

**ENERGY MINISTERIAL
AND 9TH INTERNATIONAL FORUM
ON ENERGY FOR SUSTAINABLE DEVELOPMENT**

Exploring Pathways to Sustainable Energy in the Belarus-
Moldova-Ukraine Region

**Energy scenarios for Sustainable
Development in the Belarus-
Moldova-Ukraine Region**

Sergiu Robu,

Institute of Power Engineering,

Republic of Moldova

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Republic of Moldova.

- Location: East Europe, northeast of Romania
- Total area: 33845 km²
- Population: 3.39 million
- Capital: Chisinau, 716 thousands inhabitants, area 120 km²
- Moldova has NO fossil fuels resources



Energy System of the Republic of Moldova

Generation capacities

■ Cogeneration Power Plants

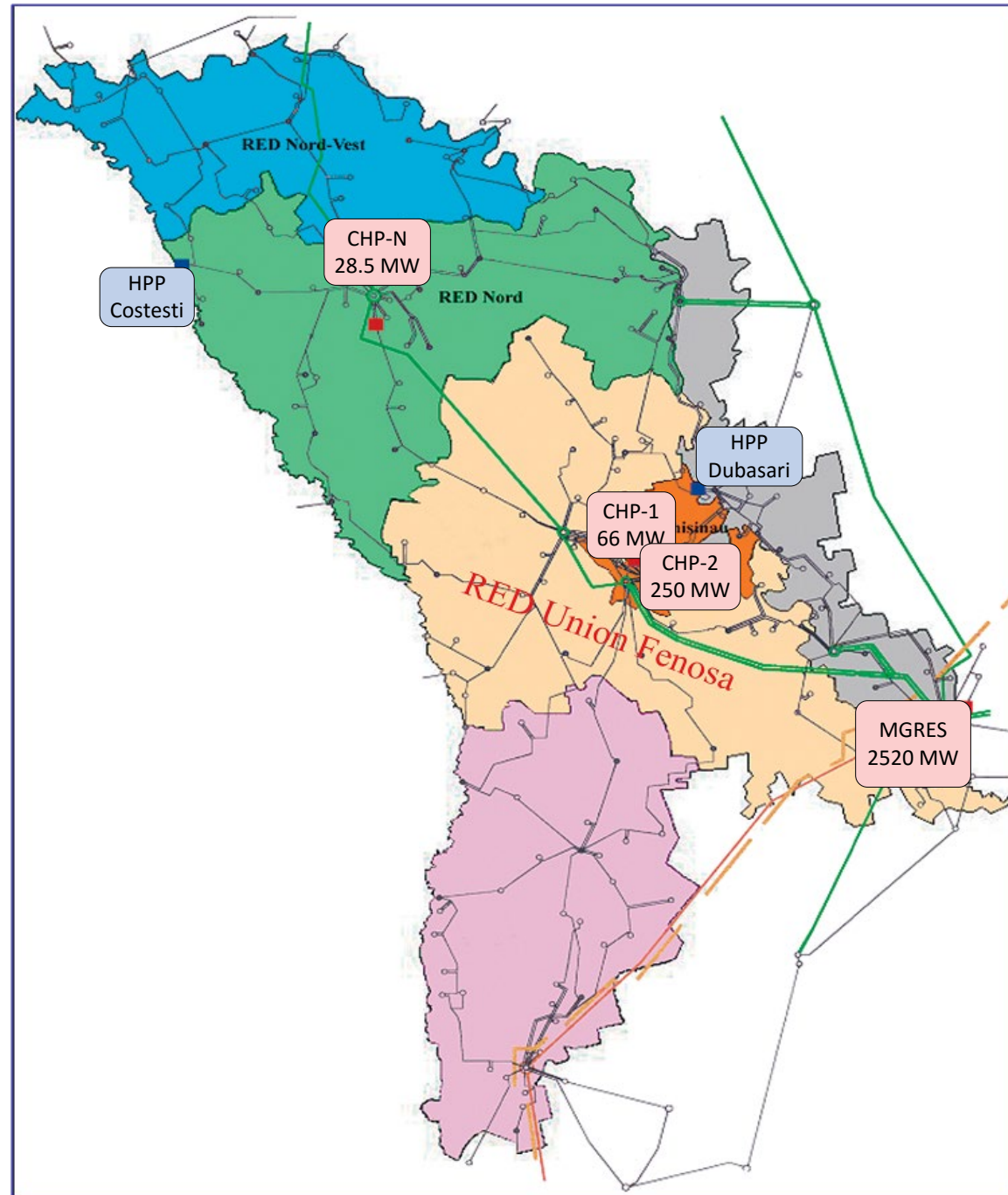
- CHP-1 (66 MW)
- CHP-2 (240 MW)
- CHP-North (24 MW)

