

**Presentation 3.3:** The EE21 project

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**Abstract**

Since 1991, the Energy Efficiency 21 Project (EE21) is devoted to achieving sustainable development in the energy sector at a regional level. EE21's main objective is to assist southeastern European, eastern European, and Commonwealth of Independent States (CIS) countries to enhance their energy efficiency, diminish fuel poverty, and meet international environmental treaty obligations under the UNFCCC and the UNECE. EE21 focuses on developing the skills of private and public sector experts at the local level for energy efficiency and renewable energy investments.

Since 2000, investment projects to reduce carbon emissions have been developed under EE21 with local counterparts in Belarus, Bulgaria, Kazakhstan, Russian Federation, and Ukraine. While approximately US\$60 million of proposals have been prepared, investment projects of US\$14.9 million have been financed to date. This amounts to an estimated 136,000 tonnes of carbon dioxide avoided per year that could be compared to eliminating CO<sub>2</sub> emissions of 68,000 cars. A new project on Financing Energy Efficiency Investments for Climate Change Mitigation will provide for the establishment of a public-private partnership dedicated fund to finance energy efficiency and renewable energy investments in UNECE transition economies. This new phase of the EE21 Project is supported by the Global Environmental Facility (GEF), the United Nations Foundation (UNF), the Fonds Français pour l'Environnement Mondial (FFEM) and the European Business Congress (EBC) with an approved amount of US\$ 7.750 million.

This project is to promote the formation of an energy efficiency market in Eastern Europe and the EECCA countries so that cost-effective investments can provide a self-financing method of reducing global greenhouse gas (GHG) emissions.





International Seminar on Energy and the Forest  
Products industry  
Rome, 30-31 October 2006

## "The EE21 Project"

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## Energy Efficiency 21

- Launched in 1991 - 5 three-year phases
- Enhance East-West Trade and Co-operation
- Improve Capacities and Networking
- Policy Reforms
- Financing Energy Efficiency Investments

## Energy Efficiency 21

### Energy Efficiency Investments

- 1999-2005
- US\$ 2 million UN Foundation & Partners
- Belarus, Bulgaria, Kazakhstan, Russian Federation and Ukraine

## Energy Efficiency Investments

- Carbon Emissions Trading Handbook
- Guide to Investors in Energy Efficiency and Climate Change Projects
- Promoting Energy Efficiency Country Reports
- Website 55,000 Visits per year

## Energy Efficiency Investments

- US\$ 60 million in 30 Business Plans
- Potential 530,000 tonnes / year CO<sub>2</sub>
- US\$ 14.9 million financing approved in Belarus, Bulgaria, Russia, Ukraine
- Financed Projects 136,000 tonnes / year CO<sub>2</sub>

### (I) Carbon Emission Reduction of Financed Projects (in tonnes per year)

<b>Belarus</b>	Investment (US Dollars)	CO <sub>2</sub> savings (t/y)	Unit Cost of CO <sub>2</sub> (US Dollars /t/y)
Borovljany Control Systems for district Heating Project	770,000	1,000	770
Vitebsk Grosvet	370,000	2,600	142
Vitebsk Television Factory	2.4 million	24,200	99

## Carbon Emission Reduction of Financed Projects (cont.)

### Belarus

1. **Borovljany Control Systems for District Heating Project** Installation of an automatic control system for the Borovljany demonstration zone boiler house at Lesnoy and end-use heat supply controls for 200 consumers.
  - 770,000 Accepted for implementation by the World Bank Belarus Social Infrastructure Rehabilitation Project.
2. **Vitebsk Grosvet** Reconstruction of street lighting in the city of Vitebsk, including the installation of new fixtures, automation of the street lighting management and modernising lighting of historic sites.
  - 370,000 Accepted for implementation by the World Bank Belarus Social Infrastructure Rehabilitation Project.
3. **Vitebsk Television Factory** Installation of steam turbines, heat pumps and automatic control system for the Vityaz brand factory which produces 200,000 appliances per year.
  - 2.4 million Accepted for implementation by the World Bank Belarus Social Infrastructure Rehabilitation Project.

