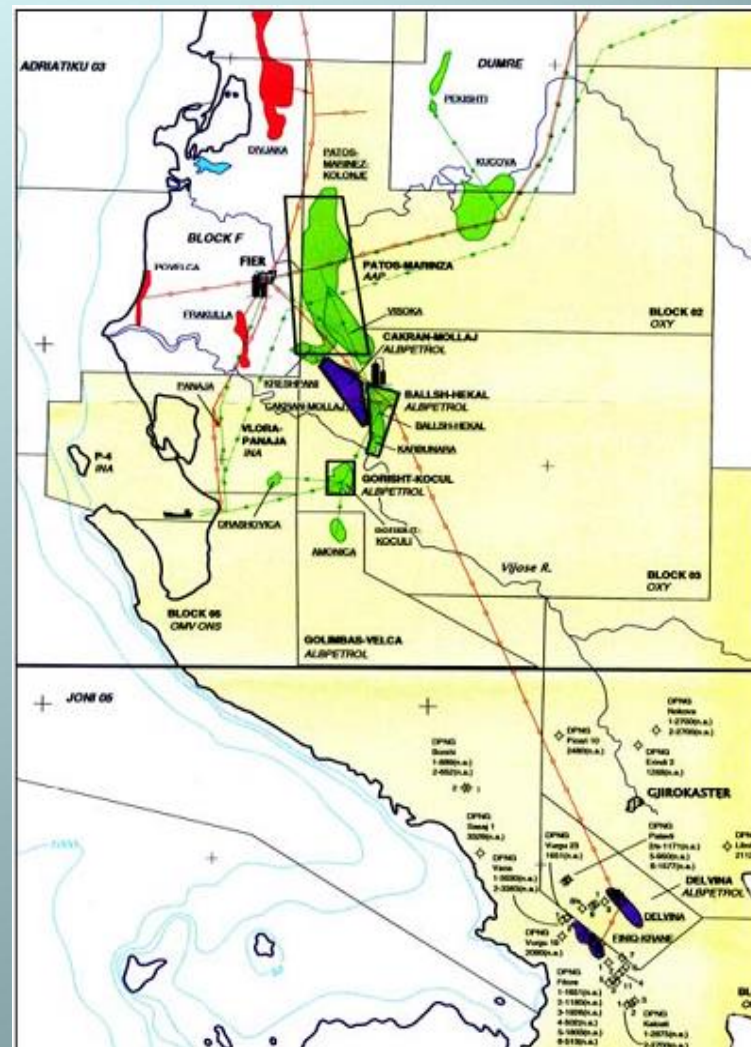
**Marinza** as the biggest oil field in Albania related to Messinian-Tortonian clastics reservoirs was discovered in 1957.

**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).

**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 **Durresi** (1988) were discovered.

**Gas production reached its peak in 1982 with 0.937 Bcm/year.**

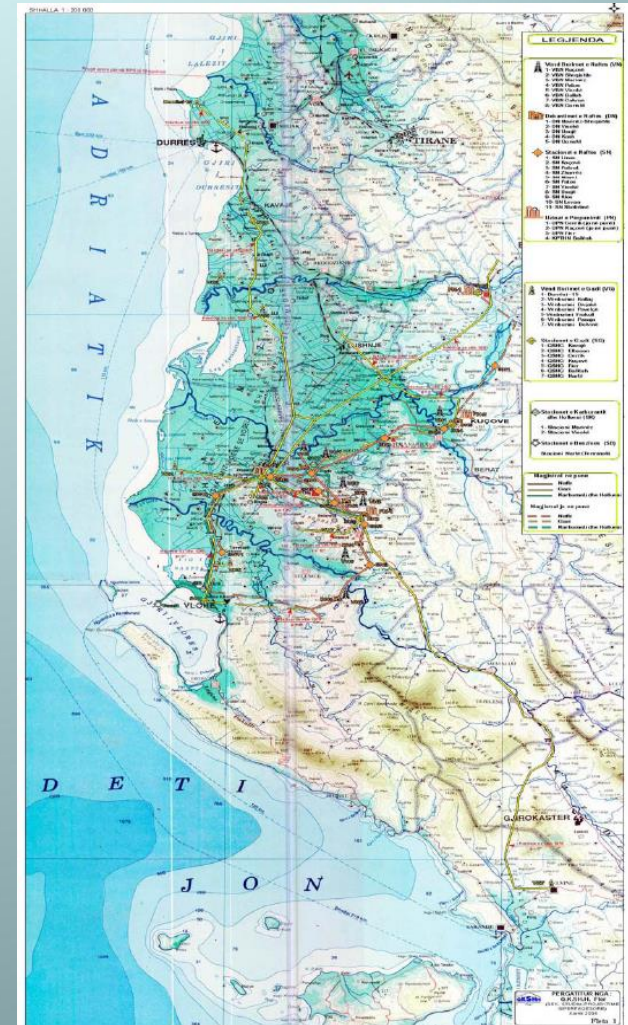
The cumulative production of N-G estimated at 3.15 Bcm, while the associated gas is at 8.7 Bcm.



# What is the energy situation in Albania?

## Historical development of transport infrastructure and the import and export of oil, gas and their derivatives.

- ▶ Infrastructure Network on natural and associated gas transport has had a broader extension than oil transport infrastructure, which is conditioned by the greater geographical extension that have gas fields, starting from Durres to Delvina.
- ▶ Existing Gas Pipeline Network has a length of about 410 km and connects all existing gas fields (Divjaka, Frakulla, Povelça, Ballaj, Delvina) and existing oilfields that have significant amounts of associated gas.
- ▶ Over the last decade due to low gas production, some of gas pipelines aren't in operation, which has brought their damage.
- ▶ The current pipeline network in Albania is of a low pressures one, and can not serve as supply network in the case of the international gas network connection.



Oil and Gas Pipelines network in the Albanian Territory



## **2.- Gas Master Plan for Albania & Project Identification Plan.**

# **MIE Gas Master Plan for Albania & Project Identification Plan.**

## **Main goals for Gasification of Albania**

- **Linking Albania with the international gas network** according to the best option (Eurasia Gas Corridor and Energy Community Gas Ring)
- **Preparation of the necessary Albanian legislation for the gas sector** in compliance with European legal framework (Regulatory and Investment framework reliability)
- **Development of national gas resources and national gas infrastructure**
- **Restructuring the existing pipeline system** for gas transmission in Albania
- **Management of the Albanian gas market**
  - **Use of natural gas as an alternative energy source** and for the production of electrical energy with gas fired thermal power stations-
  - **Development of underground gas storage reservoirs and LNG Terminals projects.**

# MIE Gas Master Plan for Albania & Project Identification Plan.

## Albanian Gas Master Plan

- ❖ **WBIF has approved a fund of 1.1 Million Euro** to finance the preparation of the Albanian Gas Master Plan, within two next years.
- ❖ **Albanian Gas Master Plan is of great importance** not only for the Albanian Energy sector, **but for Albanian overall development as well.**
- ❖ **Albanian Gas Master Plan consider and affect the developing of the gas sector or the gasification of the neighbor countries** (Monte Negro, Kosovo, Macedonia, Greece), and of the region, as well.
- ❖ **The Consultant COWI –IPF4 has completed the preparation of the GMPA project on March 2017.**



# Gas Master Plan for Albania & Project Identification Plan.

## Demand and Supply Assessment Report (Part of the Gas Master Plan)

Demand and Supply Assessment Report (Jun 2016)

- > Anchor Loads
  - > 684 mcm by 2040
  - > 978 in case Fertilizer plant is built
- > Industry (including Transportation & Agriculture)
  - > 688 mcm by 2040
- > Service
  - > 520 mcm by 2040
- > Residential
  - > 959 mcm by 2040
- > Climate Change
  - > Temperature increase 3.7° (summer) & 2.1° (winter) => 6.2% energy decrease