■ 2 Hydro Power Plants

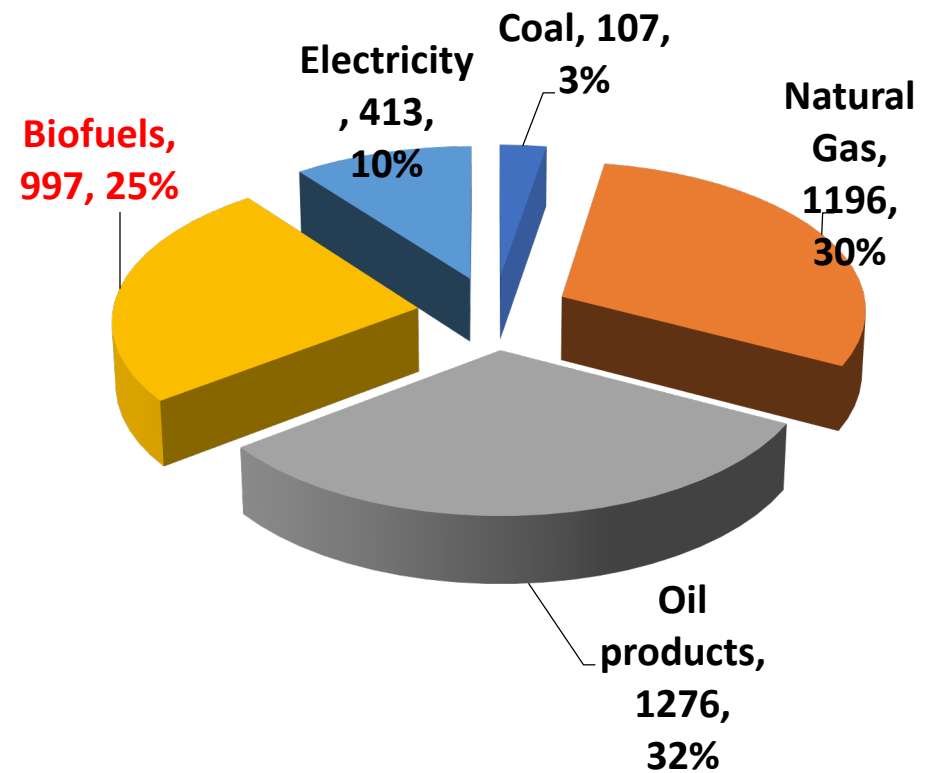
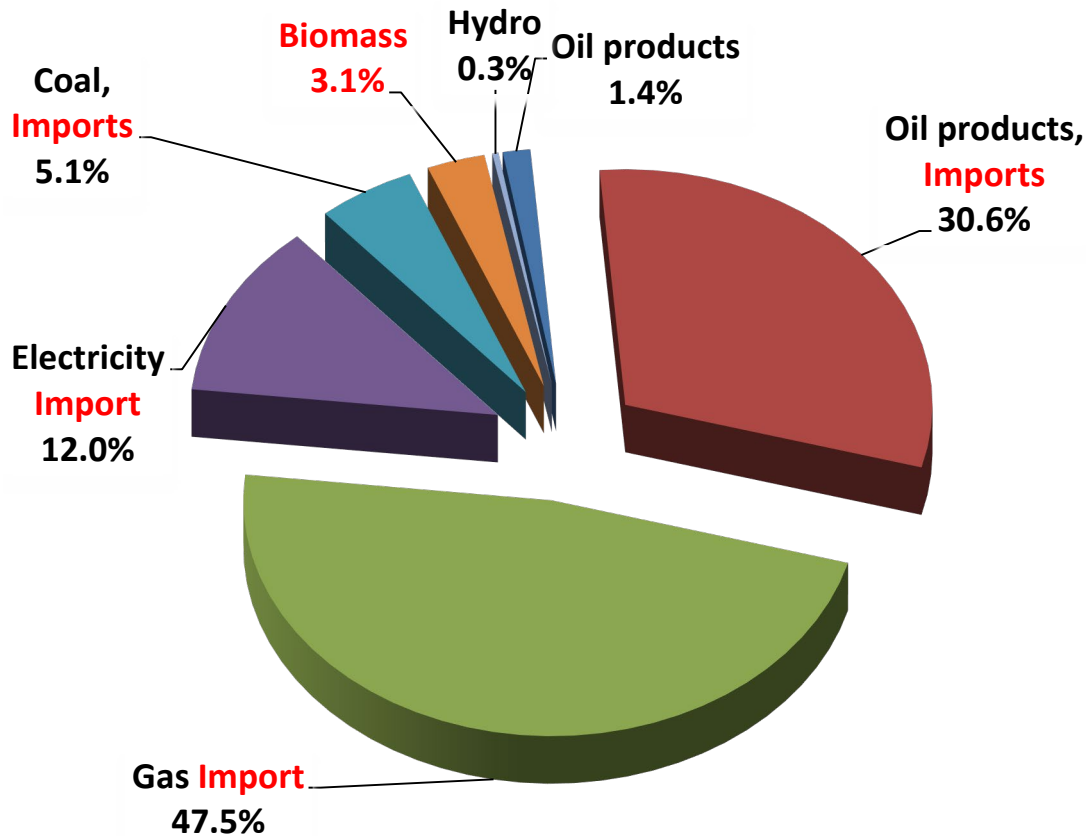
- HPP Costesti (16 MW)
- HPP Dubasari (48 MW)

