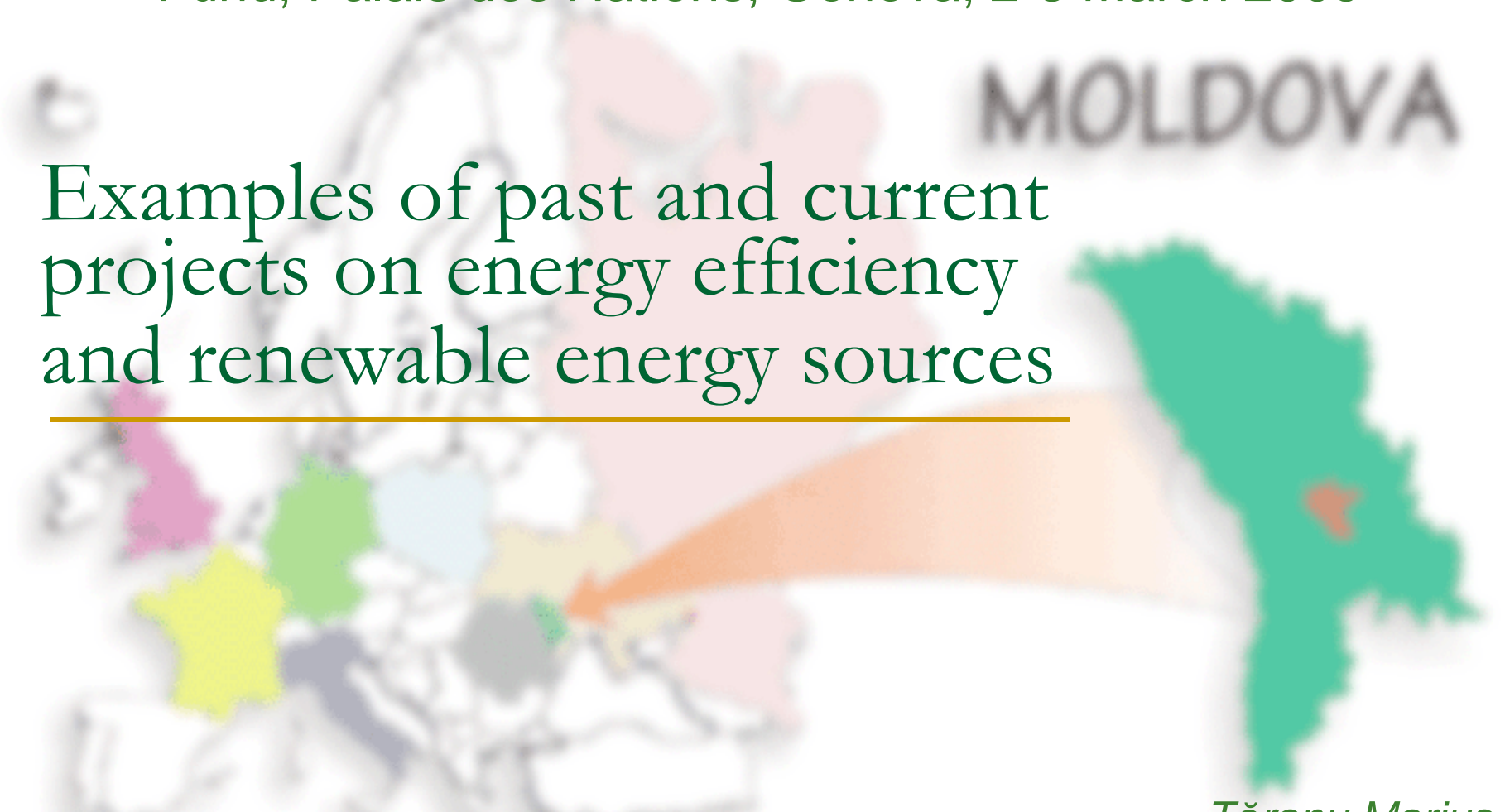

Workshop on functioning and requirements of the Investment Fund, Palais des Nations, Geneva, 2-3 March 2009

Examples of past and current projects on energy efficiency and renewable energy sources

MOLDOVA



*Țăranu Marius,
Team Leader, Climate Change Office,
Ministry of Environment and Natural Resources*

Renewable Energy Sources

- Project name: *Renewable energy from agricultural waste (REAW) – already finished*
- Agency: *World Bank*
- Focal Area: *Climate Change*
- Implementation period: *May 2005 – April 2008*
- Total Project Financing: *2.652 million US \$*
 - GEF financing: *0.998 million US \$*
 - Government co-financing: *1.435 million US \$*
 - Other co-financing: *0.219 million US \$*

REAW Project – Summary

- Project provided foundation for a broader and more efficient use of biomass fuel (straw) in rural communities, as a substitute for fossil fuels (1 ton of straw substitutes 550 kg of coal or 350 m³ of natural gas);
 - Under the Project there were developed mechanisms for the provision of replicable, economically viable, and environmentally friendly sources of heat in Moldova;
 - The Project was replicated in 8 rural communities by replacing in 11 public buildings the existing coal boilers with straw fuelled ones;
 - Project contributed to the creation of a transaction based market for biomass (straw) on the basis of supply contracts for heating systems in rural communities of Moldova;
 - Within the Project there were applied technology systems to service the energy demands of rural communities utilizing available and unused biomasses;
 - The Project contributed to developing the commercial infrastructure to produce, promote market and sell biomass energy systems.
-