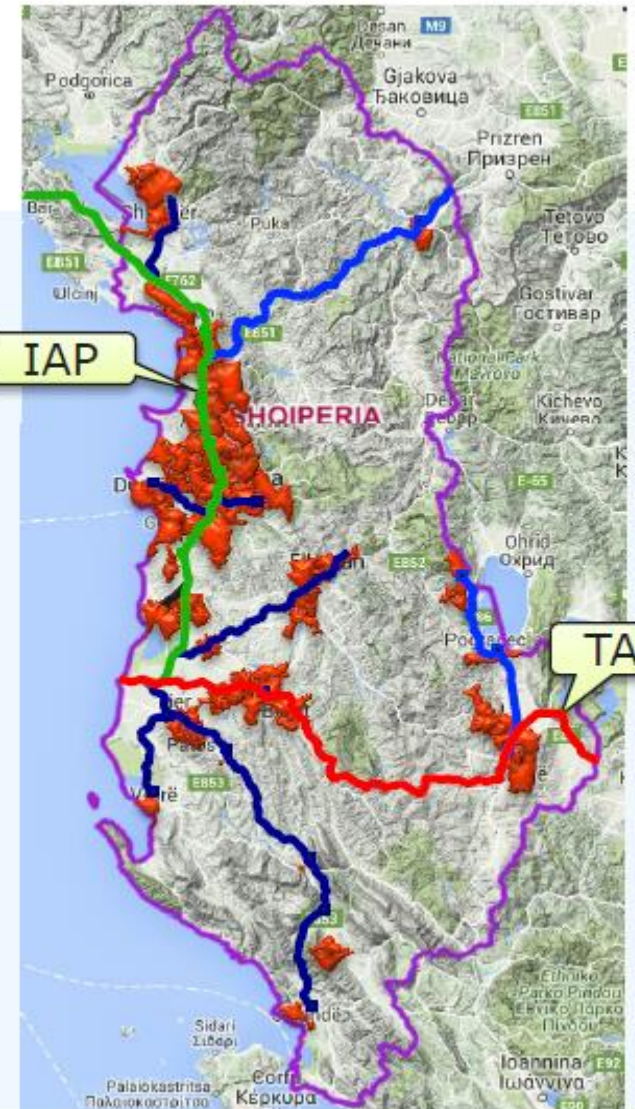


# Gas Master Plan for Albania & Project Identification Plan.

## Gas Master Plan of Albania (GMPA)

GMP Report (Nov 2016)

- > Based on previously mentioned reports
- > Design of Infrastructure Network
  - > 100% Anchor Loads, 90% Industry, 81% of total demand
  - > Supplies up to 1.8 bcm/year (in 2040)
- > Capillary assessment of all branches
  - > 4 scenarios agreed with the PSC & 3 variants
  - > CAPEX, OPEX & Consumption
  - > One-by-One & Combined
- > PIP Prioritization & Work Schedule
  - > Two scenarios (with and w/o IAP)



# Gas Master Plan for Albania & Project Identification Plan.

## Strategic Environmental Assessment (Environmental Declaration)

### Strategic Environmental Assessment

- > Process
  - > Law 91/2013 & bylaws 219/2015, 620/2015
  - > Directive 2011/92/EU, Directive 2014/52/EU, Espoo, Kiev
- > Methodology
  - > Best guides from EU, UK, Ireland, Portugal
- > Criteria
  - > Biophysical
  - > Climate change
  - > Infrastructure
  - > Social Issues
  - > Cultural Heritage

Protected Areas



Emerald Network



# Gas Master Plan for Albania & Project Identification Plan.

## The potential areas for developing the gas transmission and distribution pipeline system

The potential natural gas consumption by sector was forecasted as follow

- **Future potential natural gas consumption for electricity generation could be around 770 mcm in 2040**, and forecasted natural gas consumption **in refineries in 2040 could be around 89 mcm.**

- **Forecasted total useful thermal energy demand in households, services and industry of Albania** that can be replaced by natural gas is distributed by prefectures and then **by LGU's of Albania as future potential natural gas consumption (about 2,167 mcm in 2040, including agriculture and transport sector)**

A realistic potential area to develop the gas distribution network **include 85 LGUs with gas consumption corresponds to 77% of the total Albania for the year 2020 and the 82% for the year 2040.**



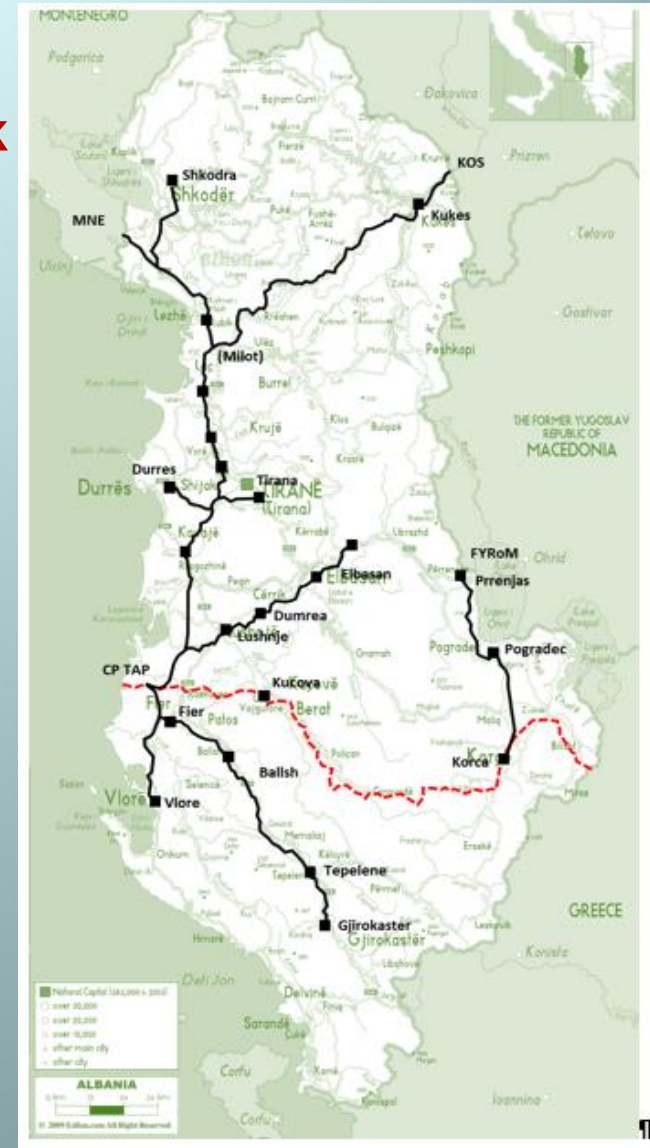
*Municipalities viable for further screening for gasification*

# Gas Master Plan for Albania & Project Identification Plan.

## The proposed gas transmission network

The proposed gas transmission network, as it is presented in this Figure can be divided in five main branches:

- **The North branch**, starting from connection point with TAP (near Fier) and going towards Shkodra and the MNE border crossing point,
- **The Elbasan branch**, starting from connection point with TAP (near Fier) and going to Elbasan through Lushnja and Dumrea,
- **The South branch**, serving the areas of Fier, Vlora, Ballsh, Tepelena and Gjirokastra,
- **The East branch**, connecting the areas of Korça, Pogradec, Prrenjas and FYRoM,
- **The Kukës/Kosovo branch**, starting from Milot and ending at the Albanian – Kosovo border point near Kukës.

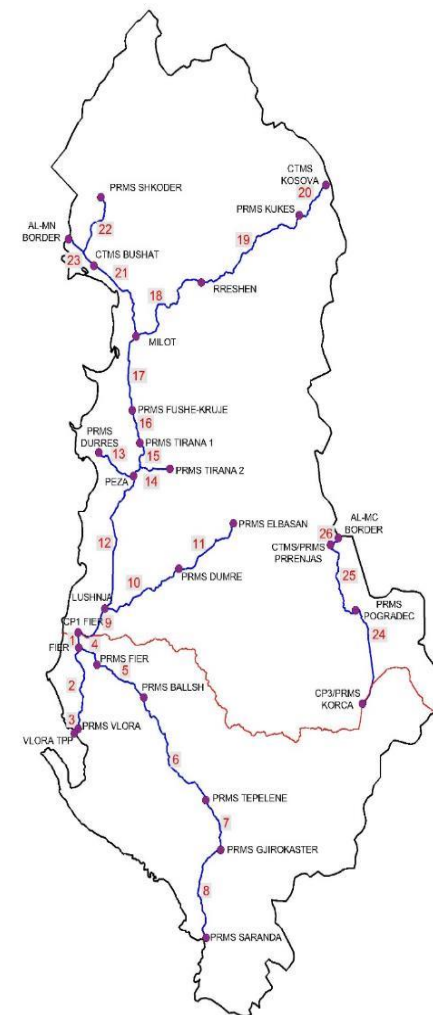




# Gas Master Plan for Albania & Project Identification Plan.

## Planned branches of the Albanian gas transmission system

- ◆ The lengths of planned branches of the Albanian gas transmission system is around 698.3 km.
- ◆ The gas transmission system of Albania is laid in a way to enable the supply of selected 85 LGU's, with the ability to provide the supply of Kosovo and Macedonia.
- ◆ It is assumed that the gasification of Albania is starting and developing further from TAP as a primary infrastructure for gasification. Since the most LGU's with higher consumption are located in the coastal, western part of Albania, the territory through which part of the planned IAP runs, this route was used as a main backbone of the Albanian gas transmission system.