■ Kuchurgan Thermal Power Plant (MGRES, 2520 MW)

■ 10 CHPs at Sugar Factories (98 MW)



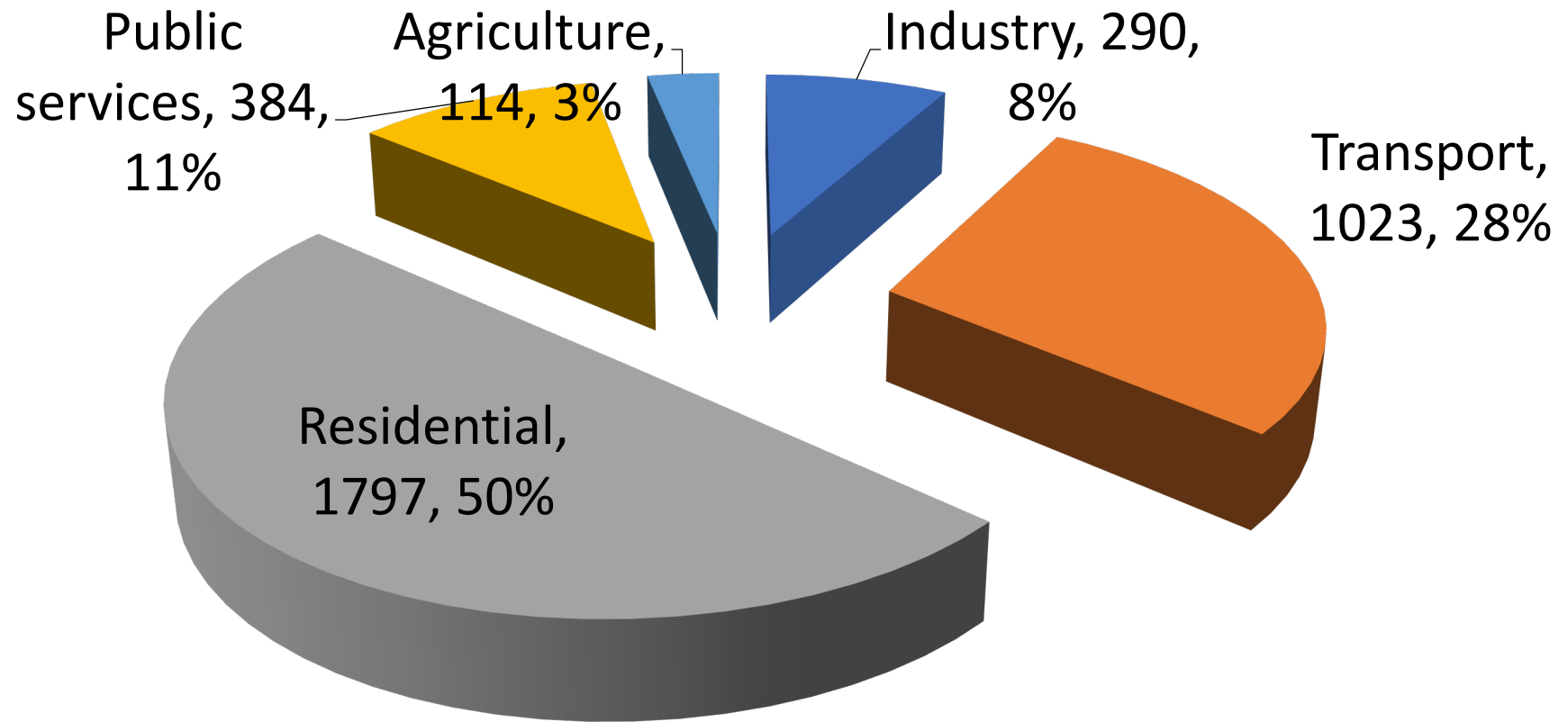
Energy resources of the Republic of Moldova, ktce, 2016.



