



Republic of Belarus Ministry of Energy



ASSESSMENT OF SHALE GAS POTENTIAL AS ENERGY RESOURCE FOR THE REPUBLIC OF BELARUS

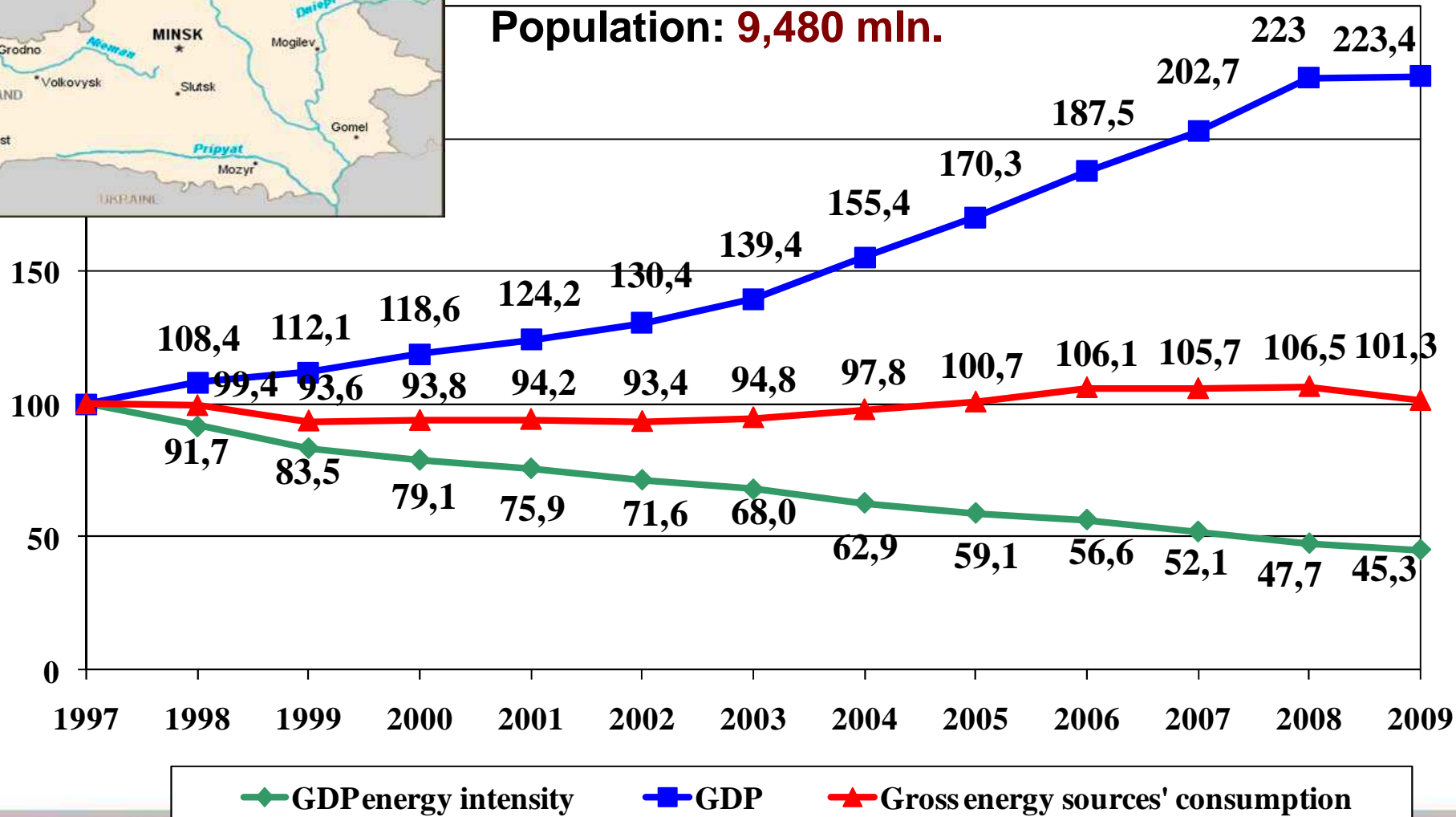
*Vladimir KOUZMITCH,
Director General CJSC "Belvneshenergo"*