Pipeline sections

# Gas Master Plan for Albania & Project Identification Plan.

## Potential Natural Gas Consumption by 2040

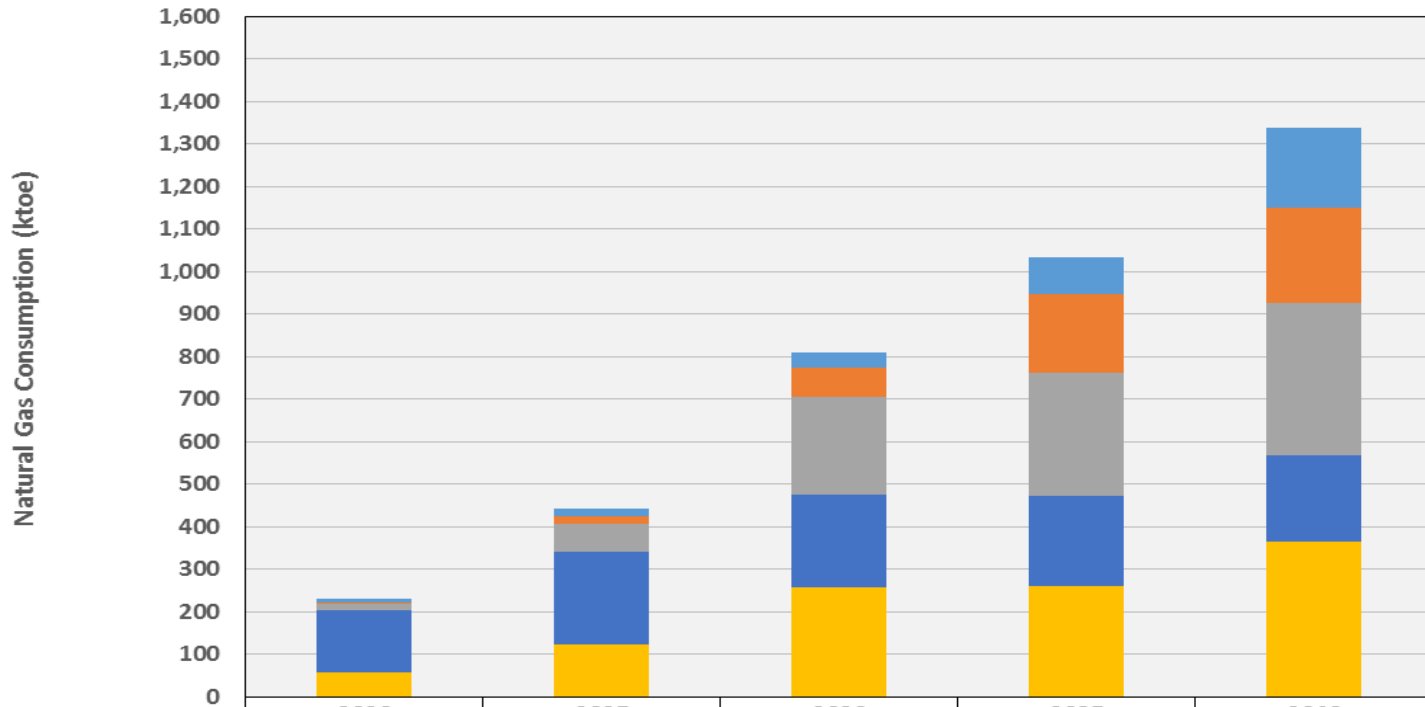
Natural gas scenario for Energy Consumption

-. Implementation of the full GMP for Albania will, lead to a **potential gas consumption in Albania by 2040 of total 927 mcm in the residential, service and industrial sectors and 684 mcm for anchor consumers.**

-. The gas consumption is presented in below Table

	mcm	ktoe
Residential sector	228.8	190.0
Service sector	267.8	222.5
Industrial sector incl. agriculture and transport	430.2	357.3
Total for sectors	926.8	769.8
Anchor consumers	684.4	568.4
Total	1,611.2	1,338.2

# Gas Master Plan for Albania & Project Identification Plan.



	2020	2025	2030	2035	2040
Residential Sector	6.90	16.09	37.21	84.83	190.03
Service Sector	5.51	19.38	67.36	186.90	222.46
Industrial Sector	14.29	65.57	230.56	288.43	357.32
Anchor consumers, others	145.36	216.79	216.79	210.97	205.16
TPP/CCGT	57.23	123.56	257.30	261.01	363.27

**Potential Natural Gas Consumption according to the GMP, in 2040 is around 1338 ktoe, or 1,611 mcm**

# Gas Master Plan for Albania & Project Identification Plan.

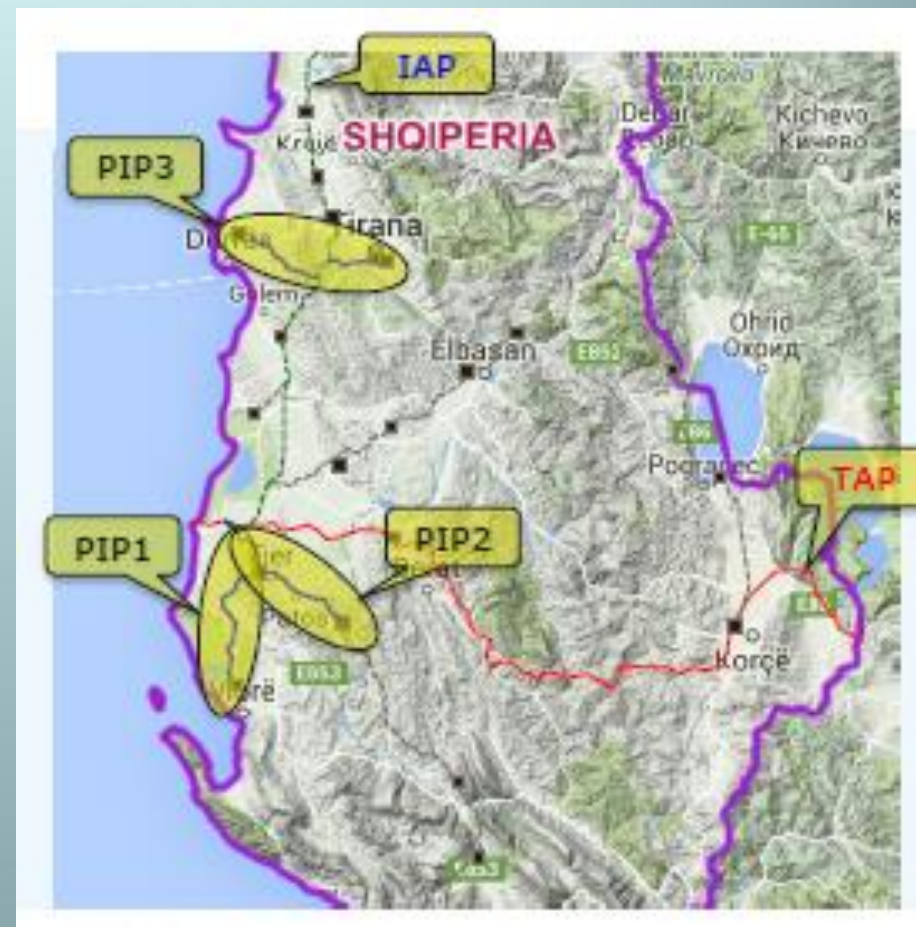
## Part of the GMPA are the three Priority Investment Projects (PIPs)