REAW Project – Outcomes

- **Out of project replication of biomass heating system [in around 60 rural communities of Moldova];**
 - **Demonstration of social and economic benefits of renewable energy [*decreasing by 2-3 times the operating costs*];**
 - **Identification of least expensive “local solutions” for production of biomass systems [*in 2009 in Moldova started the production of straw bale boilers (on license of Danish Company “Passat Energy”), reducing thus by 25% the implementation cost of such projects*];**
 - **Encouraging development of straw bale market [*annually, in the selected rural communities are produced around 1,500 tons of bale straw*];**
 - **Improvement in global and local air quality for a total installed capacity of 2.7 MW by reducing the GHG emissions [*annually, by 3,052 tons of CO₂ eq.*];**
 - **Decreasing in dependence on fuel imports [*switch of fossil fuels by biomass*];**
 - **Reduction in the field burning of agriculture wastes [*previously, it was used to burned in field around 30-50% of the agricultural residues generated*];**
 - **Increase in general awareness concerning the use of alternative energy sources.**
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Energy Efficiency

- Project name: *Moldova Energy II Project - ongoing*
- Agency: *World Bank*
- Focal Area: *Energy Sector*
- Implementation period: *since 2 March 2004*
- Current closing date: *31 December 2009*
- Additional financing closing date: *31 December 2011*
- Total Project Financing: *46 million US \$*
 - Original credit: *35 million US \$*
 - Additional financing: *11 million US \$*
 - IBRD/IDA : *10 million US \$*
 - SIDA: *1 million US \$*

Moldova Energy II Project

Project components:

- I. Electricity system upgrade;
- II. Heating supply and efficiency improved;
- III. Technical assistance for project implementation and energy sector reforms;
- IV. Project management and administration

Objectives:

- To improve the security and reliability of the electricity transmission system and wholesale electricity supply and facilitate unimpeded commercial operation of the power system;
- To improve the availability, quality and efficiency of heating in selected buildings

Moldova Energy II Project - Outcomes

- Under the Project Component II “Heating Supply and Efficiency Improved” there was improved the efficiency of heat generation, distribution network and supply equipment, inclusive:
 - Boiler efficiency has increased over 92%;
 - Heat distribution pipes were pre-insulated;
 - There were installed leak detectors;
 - Automatic control of the heating system based on outside temperatures become available;
 - Radiators were endowed with thermostats to adjust the heat supply;
 - All new boiler plants use less pollutant fuel for heat generation (natural gas);
 - More efficient and clean energy production reduced the GHG emissions;
 - The owners of the public buildings included in the project earn money for reducing the GHG emissions by participating in the Carbon Fund market.

Moldova Energy II Project - Outcomes

- The following results were obtained under the “Heating Supply and Efficiency Improved” Project Component:
 - 35 institutions (including schools, hospitals, kindergartens, orphanages) and 37 residential buildings have heat availability during the entire heating season (around 120 days per year);
 - Improved heating has benefited 8,500 students, 1 million patients/staff/visitors and 2,100 families whose apartment buildings were connected to new boiler plants;
 - Additional financing would improve the heating supply for around 18 additional public institutions, including hospitals, educational buildings (schools and kindergartens) and social assistance centers.

Environmental infrastructure

- Project name: *Upgrading of Chisinau Waste Water Treatment Plant – the project proposal has been not approved*
 - Agency: *UNDP*
 - Focal Area: *International Waters*
 - Anticipated starting date: *October 1999*
 - Anticipated closing date: *December 2003*
 - GEF Contribution to Project Financing: *4 M US \$*
 - Additional financing was anticipated from:
 - ERBD
 - Danish EPA
 - EU TACIS
 - Moldavian State Budget
 - Chisinau Municipality, Apa-Canal Chisinau J.S.C.

Upgrading CWWTP Project

Project objectives:

- Rehabilitation the CWWTP into a modern waste water treatment plant with the full biological treatment, including nutrient removal.
- Improve the quality of sanitation services in the municipality of Chisinau.

Project outputs:

- Replacing air diffusers with new fine bubble diffusers, reducing thus the electricity consumption by approximately 50% (*the current consumption is 14,000 MWh/year*), ensuring safety in operation of the plant and guaranteeing a proper functioning of the treatment process.
- Return sludge pumps and establish new sludge dewatering equipment.

Project activities:

- Replacing the existing blowers in order to be able to control the process;
 - Reconstruct the aeration tanks introducing anaerobic, anoxic and aerobic zones;
 - Install mixers in the anaerobic and anoxic zones;
 - Install the recirculation pumps;
 - Install the computer control of the aeration tanks.
-

Upgrading CWWTP Project

Reasons for project fail:

- Following the regional financial crisis of 1998 year, which has impacted particularly hard Republic of Moldova, the Government initiated in 1999 a review of all investment programs and credit lines – the investment programs included in the State Investment Program List has been seriously reduced due to economic recession within the country;
- Low cash generated by the water utility company (Apa-Canal Chisinau J.S.C.), inclusive due to population's insolvency and low level of payments of the bills for the rendered services (water supply and sewage treatment), did not provide enough financial resources to guarantee the return of borrowed money;
- Due to low guarantees for return loans, the ERBD did not fully support the proposed project;
- Due to low co-financing rate, GEF did not support as well the project proposal.

Thank you for attention!

CONTACTS:

Climate Change Office,
Ministry of Environment and Natural Resources,
MD 2005, Chisinau, Republic of Moldova,
#9, Cosmonautilor St., Office 625

E-mail: marius.taranu@mediu.gov.md

and/or tsaranu@yahoo.com,

Telephone /Fax: (+373 22) 23 22 47