Republic of Macedonia

Policy Reforms to Promote Energy Efficiency and Renewable Energy Investments

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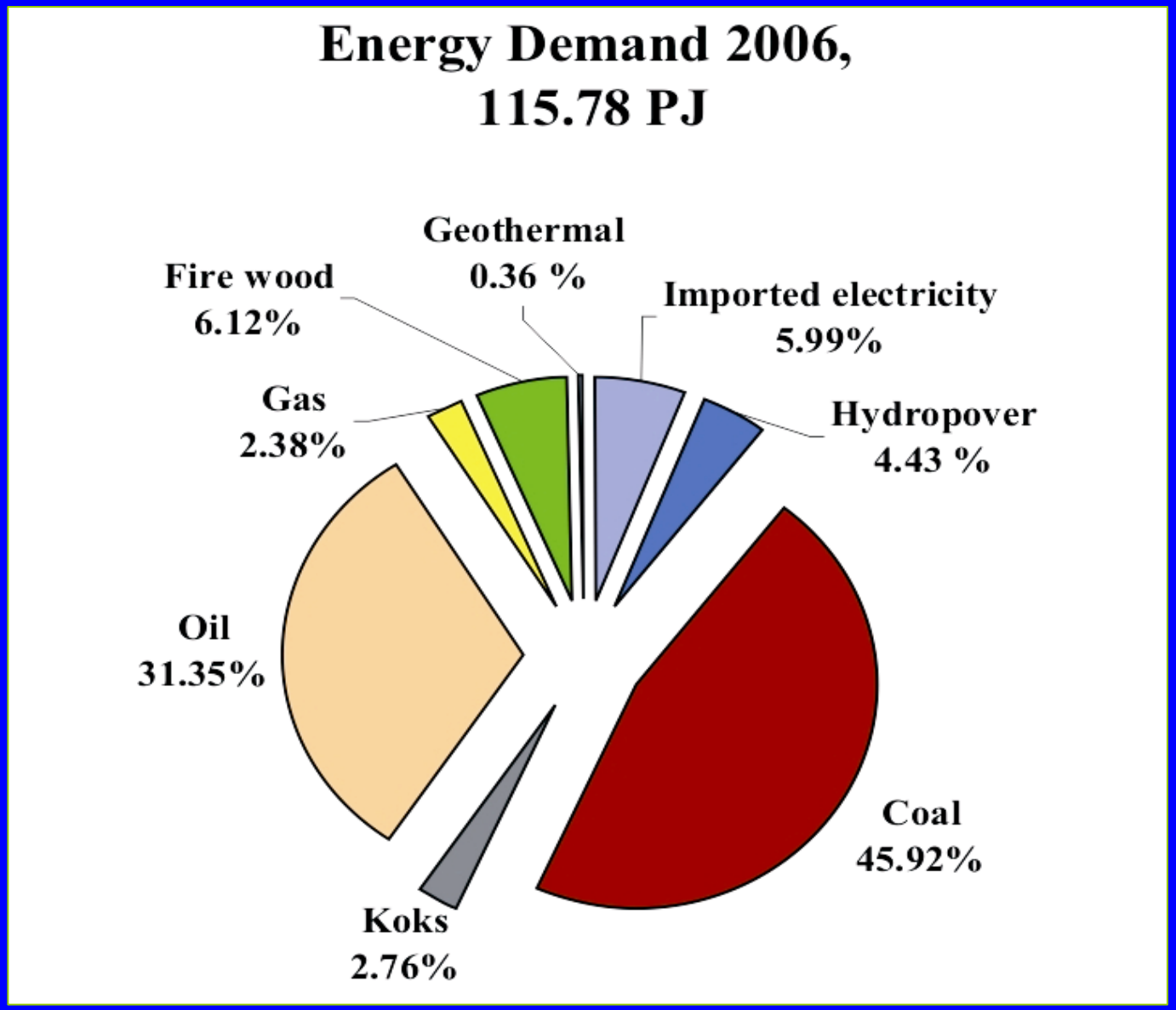
INTRODUCTION

- 25713 km2
- 2.1 million inhabitants
- Energy supply is based 50% on domestic fossil fuel and hydropower
- 50% on the import of gas, liquid fuel and coal
- Gross energy demand is approximately 120 000 TJ
- 57 GJ per capita
- Electricity consumption 9000 GWh
- Electricity import (2007) 2900 GWh
- 610 M€/year for energy import

Energy Demand



Basic energy data

Coal production	7.2 Mton
Thermal Power Plants	1010 MW
Hydro Power Plants	515 MW
5 district heating system total capacity	600 MW
Natural gas 60-80 Mm3 /a (800 Mm3 capacity)	
No indigenous oil reserves	
Consumption of oil derivatives	800 000 t/a
Firewood participate in energy balance with	7 %
Four regions with geothermal energy	

Electricity production

		2005	2006	2007
Electrical energy	**GWh**	**8100**	**8400**	**9700**
Production	**GWh**	**6500**	**6500**	**6800**
Import	**GWh**	**1662**	**1900**	**2990**
Distribution- Low voltage consumers	**GWh**	**4900**	**4700**	**4900**
Losses	**GWh**	**1000**	**1370**	**1523**
Natural gas	**m3 million**	**77**	**82**	**113**
Import expenditure	**€**	**308**	**450**	**587**

