



# The Macedonian Experience in Municipal Energy Efficiency Finance

## CONSTRAINS AND BARRIERS

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# INTRODUCTION

- 25713 km<sup>2</sup>
- 2.1 million inhabitants
- energy supply is based 50% on domestic fossil fuel and hydropower
- 50% on the import of liquid fuel and coal
- gross energy demand is approximately 110 000 TJ
- 55 GJ per capita





- The first Energy Efficiency Programme dates back to 1988 and was valid until 2000
- More than 100 projects have been realized by June 2000
  - *the use of geothermal energy*
  - *incorporation of solar collectors*
  - *the use of the heat of the recovered condensate*
  - *briquettes from wood waste*
  - *heating of urban areas*
  - *using natural gas etc.*



## 1999 Programme for Energy Efficiency

- **1994 credit funds - 9 million DM from the EBRD**
- **Preparation of the Energy Efficiency Strategy (up to 2020), receiving technical and financial assistance from USAID**



## Main Pillars of the Programme

- Establishment of EE Strategy and EE Fund
- Information and education on EE
- Stimulation measures
- Amendments to legislation
- Fulfillment of international obligations



## BARRIERS

- **Legislative**
- **Organizational**
- **Financial nature**



## LEGISLATIVE BARRIERS

- **Non-existence of an adequate Energy Efficiency Law**
- **Legislation concerning EE is incomplete**
- **International co-operation is necessary to adapt the legislation of EE to EU legislation**



## ORGANIZATIONAL BARRIERS

- Ministry of Economy has not sufficient people working on Energy issues
- No Ministry for Energy
- No State Energy Efficiency Agency
- State Energy Agency established few months ago
- The field is covered partially by NGOs activities, without financial support by the Government



## FINANCIAL BARRIERS 1

- **Weak economy - insufficient financial means for implementation of EE Investment Projects**
- **Municipal revenue from managing municipal property**
- **can be lend**
  - **sold**
    - **exchanged**
      - **given for concession**
        - **used as a bank guarantee**



## FINANCIAL BARRIERS 2

- **Uncertainty of municipal revenue**
- **Dependence on State (political?) subsidies**
- **Commercial banks are still hesitant to finance any EE municipal projects**
- **Municipalities are considered as risky clients**
- **Lack of understanding and capital available through Financial Institutions**
- **Lack of an Energy Efficiency Fund**



## FINANCIAL BARRIERS 3

- Flexible financing schemes are needed
- Cooperation with ESCOs have to be used - there are only 2 ESCOs in operation
- Lack of awareness, information, and confidence
- Lack of capacity in EE project development, including engineering, installation, and monitoring of energy efficiency measures



## ENERGY EFFICIENCY POLICY

- To increase the EE of the economic entities by reduction of the energy consumption
- To improve the technical aspects of the domestic industry for production of EE equipment
- Application of new technology solutions with low energy consumption
- To move to a centralized supply with heat energy in all bigger urban areas



- Diversification of energy supply
- Penetration of natural gas
- To improve energy interconnection
- Energy sector reorganization
- Decreasing energy intensity  
(50 % higher compared to neighboring EU countries)



## *THE REASON FOR THE HIGH-ENERGY INTENSITY*

- Heavy use of energy in metal processing industry
- Low-efficiency power generation, supply and consumption
- The prevalence of using electric energy for residential heating during the winter



## E E and Renewable Energy Strategy

- **Implementation of the identified programs should be priorities for the Municipalities in the next period**
- **Preparation of Energy supply plans**
- **Preparation environmental protection plans**
- **Urban planning (related to the powers of municipal administration to impose energy efficiency requirements when approving architecture projects and issuing construction permits)**



- Operation/ energy management of municipal institutions (schools, nurseries, kindergartens, welfare and healthcare facilities, office buildings, museums etc.)
- Local transportation
- Ownership and operation of district heating systems
- Ownership and operation of street lighting
- Water supply system management
- Solid waste collecting and treatment



## The States' duty is to ensure

- **Good climate, offering benefits to the investors**
- **Creating mechanisms and conditions for using energy as economically and efficiently as possible**
- **Mutual access to technical and economic data**
- **Stable and transparent legal frameworks**



## Development of EEIP

- EE projects in Companies, with high financial requirements



- New projects
- Reconstructions, modernization, rehabilitation

- EE projects belonging to low-income consumers (Municipalities, SMEs)





## RECOMMENDATIONS

*Narrow scope of  
energy-related duties*

- **LLSG establishes only a framework of municipal responsibilities**
- **General municipal responsibilities and particular energy-related duties are still rather limited**



- **Poor municipal creditworthiness:**
  - *Establishing guarantee funds/schemes to address the guarantee/collateral problem*
- **Inability to ensure proper collateral:**
  - *Establishing guarantee funds/schemes to facilitate municipal borrowing*
  - *Assigning clear municipal property rights*



**Thank  
You**