## (II) Carbon Emission Reduction of Financed Projects (in tonnes per year)

<b>Bulgaria</b>	<b>Investment (US Dollars)</b>	<b>CO2 savings (t/y)</b>	<b>Unit Cost of CO2 (US Dollars /t/y)</b>
Blagoevgrad Street Lighting	400,000	1,300	308
Russe Street Lighting	1.4 million	7,000	200
Gasification and energy retrofit of Municipal sites in the city of Dobrich	660,000	11,000	60
Heat transfer pipelines reconstruction of Pernik city	3.3 million	34,800	95
Energy efficient street lighting Pernik	790,000	9,800	81
Increasing the energy efficiency of the Sofia Municipality buildings	1.8 million	20,000	90

## Carbon Emission Reduction of Financed Projects (cont.)

### Bulgaria

1. **Blagoevgrad Street Lighting** Energy efficient street lighting for the municipality 400,000 Energy performance contract
2. **Russe Street Lighting** street lighting reconstruction 1.4 million. Project has been implemented  
 of measures for energy efficiency retrofit of the buildings 660,000 The project is financed by leasing company – "Technoterm engineering" from Sofia and is fully implemented.
4. **Heat transfer pipelines reconstruction of Pernik city.** Heat transfer network - Heat production/distribution 3.3 million 75% of the project implemented with a World Bank loan
5. **Energy efficient street lighting Pernik** Street lighting 790,000 The project has been implemented and won the annual award of the Bulgarian Energy Efficiency Network EcoEnergy
6. **Increasing the energy efficiency of the Sofia Municipality buildings** Energy efficiency in buildings 1.8 million Following the Action plan an ESCo company was established and under a DEMOS project 310 municipal buildings were rehabilitated
7. **Nikolskoye Settlement** boiler station conversion from heavy fuel oil to local fuels 840,000 Accepted for financing by the Leningrad Oblast Environmental Fund and St. Petersburg under the Federal Targeted Programme for EE Economy 2002-05. Implementation completed in 08/04.
8. **Vinnitsy Settlement Raizhilkomhhoz Boiler Station.** Conversion from coal to bio-fuel (wood chips) 230,000 Implementation completed 2003. Federal Funds, local budget funds and 10% local private funds
9. **Krakolje Boiler Station** conversion from light oil to bio-fuel (wood chips) 80,000 Implementation completed 2003-2004 Federal, local funds, private funds fuel supply.
10. **Vyritsa Settlement** boiler station conversion from heavy fuel oil to bio-fuel (wood chips) 260,000 Accepted for financing by the Leningrad Oblast Environmental Fund, and the Federal Targeted Programme EE Economy 2002-05. Procurement procedures completed and contracts signed.

## (III) Carbon Emission Reduction of Financed Projects (in tonnes per year)

Russian Federation	Investment (US Dollars)	CO2 savings (t/y)	Unit Cost of CO2 (US Dollars /t/y)
Nikolskoye Settlement	840,000	6,300	133
Vinnitsy Settlement Raizhilkomhhoz Boiler Station	230,000	7,100	32
Krakolje Boiler Station	80,000	2,600	30
Vyritsa Settlement	260,000	2,000	130

## (IV) Carbon Emission Reduction of Financed Projects (in tonnes per year)

<b>Ukraine</b>	<b>Investment (US Dollars)</b>	<b>CO2 savings (t/y)</b>	<b>Unit Cost of CO2 (US Dollars /t/y)</b>
<b>Implementation of energy saving solutions in the exterior lighting systems in the city of Zaporizhzhya</b>	340,000	660	515
<b>Installation of automated temperature controllers in heating systems of Ivano-Frankivsk</b>	280,000	1,400	200
<b>Ivano-Frankivsk Boiler Plant</b>	670,000	3,440	194
<b>Upgrades to the lighting and heat supply system of Mariupol city hospital</b>	140,000	570	245
<b>Energy efficiency improvements of heating systems in schools of Dniprodzerzhynsk left-bank region</b>	190,000	580	327