Source: Energy Balance 2011 of National Statistics of Moldova

Source: Energy Balance 2017 of National Statistics of Moldova

Energy consumption by sectors, ktce, 2016.



Source: Energy Balance 2017 of National Statistics of Moldova

Moldova: Energy Sector

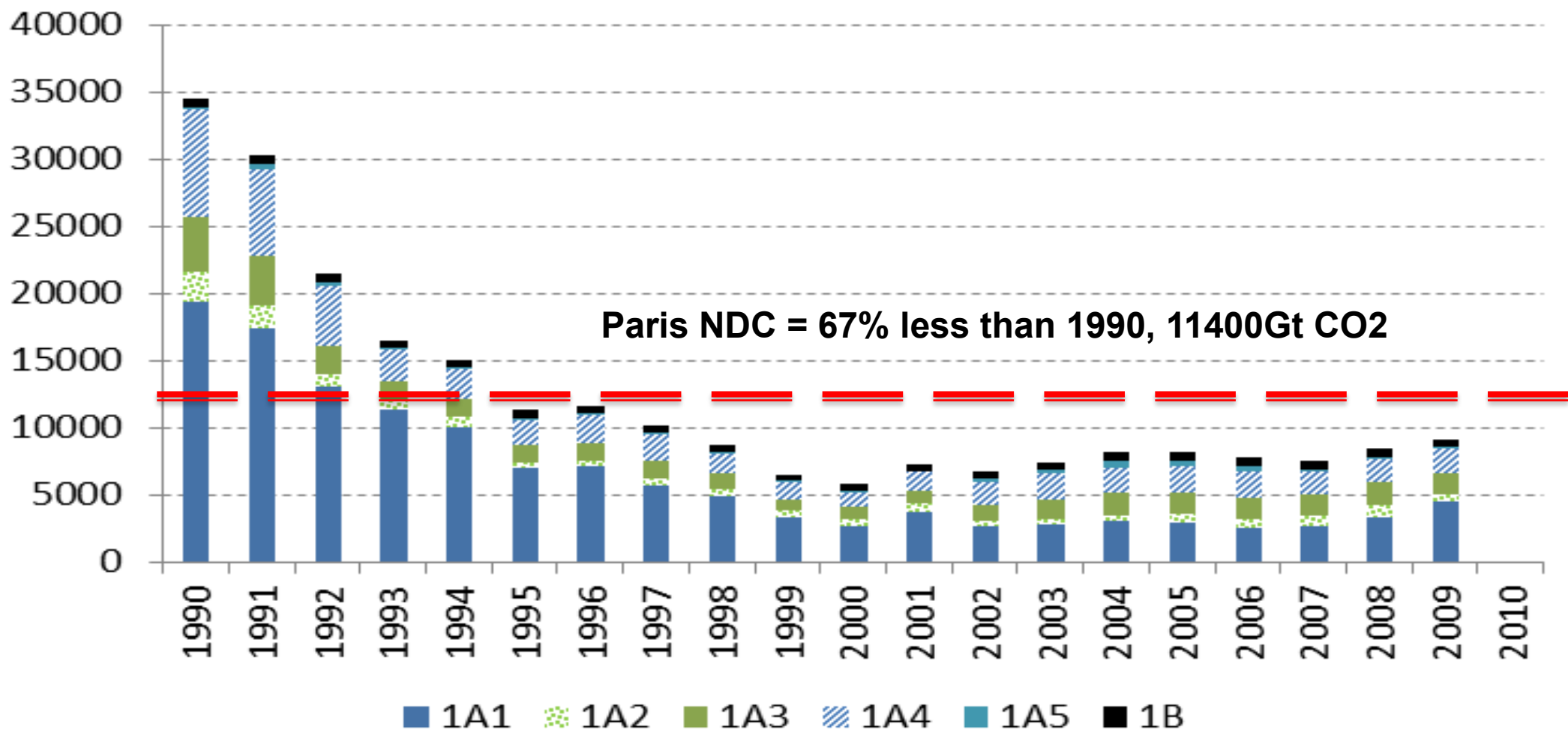
- **Moldova imports about 75% of primary energy;**
- **Gas is dominant fuel in Moldova;**
- **100% of electricity is produced from gas by CHPs;**
- **Hydro Power Plant produce only 0.3% of total, and there is no potential for increasing capacity of Hydro Power Plant;**
- **Energy Demand and prices expected to increase**
- **New PP of about 600 MW under consideration**