UNECE "ENERGY WEEK"
22-26 November 2010

Macroeconomic Indicators of the Republic of Belarus (1990-2009)



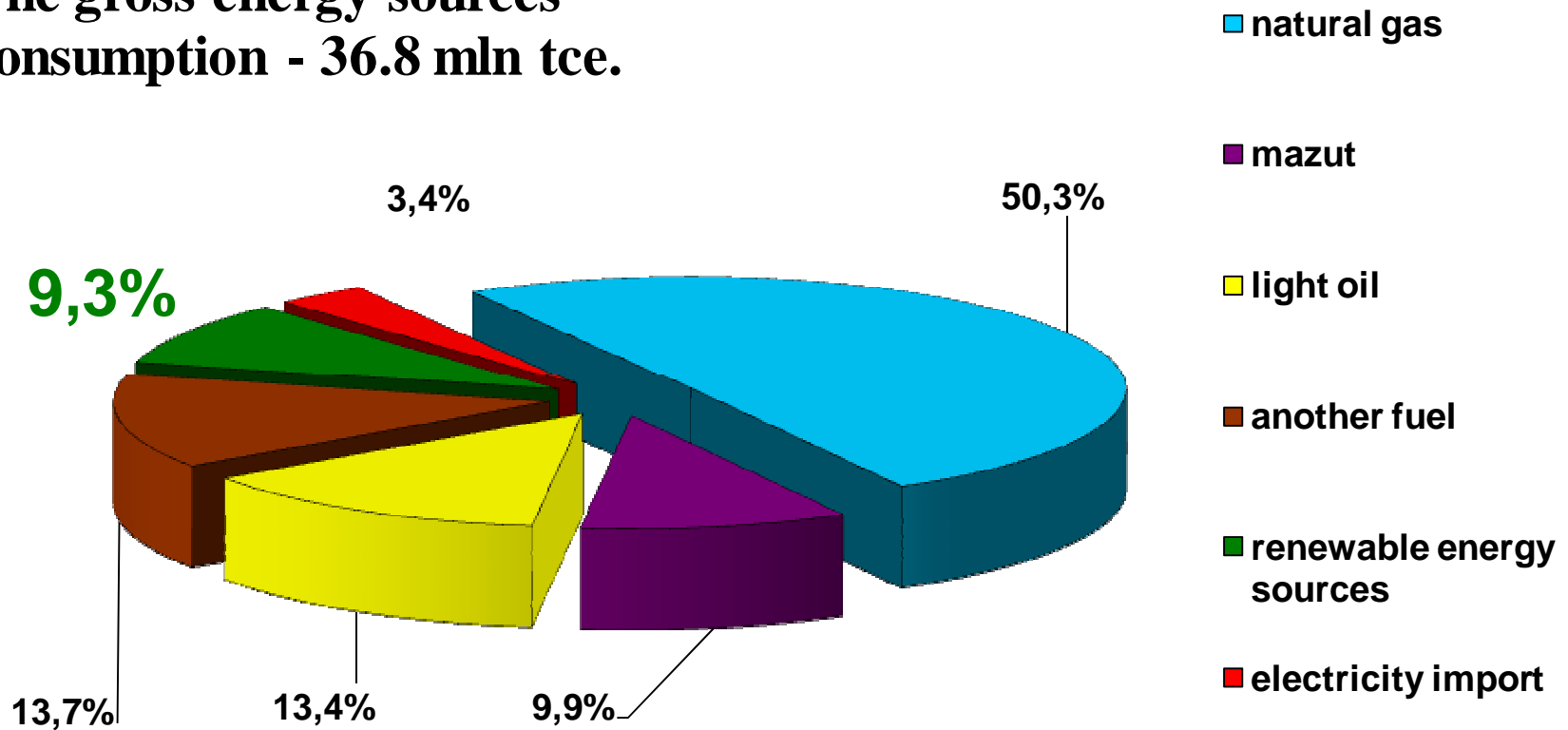
Territory: 207 600 sq. km
Population: 9,480 mln.



