HYDROCRACKING PROCESS AND CONSUMPTION IN ALBANIA AND IN THE WORLD

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ABSTRACT

The oil has over the last 150 years has evolved to become the dominant commodity in the world. The demand has led to crude oil and petroleum products is the largest commodity group in international trade and be responsible for the largest volume transported across the oceans. Several of the world's largest multinational companies have their base in the oil industry, which includes drilling, transportation, refining and marketing of oil. Having control of crude oil resources has become a major power. It is no exaggeration to claim that the world economy is highly influenced by what happens in the oil market. Oil production in Albania was increasing continuously. During the periods 1929-1944 and 1945-1963 the total production was only from the sandstone reservoirs, while after 1963 year was and from the carbonate reservoirs. Up to the 1963 year from the sandstones were produced 4 974 649 ton oil. Discovery of the new reserves on carbonate reservoir have increased considerably oil production in Albania arriving the maximum on 1975 year 2 250 000 ton. On 2004 year start to increase production from Marinza oil field Bankers Petroleum. Total production from this field increased from 359 000 ton on 2003 to 563 402 on 2007.

Keywords: Petroleum, products, consumption, reserves', Albania, World.

PETROLEUM AND ITS SIGNIFICANCE Why is oil important?

Petroleum products, or, as they are also called, petroleum products, used as an energy source for heating of industrial facilities, homes, schools, offices etc. The oil has a dominant role as a fuel for motor vehicles, boats and aircraft. Factors that make the oil competitive as an energy source include the high energy content and the oil is easily transportable and store. In addition to the important role of energy raw material used oil for the production of a variety of products. By distillation of special types of heavy crude oils manufactured bitumen is the binder in asphalt and base oils for lubricants.

The term energy

The word energy comes from the Greek actually means "inner strength". In modern speech is customary to define energy movement or ability to movement or to do a job. Energy comes in many different forms in thermal energy, electrical energy, mechanical energy, potential energy, chemical energy, radiant energy and nuclear energy in and can be converted into different forms, but not created or destroyed. This is called the energy principle or the first law of thermodynamics. Hydropower can be taken as an example of a long chain of energy conversions. The radiant energy from the sun evaporates water in the ocean. The water vapour condenses into clouds and implemented with winds help to upland terrain and falls down in the form of precipitation that is collected in the power plants' reservoirs as potential energy. Location the energy then turns into kinetic energy through the turbines, in turn, is converted into electrical energy. Food contains chemical energy stored in the body and which will be useful when work is performed. The car's engine transforms the chemical energy of fuel into mechanical energy. The mechanical energy is then transmitted to the vehicle's drive wheels. The examples also illustrate the concepts of stored energy (potential) and energy into work (kinetic). All forms of energy are stored in different ways in the energy that comes to daily use. It is customary to divide the energy in the two groups in the renewable and non-renewable. Renewable energy sources (as defined in Directive 2001/77 / EC) are non-fossil energy sources such as wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant and biogas. Most of the energy used today, however, from non-renewable energy sources such as oil, natural gas, coal and uranium.

How is measured when energy? The international standard unit for energy is 1 joule (1 J), i.e. equal to one watt second (Ws 1). A watt-hour (Wh 1) thus corresponds to 3600 joules.

It is important to distinguish between energy and power. Power is the ability to deliver or consume energy during a certain time. Used as a measure unit 1 watt (1W). The amount of energy used over a given period obtained by multiplying the power with time. Energy = power x time. The difference between the concepts of energy and energy is explained in the glossary.

The oil in the world

Fossil fuels (coal, oil and natural gas) accounts for about 80 percent of the world's total energy of which oil is the most dominant fuel by about 35 percent. Group of fossil fuels has increased in recent years to cover the sharp economic expansion in some regions of the world. It is especially in the newly industrialized countries in the Far East, China and the Pacific as oil consumption has increased rapidly. Compared to the western world also increases the consumption of oil products rapidly in the oil producing countries in the Middle East. Even in developing countries, rising oil consumption.

The economic situation in many developing countries results in greater sensitivity to fluctuations in the price of oil. In the current state produced about 40 percent of the crude oil by OPEC, which is a joint organization between eleven oil-exporting countries in the Middle East, Africa and South America (Venezuela). Rest in 60 percent is coming from countries that are not part of OPEC, including USA, Canada, Russia, Norway and the UK. Developed countries import about half of its oil needs. These imports are expected to increase in coming years, first in the US but later in Europe.

Since two-thirds of the world's oil reserves are located in the Middle East (40 per cent only in Saudi Arabia), this means that the region will eventually become the dominant producer area. The IEA (International Energy Agency) has estimated that the demand for energy worldwide will increase by about two percent per year until 2020. The oil's share of the total energy supply will be as big as today. In the OECD area as the transport sector, this accounts for the entire increase. In other regions are also the transport sectors for the largest increase, but unlike the conditions in the OECD, here also the use of other sectors such as domestic sector, electricity generation and industrial sectors.

The energy consumption of oil in Albania and in the World in the years 1971-2010

During the performance of research regarding how is utilizing energy from the waste hydrocarbons in the Republic of Albania and the world in the years 1971-2010. During these

forty years it seems that the whole world there was a 3.73% decrease in the level of exploitation of hydrocarbon waste to produce energy.

