Overview of Energy Sector in Balkan region

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Croatia
Balkan region

- Croatia
- Bosnia and Herzegovina
- Serbia
- Montenegro
- Kosovo
- Albania
- Macedonia
• In the strictest sense, the region consists of the countries included into Energy Community, which did not reach the necessary administrative and economic level required by EU due to its objective and subjective reasons.

• Countries are currently in the various EU membership joining status.

• Energy characteristics of the region are not closed within its borders, but there is a need and interest in marketing communications with other regional markets.
The Main Regional Energy Features and its Links Toward the EU

- Energy demand is constantly increasing
- The SEE region is a great importer of the natural gas and oil, while in some countries and electricity too
- Some countries have possibilities to exceed their electricity production demand needs
- Natural gas and oil sources are basically out of the European and SEE Region territory
- The EU is importer of all energy forms and it is interested to crossover electricity and other energy forms from or through the SEE region countries
- Questions on security of energy supply are highly expressed
• For the most part, taken advantage of their hydroelectric potential

• Possess substantial reserves of coal or lignite. Studies on the construction of thermoelectric plants in the region have given priority to those plants using cheap coal or lignite.

• It is generally thought that the countries in the region will try to maintain a high level of security and self-sufficiency in the production of electricity and the application of environmental protection criteria

• Natural gas might have a significant role in electricity production

• The nuclear option has been considered as a means to reduce CO2 emissions
In TPES the structure of energy consumption is somewhat more unfavorable as compared to the EU-27. Coal has a 2.3 times higher share than in EU-27, while the consumption of natural gas is 50 percent lower than in the EU-27. The EU Member States make up for the lower share of coal with higher shares of crude oil, natural gas and nuclear energy.
- TOTAL FINAL ENERGY CONSUMPTION

- In TFEC energy shares are similar as to that of the EU-27, the shares of coal, and biomas, almost double than in the EU-27. The share of gas in EU-27 is almost double than in region. It can be assumed that the share of conventional biomass and coal will decrease as the standard of living increases, and that the share of consumption of the more favorable energy sources (natural gas or petroleum products) will in turn increase.
The Main Electricity Features of the Region

- Continuous growth of electricity consumption
- Old age of existing power plants, lack of investments, low energy efficiency
- A huge technical and non-technical losses in particular utilities
- Low rate on delivered electricity payment
- Non-realistic low prices of the energy – social aspect of the prices
- Security of energy supply problems, import increase and reduction
- Significant dependence on hydrology – 30% of production is hydro power
- There are plans but problems in implementation
- A huge coal reserve (Kosovo, Srbija, B&H)
- Unused hydro potential
- There are ongoing nuclear programs (Romania, Bulgaria) and under development
- Significant potential for wind, solar and biomass energy, apart from potential to increase energy efficiency
In the production of electricity, coal is the dominant energy source, accounting for 73 percent, followed by hydropower with a share of 14 percent. Though those countries with a predominant share of coal have large reserves of this energy resource, an increase in the use of natural gas can be expected in the future, due to ecological requirements and the need to reduce CO2 emissions.
Region With the Electricity Gap

Source: Energy Institute Hrvoje Požar
Electricity demand and supply

TWh

- import-export
- nuclear
- natural gas
- fuel oil
- coal

Total consumption
Natural gas for electricity production

Potrošnja plina (s novim NE)  
Potrošnja plina (bez novih NE)

milijuna m³

with new nuclear  
without new nuclear
The Main Features of the Region

Natural Gas

• Natural gas network is developed only in some countries and regions
• Reduction of domestic production while increasing dependence on import (mainly from Russia)
• Transit corridor of natural gas supply from Russia and Caspian region toward EU countries
• Possibilities and needs for LNG terminals development, storages and interconnection pipelines
Heat market

POT. GAS CONSUMPTION (mil. m³):
- 2006. (red)
- 2030. (blue)
TOTAL – FINAL GAS CONSUMPTION

- Croatia: 3655
- Bosnia and Herzegovina: 1277
- Serbia: 4817
- Montenegro: 202
- Kosovo: 585
- Macedonia: 703
- Albania: 765
TOTAL - TOTAL GAS CONSUMPTION