### Priority Investment Projects (PIPs)

- > Include Pre-feasibility study and Environmental & Social Impact Assessment screening
- > PIPs identified:
  - > PIP1: Gas Transmission Pipeline from TAP CP1 Fier and TPP Vlora;
  - > PIP2: Gas Transmission Pipeline from TAP CP1 to Fier and Ballsh;
  - > PIP3: Gas Transmission Pipeline from IAP to Tirana and Durres;

### PIP – Transmission pipelines – Scope of Project

- 1 Identify a more detailed route compared to GMP
  - > Length, terrain assessment, land requirements, etc.
- 2 Assess land ownership and expropriation issues and procedures
- 3 Perform a detailed pipeline project
  - > Configuration, Size & Pressure
  - > Hydraulics & Flows
  - > Facilities (PRMS, BVS, PTS, etc.)
- 4 Perform cost-benefit analysis
  - > Investments & Depreciation
  - > OPEX & Staffing costs
  - > Expenditures and profit
  - > Project Economics & Financial Assessment (ROI, NPV, IRR)
  - > Full risks and sensitivity assessment



# Gas Master Plan for Albania & Project Identification Plan.

## PIP1 –Transmission pipeline from TAP CP1 to TPP Vlora

Total gas Consumption by 2040: 252mcm

Total CAPEX: 16.2 Milion EUR

- > Highest Priority Project
  - > Vlora TPP (100MW) & future CCGT (200MW)
  - > 80% of industry, 70% of service & residential sector
  - > Total Consumption by 2040: 252mcm
- > Conducted in parallel with GMP SEA and PIP1 ESIA Screening
  - > Several transmission corridor alternatives considered
  - > Retained two options
- > Distribution network in Vlora
  - > High, Medium & Low Pressure pipeline



Financed from EUSIPF by a contribution from the EU IPA Multi-Beneficiary Programme for Albania, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Kosovo\*, Montenegro and Serbia.

Western Balkans Investment Framework  
Infrastructure Project Facility  
Technical Assistance 4 (IPF 4)

WB11-ALB-ENE-01

Gas Master Plan for Albania &  
Project Identification Plan

Priority Investment Project  
Transmission Pipeline from TAP CP to TPP Vlora  
Pre-feasibility Study

December 2016

COWI | IPF

\*This map is a simplified and general representation of the territory of the Republic of Kosovo. It does not constitute an official position of the European Union on the status of Kosovo.

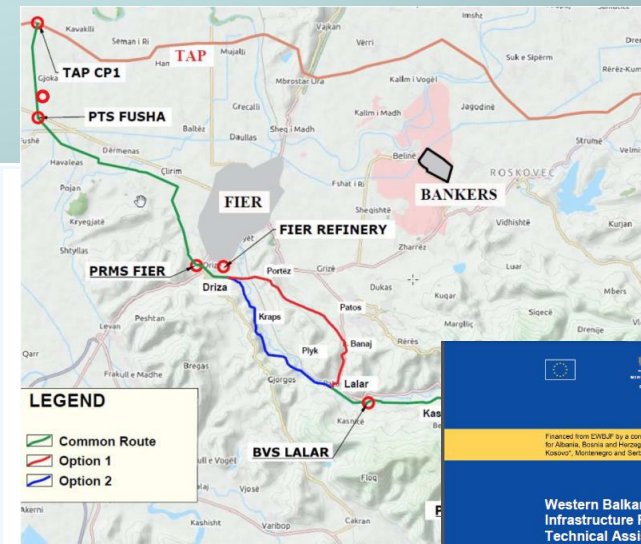
# Gas Master Plan for Albania & Project Identification Plan.

## PIP2 –Transmission pipelines from TAP CP1 to Fier and Ballsh

Total gas Consumption by 2040: 335mcm

Total CAPEX: 11.8 Milion EUR

- > Second Highest Priority Project
  - > Refineries in Ballsh (72 mcm/yr) & Fier(17 mcm/yr)
  - > Bankers Petroleum (130 mcm/yr)
  - > Total Consumption by 2040: 335 mcm/yr
  - > Consumption incl. Gjirokastra & Saranda: 345 mcm/yr
- > Conducted in parallel with GMP SEA and PIP2 ESIA Screening
  - > Several transmission corridor alternatives considered
  - > Retained two options
  - > Considered the existing pipelines
- > Distribution network in Fier, Patos, Portëz, etc.
  - > High, Medium & Low Pressure pipeline



Financed from EUSIPF by a contribution from the EU IPA Multi-Beneficiary Programme for Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Kosovo\*, Montenegro and Serbia

Western Balkans Investment Framework  
Infrastructure Project Facility  
Technical Assistance 4 (IPF 4)

WB11-ALB-ENE-01

Gas Master Plan for Albania &  
Project Identification Plan

Priority Investment Project  
Transmission Pipeline from TAP CP1 to Fier and  
Ballsh

Pre-feasibility Study

March 2017

COWI | IPF

# Gas Master Plan for Albania & Project Identification Plan.

## PIP3 –Transmission pipelines from IAP to Tirana and Durrës

Total gas Consumption by 2040: 785mcm

Total CAPEX: 11.1 Milion EUR

- › Third Highest Priority Project
  - › Total Tirana Consumption by 2040: 533 mcm/yr
  - › Total Durrës Consumption by 2040: 252 mcm/yr
- › Conducted in parallel with GMP SEA and PIP3 ESIA Screening
  - › Several transmission corridor alternatives considered
  - › Retained four options & two variants



Financed from ERDF by a contribution from the EU IPA Multi-Development Programme for Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Kosovo\*, Montenegro and Serbia.

Kuadri i Investimeve të Ballkanit  
Perëndimor  
Instrumenti Lehtësues për Projektet e  
Infrastrukturës (IPF)  
Asistencë Teknike 4 (IPF 4)  
WB11-ALB-ENE-01

Master Plan i Gazit Ndryor për Shqipëri dhe Plani i Identifikimit të Projekteve

Projekti Prioritar i Investimeve Gazsjellësi nga IAP në Tiranë dhe Durrës

Raporti i Qëndrimit ndaj Vlerësimit Mjedisor dhe Social

Raporti Përfundimtar  
Prill 2017

COWI | IPF

This report is a confidential product of COWI and IPF. It is not to be distributed outside of the project or the client's organization.

# Gas Master Plan for Albania & Project Identification Plan.

## Approval of the GMPA by the DCM No 87, Dated 14.02.2018

REPUBLIC OF ALBANIA  
COUNCIL OF MINISTERS

DECISION

No. 87, dated 14.02.2018

ON

**THE APPROVAL OF THE DEVELOPMENT PLAN OF NATURAL GAS SECTOR IN ALBANIA AND IDENTIFICATION OF PRIORITY PROJECTS**

Pursuant to Article 100 of the Constitution and points 1, 2 and 4 of Article 5 of Law No. 102/-2015, "On the Natural Gas Sector", upon the proposal of the Minister of Infrastructure and Energy, the Council of Ministers

DECIDES:

1. Approval of the Development Plan of Natural Gas Sector in Albania and the identification of priority projects prepared by COWI-IPF consultant within the project "Natural Gas Master Plan for Albania and Identification of Priority Projects in the field of natural gas", funded by the WBIF (Western Balkans Investment Framework), according to the text of the constituent documents, attached to this decision:

- a) Gas Infrastructure Master Plan for Albania, for which the Environmental Declaration No. 1520/1, dated 27.03.2017, was issued by the Ministry of Environment;
- b) Institutional Review and Organizational and Institutional Assessment Report;
- c) Assessment of demand and supply sources with natural gas;
- d) Tariff study.

2. Within September 2018, the Ministry of Infrastructure and Energy shall prepare and submit to the National Council of Territory the document "Natural Gas Master Plan for Albania and identification of priority projects in the field of natural gas" for consideration and approval.

3. The Ministry of Infrastructure and Energy and the relevant ministries and institutions mentioned in the Development Plan of Natural Gas Sector in Albania shall be responsible for implementing this decision.

This decision enters into force after its publication in the "Official Gazette".

