

# Renewable Energy and Energy Efficiency in Bulgaria

---

Dimitar Doukov

Athens

May, 20-21 2008



Center for Energy Efficiency

# Preconditions for successful energy efficiency policy

---

- Reforms to restructuring and liberalization of the energy sector
- Commercialization of energy generation and distribution activities and privatization of facilities
- Limitation or full abolishment of subsidies
- Introduction of full cost recovery tariffs
- Real steps on the path of liberalization and to the integration in the European energy market

# National Energy Conservation Program until 2014

---

- Developed in accordance with the Energy efficiency Act, 2004
- Offers a set of tools for implementation of the state policy on enhancement of end-use energy efficiency
- Main objective is reducing the energy intensity of all economic sectors (industry, district heating, transport, agriculture, households and services)
- Comprises 63 measures for reducing energy consumption (approximately 70% of final energy consumption is covered)
- The investments required for the realization of the Program amount to approx. BGN 4.820 billion
- The final energy consumption will be reduced by about 1621.3 ktoe and CO<sub>2</sub> emissions will be reduced up to 5.6 million tones

# National program for renovation of residential buildings

---

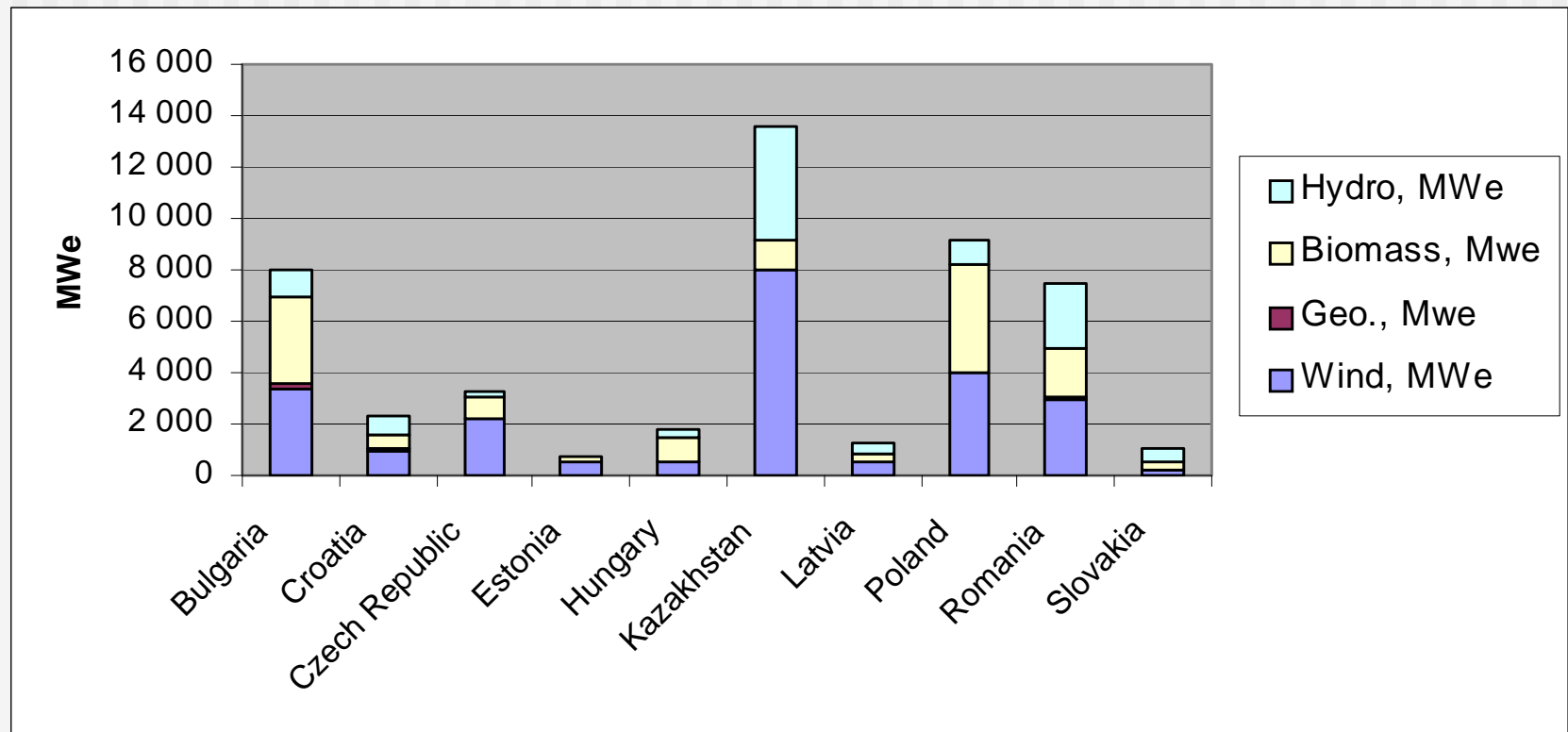
- Substantial share of the buildings' energy consumption in the country's final energy consumption – more than 40% (incl. 23.5% for residential buildings)
- Prevailing number of prefabricated panel residential buildings - more than 18,900 blocks of flats, located in 120 housing estates
- Very poor heat insulation - big potential for energy savings and improved comfort of living. Savings of heat energy are estimated at 35-40%
- Direct financial support (subsidy) from the state budget, that may cover up to 20% of the investment