The structure of energy sources consumption in the Republic of Belarus, 2009



The gross energy sources' consumption - 36.8 mln tce.



Republic of Belarus Energy Policy for the Period up to the Year 2020:

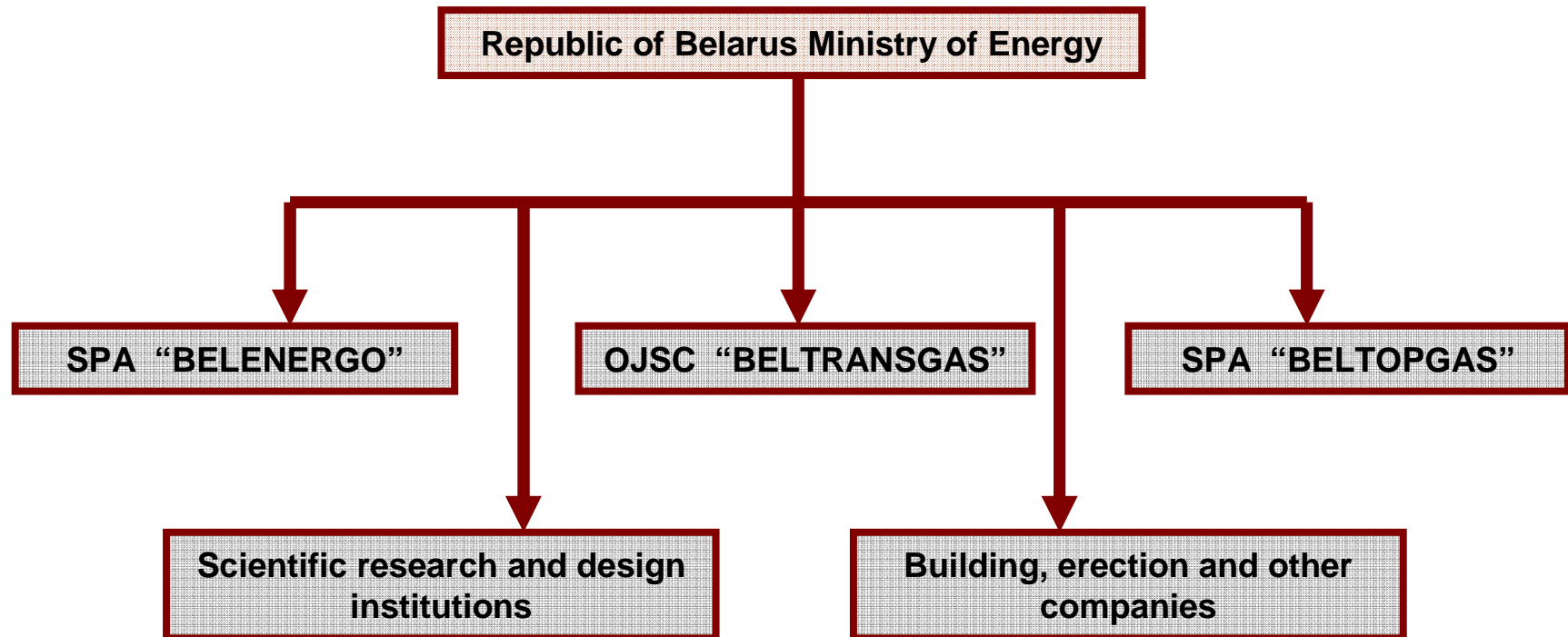


- ***“The Basic Principles of the Republic of Belarus Energy Security”***
- ***President of the Republic of Belarus Directive N 3 “Economy and Thrift are the Main Factors of the Country’s Economic Security”***
- ***“The Strategy for the development of the energy potential of Belarus” (August 2010)***