PRIME MINISTER  
EDI RAMA

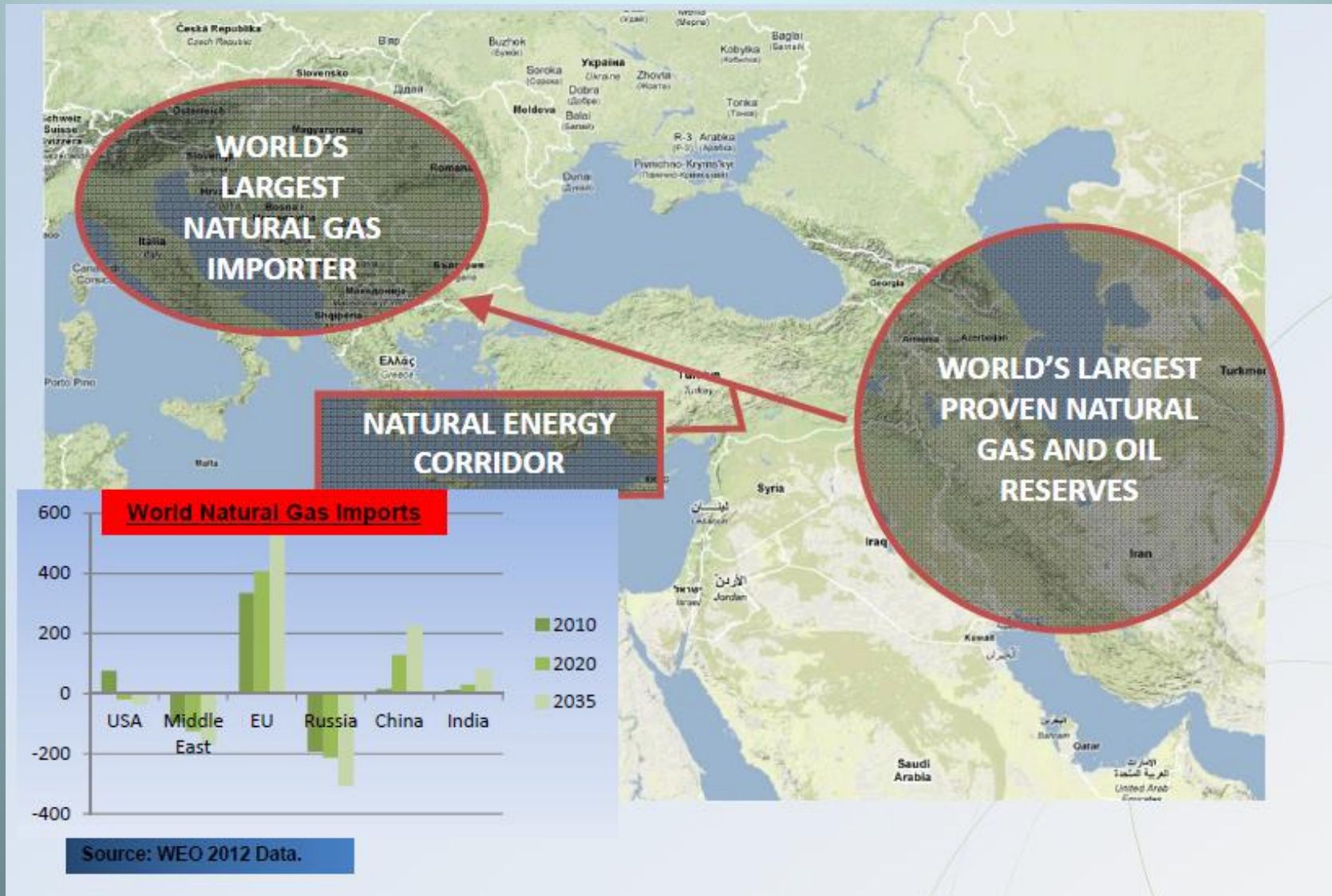


## **3.- Recent developments on gasification of Albania.**

# MIE Recent developments on gasification of Albania.

## 1.- Trans Adriatic Pipeline Project (TAP Project)

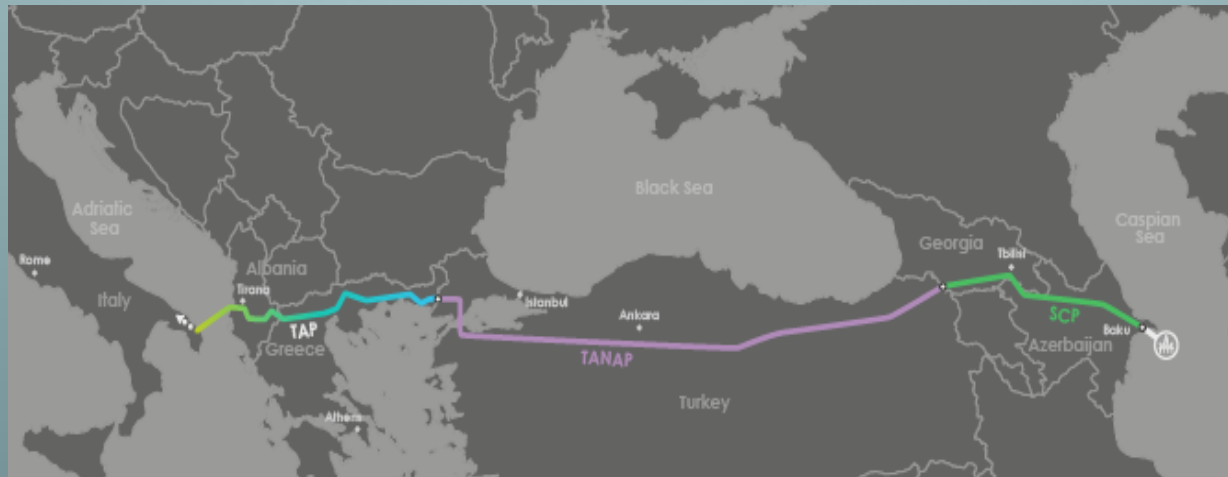
### NATURAL ENERGY CORRIDOR FOR EUROPE



# Recent developments on gasification of Albania.

## 1.- Trans Adriatic Pipeline Project (TAP Project)

- **The Trans Adriatic Pipeline (TAP) is a project being promoted by the Swiss Elektrizitats-Gesellschaft Laufenburg AG (EGL AG).** EGL AG has signed the first MoU in 26 May 2004 with ex Ministry of Industry and Energy of Albania to develop the TAP Project.
- **TAP's shareholding, is comprised of BP (20%), SOCAR (20%), SNAM (20%), Fluxys (19%), Enagás (16%) and Axpo (5%).**
- **This pipeline will open a new corridor and market outlet for natural gas (Southern Gas Corridor for EU),** from Caspian Sea and Middle East regions into Europe, through Turkey-Greece-Albania corridor. TAP will be interconnected with gas system in Greece
- **The project would support gasification and development** of Albania, and potentially – through a separate spur line along the Balkan coast towards Croatia (the Ionian-Adriatic-Pipeline) –promote the development of a broader regional gas market in SEE.



# Recent developments on gasification of Albania.

## 1.- Trans Adriatic Pipeline Project (TAP Project)

What is the importance of TAP to Albania?

### Overview of Potential Benefits

#### Contributing to Economic Growth in Transit Countries

- Direct contribution to **GDP** through taxes
- Direct and indirect **employment** during construction and operation
- Procurement of goods and services via eligible **local suppliers**
- **Social and environmental investments:** community investment programmes
- Spill over effects: **news skills and expertise** for companies and workers
- **Improved local infrastructure:** for ex. access roads and bridges in Albania
- Boost the countries' roles as **energy hubs** in the region



# Recent developments on gasification of Albania.

## 1.- Trans Adriatic Pipeline Project (TAP Project)




### Some Data for project progress at the end of April 2018

· Right of Way cleared and graded km	187	· Right of Way Backfilled km	159
· Pipes Strung x	181 km	· Right of Way Reinstated	120 km
· Pipes Welded x	177 km	· Hydrotesting	70 km
· Fibre Optic Cable	45 km	· Pipes and bends delivered to Durrës	100%
· Trenching x	163 km	· Block Valve Stations	41%
· Pipeline Lowered x	161 km	· Compressor Station in Fieri	27%
· Pipeline segments Tied-in no.	790	· Metering Station in Bilishti	31%

# Recent developments on gasification of Albania.

## 2.- Ionian Adriatic Pipeline Project (IAP Project)



The European Union's 2008 IPA Programme for Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Serbia, Kosovo\*, Turkey and Iceland


**Infrastructure Projects Facility  
Technical Assistance Window (IPF TA)**

EuropeAid/128073/C/SER/MULTI

Sub Project:  
WB5-REG-ENE-03

FS and ESIA for the  
Ionian – Adriatic Pipeline (IAP)

Feasibility Study Report  
January 2014



This project is funded by the European Union

**COWI • IPF CONSORTIUM**

\* This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.