Energy from waste energy produced hydrocarbons understood from solid fuels like coal, oil, gasoline, natural gas and its derivatives. These subjects' hydrocarbon fuels are formed from the remains of dead plants or animals as a result of exposure to heat and pressure of the earth's crust.





It seems that the Middle East and North Africa prevailing in the consumption of this form of energy with 98.86%, followed by East Asia and the Pacific with 84.63% and North America with 83.11%. Sub-Saharan Africa appears to life consumer of hydrocarbon energy pact with only 39.02% of the total energy it consumes.

But in 2010 the situation on hydrocarbon energy consumption in Albania and in some of the countries of the region under the graph:

Table 1. Hy	ydrocarbon e	energy (consumption	in some	European	countries on	average	1971-
			2010 in p	percentag	ges:			

State	1971-2010 [%]			
Albania	68.10			
Austria	80.29			
Belgium	82.21			
Bulgaria	82.97			
Cyprus	98.42			
Czech Republic	92.32			
Denmark	91.76			
Finland	59.04			
France	65.05			
Greece	94.20			
Hungary	86.35			

Italy	92.20
Luxembourg	89.61
Netherlands	96.19
Norway	55.62
Poland	96.97
Romania	91.56
Spain	84.37
Sweden	46.28
Switzerland	62.06
Turkey	79.96
England	91.04

Source: World Bank

The Republic of Albania during 2010-2014 has marks hydrocarbon energy consumption in 62.36% of the total mass. A figure that ranks among countries such as Switzerland, Norway, Austria, Bulgaria, Belgium. Countries such that the level of welfare have uneven surfaces visible with Albania.

ALBANIAN PETROLEUM INDUSTRY

The oil fields of Albania, produces from Jurassic-Eocene limestone and from Upper Miocene sandstone reservoirs. Oil exploitation in Albania began 80 years ago on 1928 year in Kuçova Oil field and one year later in Patos, in sandstone reservoirs. Both oil fields are discovered from A.I.P.A (Italian Petroleum Company). Development of Petroleum Industry in Albania can divide in this period:

Hydrocarbure Operations in Albania, after 1944 year, are performed from General Petroleum and Gas Directory, named Alb petrol after 1992 year. The activity of Alb petrol is set worth by the Petroleum Low Nr 7746, date 28/07/1993, and the agreement between Ministry and Alb petrol date 26/07/1993. The Oil and gas company Alb petrol has got exclusive rights for the development of all oil and gas fields under its management (A. Mezini ,N. Musai , 2012).

Alb petrol is cooperating in almost all oil fields in Albania. It has six agreements in six oil fields in sandstone and carbonate fields, and is collaborating to increase oil production, and to improve recoverable coefficient of the in place reserves. Albania has petroleum resources both on and offshore, and shares trends with the neighbouring Balkan states of Croatia, Serbia, Montenegro, Macedonia and Greece.



Table 2. List	of oil fields t	that are located	in Albania:
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Oil field	Founded	Start	Superlative		
Patos Marinza	1928	1930	Biggest onshore oil field of Europe		
Kuçova oil field	1928	2004	Second oil field of Albania		
Cakran-Mollaj oil field	1978	1978	-		
Ballsh-Hekal oil field	1967	1967	-		
Oil & Gas field	Founded	Start	Superlative		
Durresi block	2003	2005	Biggest offshore oil and gas field of Albania		

Pipelines	Founded	Start construction	Superlative
AMBO pipeline	2008	2011	Longest pipeline of Albania
Oil refiner	Founded	Start construction	Superlative
ARMO oil refiner	-	-	Only oil refiner of Albania

Oil production in Albania is from two distinct reservoirs. The earliest production was from Upper Miocene sandstones, in the Peri-Adriatic Depression, or Durresi Basin, a post organic largely Neogene fill covering the greater part of the coastal plain.

The second pay is in fractured limestone ranging in age from Jurassic to Eocene, of the Ionian Zone, a folded and trusted zone making up the Albanids. Ionian Zone underlies the Durresi Basin (A. Mezini ,N. Musai , 2012)..

This would be possible according to very high level of investments both in carbonate and sandstone reservoirs:



Graphic 2. Increasing investments

CONCLUSIONS

The hydrocracking process, whereby the minor amount of water, high flexibility. The petrol ensures a stable, the gas exchange small and low sulphur products. In the hydro cracking have to distinguish between the following possibilities: the production of middle distillates from heavy distillates or production of gasoline's from middle distillates. Oil production in Albania starts on 1928 year and was continuously increasing. There are producing two reservoirs: Sandstone and carbonate. Albania has high oil bearing potential and good opportunity for Oil and Gas Exploration.

In Albania exist a good legislation framework on collaboration with foreign companies for the development and production from existing oil fields. The most valuable term is in place oil reserves. The main focus in oil production is in increasing of recoverable reserves coefficient, especially in sandstone reservoirs. To do that is necessary to apply new technology and new EOR methods. For the long term new technology is of prime importance for producing marginal fields in a world with more and more constrains on economics, safety and environment. In order to apply these methods Alb petrol is collaborating with foreign companies.

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