The Structure of the Republic of Belarus Ministry of Energy



Objective – government regulation of the energy sector of national economy

Lines of Activities of the Entities of the Ministry of Energy of the Republic of Belarus



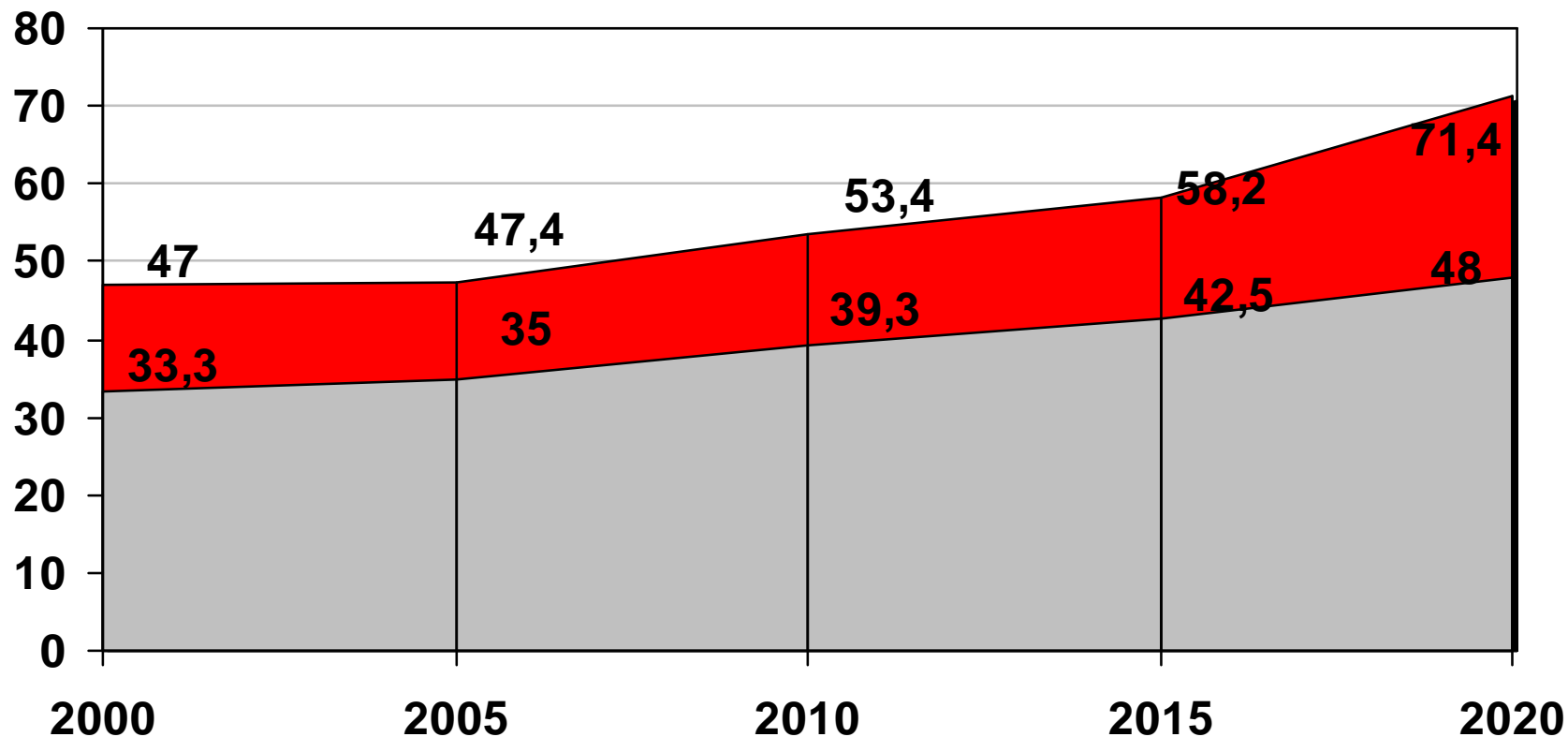
- **Gas, electric and thermal energy supply to consumers in Belarus**
- **Transit of Russia's gas**
- **Electric energy export and import**
- **Fuel and fertile soils production from peat for domestic and export needs**
- **Design, construction, mounting and adjusting of energy facilities**