Map of the route of the Ionian-Adriatic Pipeline as defined in the IAP Feasibility Study

Country	Albania	Montenegro	Croatia	TOTAL
Pipeline length (km)	167.67	94.10	249.02	510.79
Number of facilities	12	6	16	34
Number of CS	0	0	1	1
CAPEX Items (1000 EUR)	168 952.42	118 684.22	329 991.49	617 628.13
Pipeline	139 954.47	99 875.33	253 320.36	493 150.16

IAP pipeline system CAPEX (in 1000 EUR)

# Recent developments on gasification of Albania.

## 2.- Ionian Adriatic Pipeline Project (IAP Project)

### Joint meeting for the Ionian Adriatic Pipeline Project

Tirana, 08.09.2017

Joint-meeting-for-the-Ionian-Adriatic-Pipeline-Project

Rogner Hotel, Tirana  
08-Sept-2017  
10:00-12:00

Agenda

- 10.00 – 10: 05 → Welcoming speech of the Meeting's host / Introduction of participants
- → Mr. Sir Dajçe, Deputy Minister of Energy and Industry, Albania
- 10.05 – 10:20 → Progress on the gas projects in Albania on the frame of the recent gas projects development on regional and European level
- → Mr. Damian Gjini, Minister of Energy and Industry, Albania
- 10.20 – 10:30 → Speech by USA Embassy in Tirana
- → Mr. Donald Lu, Ambassador
- 10.30 – 10:40 → Speech by EU Delegation in Tirana
- → Representative EU Delegation
- 10.40 – 10:55 → Update information on IAP project – Short introduction
- → Mr. Zarko Djuranovic, Representative of IAP
- 10.55 – 11:10 → Introduction speech for recent gas sector developments on MN, B&H and CR
- → Representative of Montenegro, Bosnia and Hercegovina, Croatia
- 11.10 – 11:20 → Update information for recent developments on TAP project – Shkëlqim Bozge, TAP-AG, Country manager, Albania
- 11.20 – 11:40 → Discussions/ Comments by the representatives of Ministries and embassies
- 11:40 – 12:00 → Coffee break

08-Sept-2017  
12:00-15:30

Agenda

- Only PMU members
- 12:00 – 12:10 → Continue the meeting of the PMU of IAP
- → Adoption of the Agenda
- 12:10 – 12:30 → External financial assistance for IAP – next steps
- → Ms. Porjane Desovic, Finisar
- 12:30 – 12:50 → Establishment of IAP company – discussion
- → Mr. Kamran Huseynov, SOCAR
- Open Part of the PMU meeting
- 12:50 – 13:10 → Discussion on signing of the MoU with TAP
- 13:10 – 13:20 → The feedback from invited participants
- 13:20 – 13:30 → Next steps and conclusions
- 13:30 – 14:00 → Presentation on IAP Feasibility Study
- → Mr. Maske Afetzoli, Economic Consulting Associates
- 14:00 – 15:30 → Lunch

The study of the preliminary technical design for the IAP project (AL - MN).

Terms of References prepared by Consultant Mott McDonald for the study of the preliminary technical design for the IAP project in the territory of Albania and Montenegro (with funding of EUR 2.5 million from WBIF)



# Recent developments on gasification of Albania.

## 3.- Albania - Kosovo Gas Pipeline Project (ALKOGAP Project)

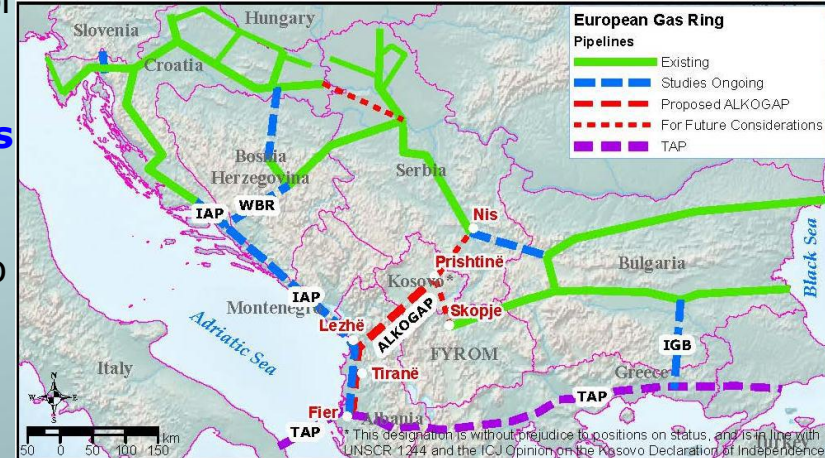
The Albania-Kosovo Gas Pipeline (ALKOGAP) project as an interconnector, is to interconnect the existing and planned gas transmission system of the Republic of Albania (including TAP project) with the future projected gas transmission system of the Republic of Kosovo, and the transmission interconnectors which are part of eastern brunch of Energy Community Gas Ring (ECGR), as well.

**The ALKOGAP project however shall be planned as bi-directional pipeline,**

The estimated annual level of ALKOGAP will arrive up to 2 bcm (1-1.3 bcm for Albania and 0.5 - 0.7 bcm for Kosovo).

It would be possible to increase its capacity (double or triple), in the case that ALKOGAP will be used to supply other countries with Caspian or Middle East gas.

**This transmission supply project, of about 260 km total length,**



*ALKOGAP Project*



# Recent developments on gasification of Albania.

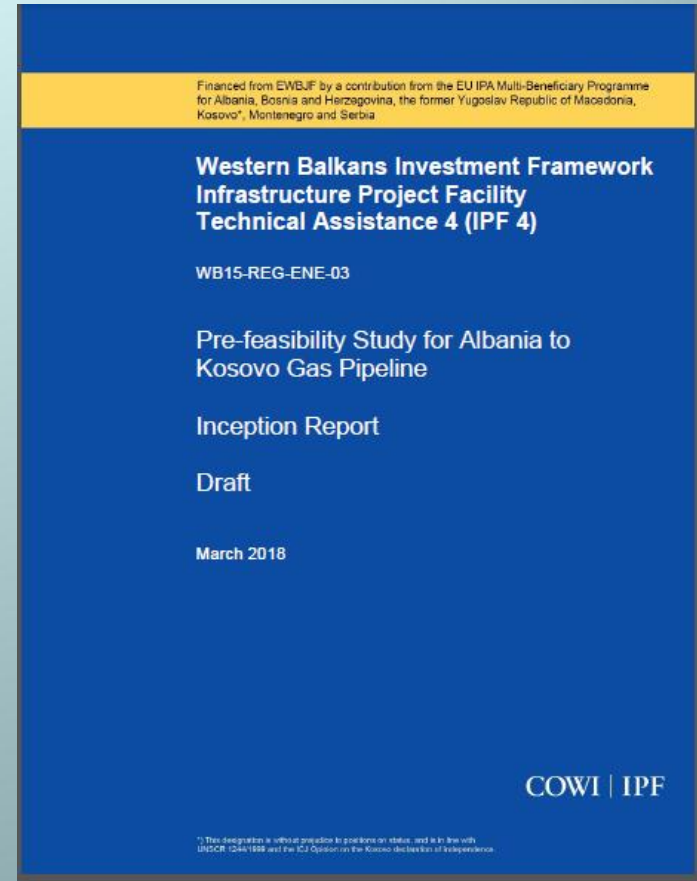
## 3.- Albania - Kosovo Gas Pipeline Project (ALKOGAP Project)

The project “**Pre-feasibility Study for Albania to Kosovo Gas Pipeline (ALKOGAP)**” will be implemented in Albania and Kosovo in collaboration with the Ministry of Infrastructure and Energy (MIE) of ALB and the Ministry of Economic Development (MED) of KOS, as the main promoters, beneficiaries and counterparts.

**(Founding 0,3 million Euro as grant by WBIF).**

**The planned duration of the technical assistance (i.e. preparation of P-FS) is 9-12 months;** it will be undertaken to the satisfaction of the Albanian and Kosovo authorities, EC and the interested IFI(s).