- Croatia: 6220
- Bosnia and Herzegovina: 1717
- Serbia: 7561
- Montenegro: 602
- Kosovo: 689
- Macedonia: 1883
- Albania: 2381

Total gas consumption: 21,053 million cubic meters (mil. m³)

9,000 - el. and heat, refinery and non-energy
in excess of 160 billion m³/year
LNG

Italy: 56 billion m$^3$

Croatia: 14 billion m$^3$

Albania: ?-10 billion m$^3$

80 billion m$^3$
West Balkan Gas Ring Proposal

Source: The World Bank
Existing and new transmission pipelines:

- **Existing**
- **Planned**
- **TAP**
- **South Stream**
- **Year of construction**

The map indicates the distribution of these pipelines across a region, with specific lines and markers indicating their locations and construction years.
The Main Energy Features of the Region

Crude Oil and Oil Products - Refineries

- Total installed capacity in the region equates to 203 million tons in 36 refineries
- Loading factor of the total installed capacities is ~ 85% while in Croatia, Serbia, Albany and Macedonia is significantly lower
- Modernization of the refineries in last decade has strived toward final product quality improvement, energy efficiency enhancement and diesel production yield increase
Petroleum products flows
The Main Energy Features of the SEE Region

Crude oil & oil products consumption

- Total consumption of the oil products in SEE region is on the level of 155 million of tones yearly, while most of them is consumed in Italy.
- The future brings slightly decreasing or steady consumption in countries like Austria, Slovenia and Italy, while all other countries could expect significant growth.
- Extremely emerging markets regarding oil products consumption are Bosnia & Herzegovina, Montenegro, Kosovo and Albany.
- Consumption greater than 1000 kg/habitant in 2007 have achieved Greece, Austria, Italy, and Croatia, while consumption lower than 500 kg/habitant is recorded in Bosnia and Herzegovina, Kosovo, Romania and Albany.
- Biggest net exporter is Italy with around 16 millions of tone, while biggest importers are Austria with 5 and Slovenia with 2,7 millions of tones.
- Threshold of net export equates to 15 millions of tones a year.
Total consumption of petroleum products (kg/inhabitant)
Total consumption of petroleum products (1,000 t)
Total production of petroleum products (1 000 t)
Energy demand is constantly increasing

The SEE region is a great importer of the natural gas and oil, while in some countries and electricity too

Some countries have possibilities to exceed their electricity production demand needs

Natural gas and oil sources are basically out of the European and SEE Region territory

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Questions on security of energy supply are highly expressed
Security of Energy Supply

• The SEE region is in energy deficit and depends on energy imports

• SEE countries are not enough connected especially when it comes to natural gas utilities

• Security of energy supply firmly depends on forthcoming electricity production capacities construction, transmission networks connection and pursuing projects of oil and gas supply in the region
What the Energy Community Can Do?

- Harmonisation of legislation
- Standardization of regulatory practice
- Cooperation and experience exchange on the energy efficiency and RES projects
- Experiences and know how exchanges
What the Energy Community Can’t Do?

• EC can not take responsibilities of the SEE countries
• Energy community cannot resolve particular country problems
• Countries of the Energy Community cannot move on faster in reform provision and institutional changes of energy sector than EU
• Energy community cannot be investor
Possible Regional Cooperation Opportunities

• Transmission networks linkage (electricity, natural gas and oil) within region countries
• Harmonization of the legislative framework and institutional capacity building necessary for market development (Energy community goal)
• Development of the regional energy stock exchange
• Development of the regional security system
• Development of the regional stimulative energy investment environment
• Expert and scientific institutions linkage
• The SEE region has to be observed from its energy features point of view, and not according to political needs and particular interest.

• Countries of the SEE regions have to take responsibilities for mutual linkage and pursue transmission utilities development.

• For each utility energy form type it is highly necessary to develop appropriate plan and to take responsibility for their realization.

• Perform linking according to the principle of an unknown buyer, while the cost of connecting has to be calculated jointly in the transmission price of the energy form for each country.

• Develop mechanism for regulated transmission & transit tariff calculations on real economic prices as a major premise of connecting transport networks.
Thank you for your kind attention!