Installed capacity:

■ <i>Power plants</i>	<i>8 233.3 MW</i>
➤ Condensation	3 489.5
➤ Co-generation	4 319.5
➤ Hydropower stations	16.1
➤ Industrial (bloc-stations)	408.2
■ Transformer substations 35-750 kV	<i>33,123 MVA</i>
■ Transmission lines	<i>268,200 km</i>
■ Heat networks	<i>5,210 km</i>

Electricity Consumption and Possible Production in the Republic of Belarus (bln. kWh)



■ Electric energy production ■ Electric energy consumption

Electric Grid of the Republic of Belarus



Conventional signs:

750 kV

400 kV

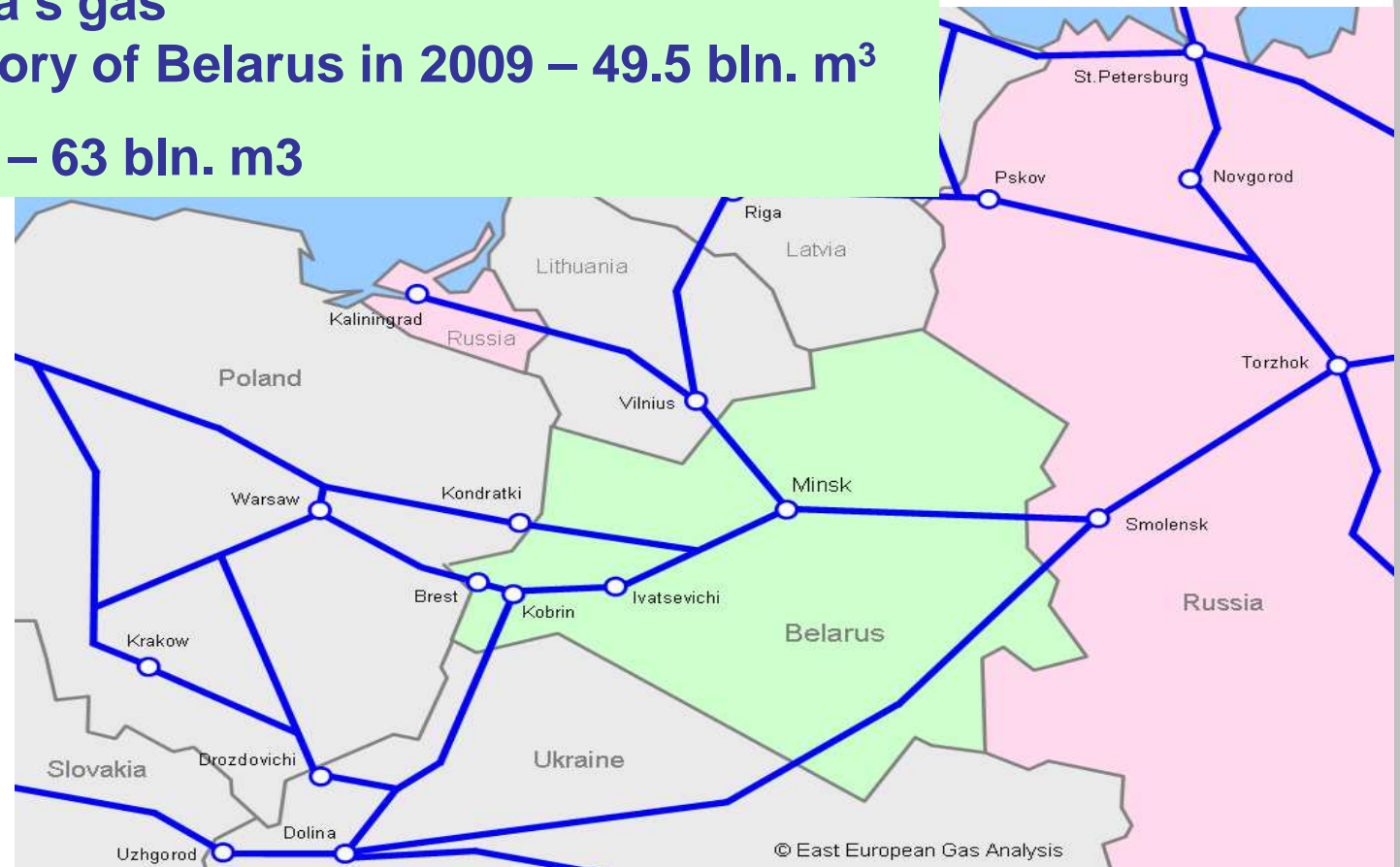
330 kV

220 kV

Main Belarus' and Neighbour Countries' Gas Pipelines



- ➔ Transit of Russia's gas across the territory of Belarus in 2009 – 49.5 bln. m³
- ➔ Transit capacity – 63 bln. m³



Torzhok-Kondratki-Frankfurt/Oder (Yamal gas pipeline), 1420 mm (56-in); Torzhok-Minsk-Ivatsevichi, 3 x 1220 mm (48-in); Ivatsevichi-Kobrin-Dolina, 2 x 1220 mm (48-in); Kobrin-Brest-Warsaw, 1020 mm (40-in); Minsk-Vilnius, 1220 mm (48-in); Torzhok-Dolina, 1420 mm (56-in)

Directions of gas supply diversification



1. Synthetic gas receiving from lignite
2. Synthetic gas receiving from oil shale
3. Construction of terminals on liquefied natural gas acceptance in the ports of the Baltic and Black Seas
4. Creation of JV (prospecting & gas production) in other countries
5. Exploration and mining of the domestic shale and tight gas (order of the President)

The potential of lignite in Belarus



Explored reserves of brown coal - 150 million tons,
thoroughly explored - 98.2 million tons,
the depth - 20-700 m,
the average thickness of lignite seam - 3-4 m, max. 9.19 m,
the heat of combustion - 1500-2000 kcal / kg.