One important aspect of the P-FS will be to make an assessment of the ability of the gas operator(s) and / or countries to service the loans required for pipeline construction.



# Recent developments on gasification of Albania.

## 4.- Feasibility Study :TAP/Fier – TPP/Vlora Gas Pipeline Project

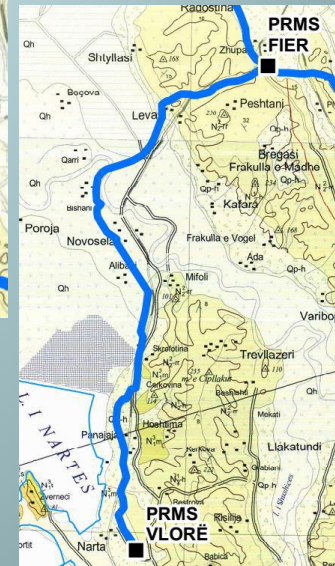
- The project aims to evaluate the fulfillment of the gas supply for the Vlora TPP, through the construction and operation of gas pipeline Fier-Vlore that will connect the TAP pipeline with Vlora TPP and other regional consumers (two sections),.

- The Fier-Vlore gas pipeline project is to support and increase the flexibility of energy supply and electricity generation of the region and to improve the electricity supply for Republic of Albania.

- Considering the increasing of the Vlora TPP from 100 MW to 300MW, the year **consumption of natural gas will increase from 150-170 Million m<sup>3</sup>/year to 450-500 Million m<sup>3</sup>/year.**

Including the local gas consumption (around 50 – 60 Million m<sup>3</sup>/year, **the total year gas consumption will arrive in maximum up to 550 – 600 Million m<sup>3</sup>/year.**

- **The average cost for the construction of the two sections of the Fier-Vlora gas pipeline will be around 23.5 Million Euro.** In the meantime the financing for the preparation of the main technical design of this pipeline is around 1,5 Million Euro.



The gas pipeline Fier-Vlore that will connect the TAP pipeline with Vlora TPP (two sections)

# Recent developments on gasification of Albania.

## 4.- TAP/Fier – TPP/Vlora Gas Pipeline Project

- ◆ **The total gas take-off at TAP CP1 is 584 mcm/y.** 345 mcm/y will be taken off at branch connections TP Fushë (route option 1) and TP Fier (route option 2) for future consumers in Fier, Ballsh, Tepelene and Gjirokastar.
- ◆ Another 52 mcm/y will be taken off at TP Vlora for future domestic consumers in the city of Vlora. **The projected gas consumption of the TPP Vlora for the year 2040 is therefore 187 mcm/y.**
- ◆ The CAPEX for Option 1 amounts to approx. 32.2 MM € including an overall contingency of approx. 10.2 MM €.
- ◆ The CAPEX for Option 2 amounts to approx. 39.6 MM € including an overall contingency of approx. 12.6 MM €.
- ◆ The above costs have been derived using international prices and **rates.** **An alternative CAPEX estimate using Albanian local price levels amounts to approx. 18.75 MM € including an overall contingency of approx. 5.9 MM €.**

Roland Berger

Title	Pipeline Feasibility Study Report
Project	Pipeline Feasibility Study Albania
IMPAC Project No.	P2121
IMPAC Doc. No.	2121-00-RR-RPT-GE-0004-000
Client Project No.	-
Client Doc. No.	-
Revision Date	07/05/2018
Revision	R03

IMPC OFFSH

This document is the property of IMPC stored electronically or made available



# Recent developments on gasification of Albania.

## 5.- Dumre Underground Gas Storage Project (UGS Dumrea)

- Dumre area is situated very close to the crossing of two main gas corridors, (TAP and IAP) the very thick rock salt deposit (Dumre rock salt formation), which could potentially host an underground natural gas storage facility.

**The UGS Dumrea project is to support and increase the flexibility of the existing and planned gas transmission system of the Republic of Albania** (including TAP project) with the existing and future projected gas transmission system of the neighboring countries.

**The project has a regional impact**, as construction of the UGS Dumrea would facilitate not only gasification of Albania, but also the potential gasification of Montenegro and Kosovo and provide a diversified and reliable natural gas supply.

**This UGS project, of about 1 bcm capacity, would improve the preconditions for the further development of the natural gas markets in Albania.**

It would be possible to increase its capacity (double or triple), in the case that UGS Dumrea will be used to supply Greece, Serbia and former Yugoslav Republic of Macedonia and other countries with Caspian or Middle East gas.



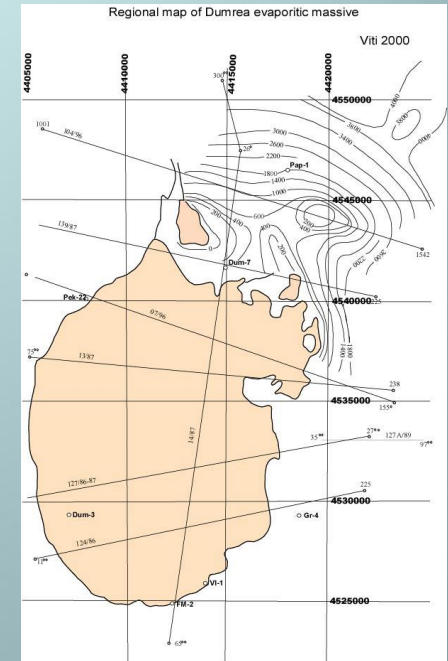
# Recent developments on gasification of Albania.

## 5.- Dumre Underground Gas Storage Project (UGS Dumrea)

The salt dome of Dumre is a large diapir covering a surface area of approximately 250 km<sup>2</sup>. The salt mirror is mostly at depth 2,000 m. The overburden is karstic to a large extent and consists of gypsum and anhydrite. The salt reaches down to 6,000 m. The salt volume is estimated to amount 1,400 km<sup>3</sup>.

- If Dumre is developed as a storage to cover only national needs, two 55-60 m diameter caverns will be leached, each storing some 65-75 million m<sup>3</sup> of natural gas. Supposed to have a working capacity of 260 to 300 million cubic meters and a withdrawal rate of 1.29 mcm/day. The investment for this alternative is estimated to be EUR 68 million.

- In the second scenario Dumre will meet the need of the regional and the transit gas markets. The project includes the leaching of eight caverns with 70-80m diameter, which will have a combined storage of up to 1.2 billion m<sup>3</sup> of gas. Much larger than alternative 1, it may have a working capacity of 1 to 1.2 billion cubic meters and a withdrawal rate of 6 mcm/day. With an estimated investment of EUR 73 million, the alternative 2 would have the lowest cost per cubic meter. The start-up of gas storage facilities in Dumre are estimated for the end of 2022.



The underground natural gas storage in Dumre Area

# Recent developments on gasification of Albania.

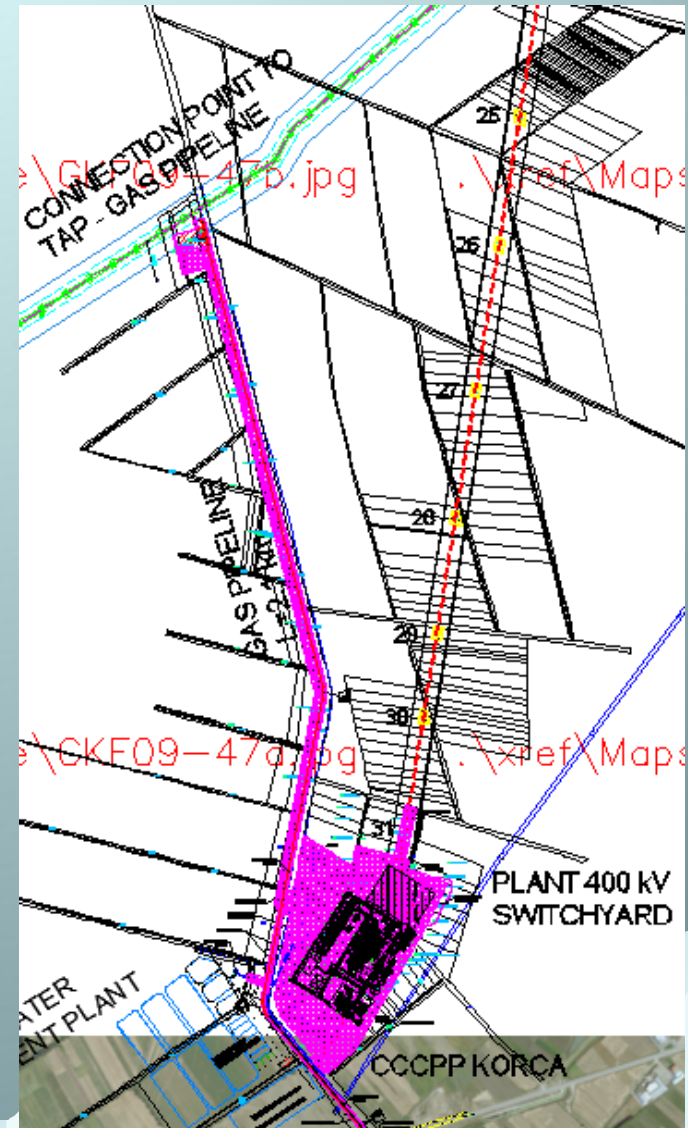
## 6.-Combined-Cycle Cogeneration Power Plant CCCPP Korça-500 MWe/ 80 MWt/ 5MWt