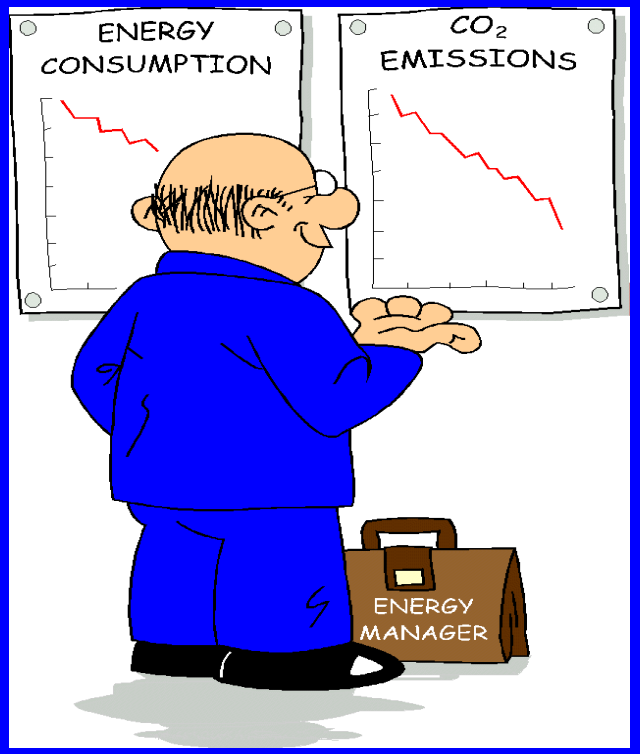
Country	Energy intensity	
	toe/000's US$ GDP	toe/000's US$ GDP (PPP)
Albania	0.52	0.16
Bosnia	0.68	0.16
Bulgaria	1.49	0.38
Croatia	0.34	0.22
Romania	1.18	0.31
Serbia and Montenegro	0.50	0.26
Turkey	0.38	0.19
Republic of Macedonia	0.53	0.23
Austria	0.11	0.15
France	0.15	0.19
Germany	0.13	0.18
Greece	0.20	0.17
Italy	0.14	0.13

Why Energy Efficiency

Valuable resource as wining solution in more fronts;

one action resulting with five main benefits for consumers and society

- Saving money,
- Increasing comfort,
- Protecting environment
- Improving State's economy
- Promoting national security in the field of energy



- The first Energy Efficiency Programme dates back to 1988 and was valid until 2000
- More than 100 projects have been realized by June 2000
- Energy Efficiency Strategy (up to 2020), prepared with USAIDs technical and financial assistance, accepted 2004

Main Pillars of the Strategy

- EE Fund establishment
- Stimulation measures
- International obligations fulfillment
- Energy supply diversification
- Natural gas penetration
- Energy interconnection improvement
- Energy intensity decreasing

Institutional programs

- ***RESIDENTIAL AND COMMERCIAL BUILDINGS PROGRAM***
- Building Energy Code for New Construction
- Energy Standards and Labeling
- Energy Auditor Certification Program
- District, electric and space heating (insulation, weatherization)
- Dispersed production of energy (cogeneration)
- ***INDUSTRIAL PROGRAM***
- (improvements in power factories, lighting system, electric motors and drives, process, boilers, air compressors)
- ***STREET LIGHTING PROGRAM***

BARRIERS

- Legislative
- Financial nature
- Organizational

LEGISLATIVE BARRIERS

- Non-existence of By-Laws connected to the
  - *Energy Law*
  - *Law for Environmental Protection (IPPC – working permissions)*
  - *Carbon Trade (CDM)*

- Harmonization with EU legislation in progress

FINANCIAL BARRIERS

- Weak economy - insufficient financial means for implementation of EE Investment Projects
- Municipalities are not solvent to take loans (borrow money)
- Commercial banks are still hesitant to finance any EE municipal projects
- Lack of an Energy Efficiency Fund
- Lack of awareness, information, and confidence
- Lack of capacity in EE project development, including engineering, installation, and monitoring of energy efficiency measures

Who and How?

- Ministry of Economy has not sufficient employees working on Energy issues
- State Energy Agency- new (without sufficient experience)
- There is the Fund for Ecology
- No Ministry for Energy
- No State Energy Efficiency Agency
- No Fund for Energy Efficiency
- The field is covered partially by NGOs activities, partial financial support by the Government

State Energy Agency

- Main task – Implementation of Energy Policy of the State
- Preparation of mid/long term energy strategy and development plans
- To propose and coordinate preparation of studies and projects for EE and RES
- To issue green certificates
- Revision of economical viability of proposed projects
- Regional collaboration and coordination of regional projects
- Preparation of laws, by laws, technical recommendations and directives - harmonization with EU
- Energy data base preparation
- Responsible for management of 5 M$for EE projects
- Control of distribution of 600 k$ given to MT ESCO

RECOMMENDATIONS

- To adopt EU Recommendations concerning EE (especially for buildings performances)
- To prepare necessary by laws
- To establish EE Fund, good climate for investments
- To encourage national and regional networking in the field of EE (MAMNEE, RENEUER, Energie Cites)
- To support education in the field of EE – starting from kindergartens to raising awareness of public opinion

Personal recommendation instead of Thank you for your attention