



Workshop

“Joint Implementation and Clean Development Mechanism among the BSEC countries”

(9 November 2007, Kiev)

Moldavian CDM Projects

Dr. Sc. Mihail Chiorsac, Dr. Sc. Vitali Postolati, Iulia Dupleva,
Institute of Power Engineering, Academy of Science, Moldova



KEPA



GPOGC



BSREC



IPE



IPE



ESEMI



Introduction

■ *Moldova environment protection Policies*

- **Main stakeholder:** Ministry of Ecology and Natural Resources of the Republic of Moldova
- **The basic environment documents:**
 - The national plan of the nature protection activity (accepted in 1996)

The main attention has been given to water supply and pollutant water purification. In 2001, a new environment concept was approved by the Parliament: "The Policy in the field of protection of the environment " which includes additional aspects on power sector and energy efficiency.

- " The atmosphere protection Law ", accepted in 1997: concrete norms of an allowable level of pollution of air and standards are established
- " The Law on the taxes of air pollution ", approved in 1998.

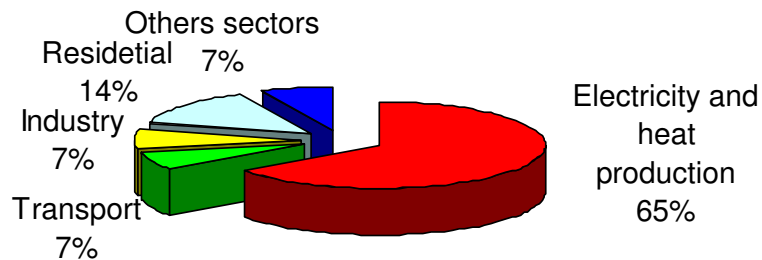


■ *The purpose of Government in the field of environment protection:*

- to approximate the national legislation at the one of the European Union.

Moldova has had ratified 17 environment protection conventions, including UNO Frame convention on climate change (June 1995). In April, 2003 Moldova joined to Kyoto's Protocol.

The sources of CO₂ emissions in Moldova





CDM Projects in Moldova: direction of development and implementation

■ *Power sector*

➤ Features:

- absence of own primary power resources;
- more than 70% of electricity is imported;
- rehabilitation of obsolete local Combine Heat Power Sources (CHP).



- *Responsible institution for development and implementation of CDM Projects:*
 - National Department for CDM that is in frame of the Ministry of Ecology and Natural Resources



CDM projects launched in Moldova

- *Moldova Biomass Heating in Rural Communities*

small-scale Projects:

- Project 1
- Project 2

- *Moldova Soil Conservation Project,*

- *Moldova Energy Conservation and green gases emissions reduction*



Moldova Biomass Heating in Rural Communities

- *Purpose of the project activities :*
 - use of the biomass as a clean source of production the heat in rural areas for increasing the SIF (Social Investment Fund) - use of straw as fuel for heat production;



- *Project activities contribution to sustainable development:*
 - rehabilitation and upgrade of the deteriorated heating systems of public buildings including economic efficiency, social equity, environmental and technological sustainability:



- ***Economic:*** the project leads to a decrease in the cost a heat unit production
- ***Social:*** the project allows to decrease payment burden for consumed energy resources and increase local employment
- ***Environmental:*** Conventional coal-burning boiler houses create massive pollution; they represent one of the largest source of air pollution and greenhouse gas emissions. By using the straw as fuel we can demadge the pollution



Financial support

- International Bank for Reconstruction and Development (IBRD) as the Trustee of the Community Development Carbon Fund



- *The main feature* is the use of biomass (straw) as fuel for heat production
- *The considered project activities:* technologically independent, stande-alone, and spread out all over the country
- *The Project participants:*
 - Carbon Finance Unit;
 - Local public authorities.