"GPP Korça" Ltd is a company that has been registered and acts in accordance with the Albanian Legal Framework since January 2017 **as a subsidiary of "Ivicom Holding GmbH"**. The main activity of the company is the production of electricity and heat and their sale in the local and international market.

**GPP Korça Ltd applied to AIDA (Albanian Investment Development Agency) for obtaining the "Strategic investment" status** of the Project for the construction of a combined cycle of electricity production and co-generation for thermal energy supply. **This status is approved.**

**Korça CCCPP plant - 500 MWe / 80 MWt / 5 MWt** is planned to be built near the city of Korça in the Southeastern part of Albania

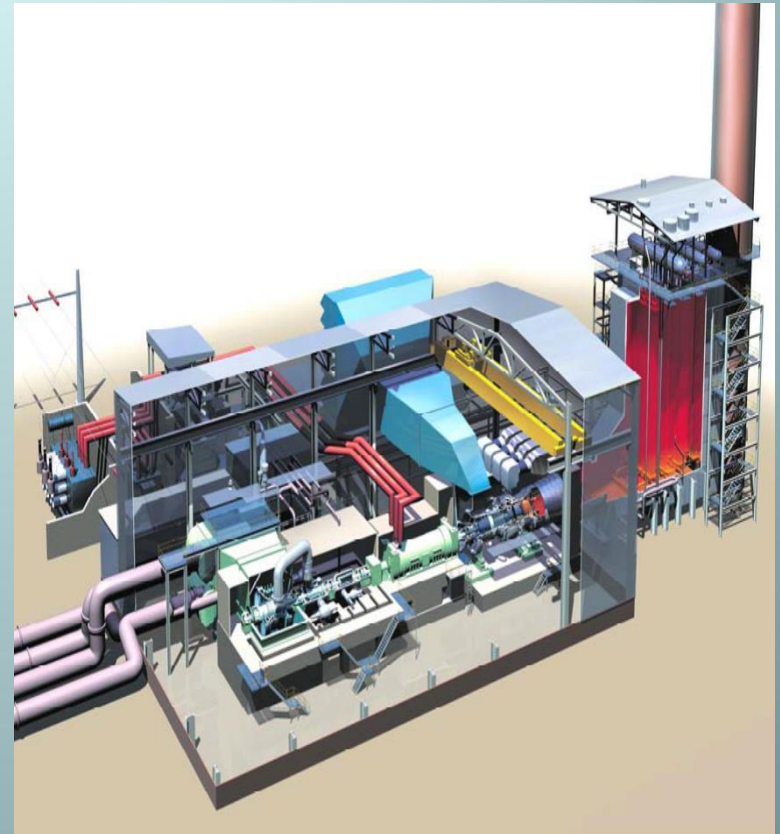
**. CCCPP of Korça will produce about 480 MWe net including a maximum of 80 MW** of steam to heat the city. While a permanent steam will be 6 MW for the purpose of heating the sanitary water.



# Recent developments on gasification of Albania.

## 6.-Combined-Cycle Cogeneration Power Plant CCCPP Korça-500 MWe/ 80 MWt/ 5MWt

- The project is designed in accordance with the Gas Master Plan for Albania which takes into consideration the supply of the gas transmission system in Albania by the TAP pipeline, and which will also be the most important strategic object in the development of the sector of gas in Albania and its connection to regional and European gas networks.
- The thermo power plant will be a combined cycle, which guarantees a high efficiency of transforming the thermal energy into electricity by about 60% or 5990 kJ / kWh
- The plant is intended to be supplied with gas from the TAP pipeline project in 6.36 x 108 m<sup>3</sup> / year (2 km distance north), according to a contract that the proposing subject itself will negotiate with TAP AG and gas suppliers
- Electricity produced is intended to be transmitted to the Electric Substation (line about 11 km, double circuit, with voltage level 400 KV).
- Cooling/Condensing water (in the amount of 460 m<sup>3</sup> / h (128 l / s)) will be taken from the Korça City Water Treatment Plant (two wells are foreseen).



**POWER PLANT DESCRIPTION  
CCCPP KORÇA 500 MWe/ 80 MWt/  
5MWtPROJECT**

# Recent developments on gasification of Albania.

## 7.- New petroleum explorations

SHELL Int. & Petromanas new discovery 2014. Shpiragu-2 well, Blocks 2-3, ALBANIA (Test: oil 220-330 ton/day; Gas 80000 -100000cm/day)

SHELL ALBANIA is drilling the Shpiragu - 4 well  
The Shpirag-4 drilling is part of an agreement signed between Shell and the Albanian government for petroleum exploration in blocks 2 and 3.  
The Shpirag oil deposit, discovered by Shell within blocks 2-3, is at a depth of 6,000 to 7,000 metres. -

### Albania: Compelling Initial Well Test Results at Shpirag-2

Energy Inc.

- Three day test (duration restricted due to limited fluid handling capacity/tankage)
- Well flowed at rates of **1,500 to 2,200 boe/day**
- **800 to 1,300 bpd** of **35 to 37 degree API** oil and **2 to 5 mscfd** of gas
- Gas to oil ratio in the range of **2,500 to 2,800 scf/bbl**
- Lower than expected levels of hydrogen sulfide (0.5%)
- Calculated oil column > 800 m
- Test results confirm ability to **flow light oil** from fractured reservoir
- Well was shut in with recorders; data retrieved and analyzed
- Oil flow validates the potential of Blocks 2-3





**4. WHY INTERNATIONAL NATURAL GAS  
CONNECTIONS SHOULD TAKE  
ADVANTAGE FROM  
CONNECTION AND CROSSING ALBANIA ?**

## 4. WHY INTERNATIONAL NATURAL GAS CONNECTIONS SHOULD TAKE ADVANTAGE FROM CONNECTION AND CROSSING ALBANIA ?

- Albania is now a member of **NATO** and has the status of the **EU Candidate Member**. Albania looks forwards the **EU membership**.
- 
- Has historically been a **factor of peace and stability** in the region
- Albania has a developed petroleum sector with **the biggest crude oil proven reserves** in the region.
- Its excellent geographical position offers the shortest and therefore the **most cost efficient link** for N-G pipes from Caspian areas to Southern Italy and to Central and Western Europe.

## WHY INTERNATIONAL NATURAL GAS CONNECTIONS SHOULD TAKE ADVANTAGE FROM CONNECTION AND CROSSING ALBANIA ?

- Has important capacities for **underground storage**
- Despite its modest size the Albanian economy is **growing** steadily.
- There is **an overall very friendly and cooperative climate in Albania in relation to foreign investment**, including those that connect two or more states.
- Albania **guarantee to the foreign investment high security** as in economic terms, but also security for the whole business, including **physical security of the facilities and installations** used for the particular activity

*Thank you !*

**WORKSHOP ON WB GAS INFRASTRUCTURE**

**24th May 2018  
Vienna, AUSTRIA**

**[stavri.dhima@infrastruktura.gov.al](mailto:stavri.dhima@infrastruktura.gov.al)**

**[www.infrastruktura.gov.al](http://www.infrastruktura.gov.al)**