Republic of Moldova's National Determined Contribution

- The Republic of Moldova intends to achieve an economy-wide unconditional target of reducing its greenhouse gas emissions by **64-67 per cent below its 1990 level in 2030** and to make best efforts to reduce its emissions by 67 per cent. **Total Emissions in Base Year: 43.4 Mt CO₂ eq** (without LULUCF) and 37.5 Mt CO₂ eq (with LULUCF).
- The reduction commitment expressed above could be increased up to **78 per cent below 1990 level conditional** to, a global agreement addressing important topics including low-cost financial resources, technology transfer, and technical cooperation, accessible to all at a scale commensurate to the challenge of global climate change.

GHG emission trends in energy sector: 1990-2009

In the time series from 1990 through 2009, the total GHG emissions from **energy sector** decreased by 73.4%. MtCO₂



The Future of Sustainable Energy

requires a well-balanced combination of

- technological measures:
 - energy efficiency
 - penetration of renewable energies
 - advanced energy technologies
- and policy measures:
 - market reform
 - regulations
 - Price incentive for higher efficiency, competitiveness and sustainable technologies
 - Getting the prices right

Targets set by the Republic of Moldova

in the energy efficiency specific domain:

- a) to reduce the energy intensity by 10% in 2020;
- b) to reduce losses in the transmission and distribution networks by up to 11% in 2020 (up to 13% in 2015) for power, by 39% in 2020 (by 20% in 2015) for natural gas and by 5% in 2020 (by 2% in 2015) for thermal energy;
- c) to reduce greenhouse gas emissions (compared with 1990) by 25% in 2020;
- d) to reduce the energy consumption in buildings by 20% in 2020;
- e) to achieve a 10% share of refurbished public buildings in 2020.

According to EU energy efficiency improvement objectives and taking into account Moldova's commitments, in line with the Community Acquis, the National Programme for Energy Efficiency 2011-2020 sets up long run energy savings of up to 20% by 2020. The intermediate objective for energy savings, to be achieved by 2016, is set up at 9%.

Critical problems requiring adequate and swift measures

- no connection with the EU's internal electricity market
- to liberalize the market
- attraction of financial means
- the incomplete implementation of the acquis and the lack of specific actions to connect to the ENTSO-E system and to the EU system of main natural gas pipelines question the importance of political measures of liberalizing the energy markets.

More info:

http://www.serviciilocale.md/public/files/Energy_Strategy_2030_Final.pdf

Policy Drivers and Implications for Alternate Scenarios

The Energy Strategy of the Republic of Moldova until 2030, provides concrete guidelines for Moldova's energy sector development, with the **main goal to provide the required basis for economic growth and improved social welfare.**

1. Key Insights Arising from EE/RE Policies

- Evaluation of energy and investment requirements to meet economic growth.
- In which sectors of the energy system will EE/RE measures have the most significant impact (benefits)?
- How much (additional) direct investment will be required to achieve the RE target?
- To what degree are investments in EE/RE projects offset by the reduction of fuel expenditures, notably for imports?
- How do EE/RE policies impact the energy and electricity generation mix?
- What is the impact on CO₂ emissions?

Possible Scenarios

- Achieving CO2 target and Paris NDC
- 10% electricity from renewable sources by 2020 (PV, wind,...)
- 20% renewable energy in final energy consumption
- Distributed energy
- Role of nuclear in future energy mix
- Diversification of fuel for energy production.
- New power generation sources versus Import of electricity
- High penetration of air conditioning , impact on electricity demand

Thank you!

Sergiu Robu,

sergiu.robust@asm.md