The most promising deposits are located in the western part of the Gomel region (Zhitkovichi, Brinevo, Tonezhskoe).

It's been conducted the feasibility study on construction the mine and brown coal processing facilities by 2015.

The potential of oil shale in Belarus



2 main fields:

- Lubansky deposit - 1 223.1 million tons, thoroughly explored - 901 million tons
- Turovsky deposit - 2 683.9 million tons thoroughly explored - 696 million tons
 - the depth of the reservoir - 50-600 m, the stratum thickness 0.1-3.7 m
 - the lowest heating value - 1000-1500 kcal / kg
 - the ash - 78-80%

It has been developed the feasibility studies on construction of the mining chemical plant for oil shale mining and industrial processing (5 million tons per year by 2014)



Potential areas for shale gas exploration in the Republic of Belarus:

- Devonian complex of the Pripyat Trough (continue of the Dnieper-Donets Depression, Ukraine)
- Turovsky oil shale deposit



4 stages of the shale & tight gas search:

1. Regional forecast about the prospects of gas production
2. Local assessment of deposits' gas-bearing
3. Exploratory wells' drilling
4. Management development (project design, horizontal drilling, hydraulic fracturing)

Potential partners



- **ion company** – use of technology and high-resolution micro-seismic exploration (using seismic equipment of the RUE Belarusneft)
- **ZRG KROSNO & Schlumberge companies** – technology using for performing a lot of experimental **CKP** hydraulic fracturing works in the Pripyat Trough
- **NEWCO company** - design and highly effective hydraulic fracturing for tight gas extracting



Thanks a lot for attention

**We invite you to participate in a mutually-
beneficial cooperation!**

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