# Law on the Renewable and Alternative Sources of Energy and Biofuels 2007

- Regulates and stimulates generation and consumption of RES energy in Bulgaria – Directives 2001/77/EC on the promotion of electricity produced from renewable energy sources and 2003/30/EC on the promotion of the use of biofuels for transport.
- Stimulates new technologies for generation of RES energy
- Creates national information data base about RES and biofuels
- Approves national indicative targets for utilization of RES and biofuels
- Council of Ministers approves National Long Term and Short Term Programs for utilization of RES and bio fuels and measures for achieving the national targets

# RES Regional Potential

## Estimated Renewable Energy Technical Potential by Resources (Mid Term 2020)



# RES potential of Bulgaria

- **Hydroelectric Energy:** Bulgaria has modest hydroelectric resources. The power generation is operating at 50% of the design capacity
- **Wind Power:** There are three main areas with annual average wind speeds in excess of 9 m/s, two with more than 7 m/s and several with wind speeds between 4.5 - 7 m/s. The wind energy resource potential is estimated at 2,200-3,400 MW.
- **Solar Energy:** The annual radiation for the country is 4.2 kWh/m<sup>2</sup>/day, mainly utilised for hot water heating
- **Geothermal Energy:** Bulgaria has reserves of geothermal energy. Currently is utilized 30 percent of its total potential, or about 107.2 MW producing some 1.637 TJ/year of energy
- **Biomass:** Exists a large potential of biomass as an energy source. 60 % of the overall land is agriculture lands, and approximately 30% is forest cover

# Issued licenses for generation of RES energy

by April 2008

	HPP	WPP	PVPP
License applications	1	10	2
Power MW	7	800	51
Issued Licenses	1	7	1
Power MW	7	620	26
Applications for connection to the grid	30	50	3
Power MW	90	2257	76



# REEES Common Barriers in the Region

---

- Slow progress in energy sector reform and tariff policies
- Poor economics of renewables compared to fossil fuels
- The countries still possess a considerable generation capacity
- Absence of specialized sources of financing for RES projects
- Limited offer of advanced technologies at the domestic markets and high price of the equipment

# Recommendations for regional activities

---

- Support in the development of legislative frameworks on energy efficiency and RES
- To develop national action plans that would contribute to an effective implementation of policies and to boost investors' confidence
- Support the transfer of RES technologies by joint research, market studies and other activities.
- To improve the ability of local communities to prepare bankable projects.
- To achieve synergies between other regional initiatives dealing with EE and RE projects.

## Contacts:

---

- Center for Energy Efficiency EnEffect
- [www.eneffect.bg](http://www.eneffect.bg)
- Bulgarian Energy Efficiency Fund
- [www.bgeef.com](http://www.bgeef.com)