## Carbon Emission Reduction of Financed Projects (cont.)

### Ukraine

**1. Implementation of energy saving solutions in the exterior lighting systems in the city of Zaporizhzhya**  
Creation of a modern, efficient and energy saving exterior lighting system 340,000 The project is being partly implemented through municipal funding

**2. Installation of automated temperature controllers in heating systems of Ivano-Frankivsk**  
Installation of automated temperature controllers in heating systems 280,000 The project is being partly implemented through municipal funding

**3. Ivano-Frankivsk Boiler Plant** Installation of a modern energy efficient co-generation unit 670,000 Fully financed by the district heating utility and municipality, the new co-generation unit put into operation in September 2004.

**4. Upgrades to the lighting and heat supply system of Mariupol city hospital**  
Reconstruction of temperature control system & replacement of the distribution heat networks at the territory of the hospital 140,000 The project is being partly implemented through municipal funding

**5. Energy efficiency improvements of heating systems in schools of Dniprodzerzhynsk left-bank region**  
Implementing decentralized heat supply and reducing energy consumption in the buildings 190,000 The project is being partly implemented through municipal funding

## New Project

### Financing Energy Efficiency Investments for Climate Change Mitigation

Promote an investment environment for self sustaining energy efficiency and renewable energy projects to be developed and financed to reduce greenhouse gas emissions

## Potential Market

- Vast Potential Market Eastern Europe & CIS
- US\$ 5 to 10 billion Payback > 5 Years
- Euro € 224 billion Payback > 15 Years
- Russian Ministry Estimate Euro € 7.5 billion
- Large Investment Potential – Private Sector
- Private Sector Requires Market

## Finance Requirements

- Financing Energy Efficiency Investments in Eastern Europe is Possible
- Time Consuming Labour Intensive
- Needs to Become Business-as-Usual
- Framework Conditions Beginning to Emerge
- No Dedicated Source of Financing

## Investment Fund

- Public Private Partnership Fund
- Private 65% – Public 35%
- US\$ 250 million – ESCOs & SPVs
- EE21 Investment Project Pipeline
- SwissRe, CDC IXIS, EE Capital, EBRD, CEB
- Fund Manager Separate Legal Entity

## Donor Institutions

- United Nations Foundation  
US\$ 2 million
- Fonds Français pour l'Environnement Mondial  
US\$ 2.5 million
- UNEP - Global Environment Facility  
US\$ 3 million

## Participating Countries

Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Kazakhstan, Former Yugoslav Republic of Macedonia, Russian Federation, Romania, Serbia, Montenegro, Moldova, Ukraine

## Objectives

- Public Private Partnership Fund
- Bankable Project Development Skills
- Institutional & Policy Reforms

## Objective One Outputs

- Public Private Partnership Fund
- Investment Memorandum
  - Investor Seminars
  - Energy Efficiency Investment Fund
  - Fund Manager

## Fund Investors

- Private & Public Banks
- Insurance Companies
- Local Banks in Beneficiary Countries
- Large Industrial Groups
- Dedicated Environmental & Green Funds

## Objective Two Outputs

- Bankable Project Development Skills
- Investment Project Development Standards
  - Network of Energy Efficiency Managers
  - Trained Project Development Experts
  - Investment Project Pipeline

## Objective Three Outputs

### Institutional & Policy Reforms

- Economic, Institutional & Regulatory Reforms
- Energy Efficiency Strategy
- Policy Advisory Services

## Next Steps

- Signature Project Documents
- Preliminary Private Placement Memorandum
- Discussions Lead Investor / Investors
- Project Operations Begin 1<sup>st</sup> Half 2007
- Launch Meeting 1-2 March 2007 Geneva