Terms and Impact

- ***Project 1:***

Starting date: 15 January, 2006

Expected lifetime: 15 years

Fixed crediting period: 10 years

- ***Project 2:***

Starting date: 1 January, 2008

Expected lifetime: 15 years

Fixed crediting period: 10 years

- ***Cumulative savings***, tCO₂-equivalent:

	Project 1	Project 2
- For 10 years	178 845	178 485
- Up to 2008	121 767	83 715
- 2008-2012	95 130	83 715



Moldova Soil Conservation Project

■ *Purpose of the project activities :*

- to achieve multiple objectives in terms of the restoration of degraded lands through improvement in the vegetative cover, enhanced supplies of forest products to local communities, and increases in the GHG removals from the degraded lands;
- to increase the financial investments for restoration and increase the area of lands under forests and greens plantings for the "sale" of unused share of allowable limits of carbon emissions for Moldova.



■ *Project activities contribution to sustainable development:*

- increase the forest cover by 0.04% (19,768 ha), prevention of soil erosion, restoration of degraded lands, production of fuelwood and timber products to meet the needs of rural communities and to improve air environment.



Implementation support

- The cost of implementation the project during first 11 years (2002-2012) is estimated at US \$13.34 million. The project cost will be shared among Moldsilva (61%), Ecological Fund of the Moldovan Ministry of Ecology, Constructions and Territory Development (6%), and 151 local councils (33%).



Benefits:

- *Enhance the GHG* removals by preventing soil erosion, which currently ranges up to 50 t/ha of soil loss Duration of the project activity/Crediting period;
- *Prevent land slides*, improve hydrological regime, and minimize water and wind erosion;
- *The local population* will benefit from the increased supplies of forest products;
- *Protection of threatened species*, improvement in the ecological succession, and restoration of habitats of several endangered flora and fauna



Moldova Energy Conservation and green gases emissions reduction

■ *Project background*

project has based on the Heat supply and efficiency improvements component of the World Bank Moldova Energy-II Project¹, which nowadays is under implementation in the Republic of Moldova. The project refers to energy conservation measures in public buildings and consequently to GHG emission reduction.



According to the WB Moldova Energy II Project - refer to least cost technical solutions, which have to satisfy the required heating standards at minimum costs the heating component is to be implemented in three phases



The first phase provides to carry out independent non-centralized heat supply of 20 public buildings in municipality of Ungheni, including installation of 4 heating plants, connection pipes and individual heating substations for 3 kindergartens and a medical school. The capacity of the heating plants allows the connection of the neighboring residential buildings to the heating sources;



The second phase - estimation of efficiency of the introduced measures is being prepared (identified and appraised) with the assistance of the Swedish and local consultants.



The third phase - definition of scales of introduction of the developed measures on all Republic, their efficiency, necessary terms of implementation and necessary financial support will be identified and appraised at the finished of 2007



■ *Purpose of the project activities :*

Green House Gase emission reduction as result of efficiency improvement of technology of burning of fuel for production and supplying of thermal energy for public buildings (kindergartens, schools, vocational schools, hospitals, polyclinics etc.) in accordance of the WB Moldova Energy II Project.



■ *Project activities contribution to sustainable development :*

To implement non-centralized systems of supply by a heat on the basis of restoration, modernization and construction of the new systems of heat supplying for public buildings and as result, increase of efficiency of heat supply at the minimal financial expenses with minimal influence on the environment .



Financial support

- International Bank for Reconstruction and Development (IBRD) as the Trustee of the Community Development Carbon Fund



The main benefits of the project:

- (a) reducing fuel consumption through energy efficiency measures;
- (b) decreasing payment burden for consumed energy resources;
- (c) increasing of heating service quality;
- (d) reducing the amount of GHG emissions and other pollutants.



The main benefits of the project:

Besides it, the project will increase the living and activity conditions within the considered public buildings by increasing:

- the room heating temperature;
- the duration of heating period;
- the heated areas;
- it will make available and affordable hot water in such buildings like hospitals and polyclinics, schools and orphanages etc.



Project participants:

- Moldova (host country) Carbon Finance Unit
Moldova;
- The Netherlands International Bank for
Reconstruction;
- IBRD as the Trustee of the Community
Development Carbon Fund.



INFORMATION REGARDING PUBLIC FUNDING

- The total Energy II project financing will be US\$ 39.93 million, of which US\$35 million would be financed from an IDA credit, US\$4.33 million from internal cash generation and municipal contributions and US\$0.6 million from the Swedish International Development Agency (SIDA).