

UN Economic Commission for Europe

Sustainable Energy Financing Facilities  
– Case Study of Bulgaria

Workshop on Case Studies on overcoming barriers to  
investments in energy efficiency and renewable energy  
projects through policy reforms

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Kiev, November 10.-11., 2009

## General description of the case study

**The aim of the case study is the provision of loan facilities for private sector companies for energy efficiency and small renewable energy projects**

- **The Bulgarian Energy Efficiency and Renewable Energy Credit Line (BEERECL) driven by the “Sustainable Energy Initiative SEI” was developed by the European Bank for Reconstruction and Development (EBRD) in close cooperation with the Bulgarian Government, the case study describes sub-project SEI2**
- **The EBRD provides loan facilities to participating banks, which on-lend to private sector companies for industrial energy efficiency and small renewable energy projects**

### Country

- The case study was implemented in Bulgaria
- No regional focus was applied

### Timeframe

- The BEERECL was launched in 2004
- The EBRD launched the Sustainable Energy Initiative (SEI phase 1) in May 2006, SEI phase 1 lasted until early 2009

### Objective

- The key objective of the case study (SEI2) is to provide local and national financial institutions with necessary economic resources to achieve energy savings within industrial and residential sectors
- It contributes in removing financial barriers regarding the lack of grants from local banks to industrial and residential clients

### Financing Institution

- European Bank for Reconstruction and Development (90% of the costs)
- Kozloduy International Decommissioning Support Fund (10% of the costs)

## Removed barriers in EE and RES

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**The case study contributes in removing financial barriers for energy efficiency and small renewable energy projects and is recommended for Albania and the Republic of Moldova**

Albania

Republic of  
Moldova

- The absence of economic incentives, low energy prices, and lack of equity of project developers constitute significant economic and financial barriers in these countries as in many others from the project region
- The dedicated regulatory framework is still under development (e.g. laws for energy efficiency and renewable energy sources, establishment of a governmental agency) and the policy implementation as well as the development of secondary legislation and the definition of operative procedures may still take some time
- Given the current economical situation in these countries, financial barriers in those countries can only be overcome by monetary assistance and foreign investments
- Holding out the prospect of a credit loan by an international institution like the World Bank or the European Bank for Reconstruction and Development (EBRD) may successfully stimulate those governments into accelerating the development of a transparent and financially stimulating legal and regulatory framework related to energy efficiency and renewable energy
- The establishment of loan facilities to local banks for on-lending to clients, in connection with professional expertise and services by external consultants as described here can help resolving economical and financial barriers and boost the awareness regarding energy efficiency measures and renewable energy projects

## Background to the case study

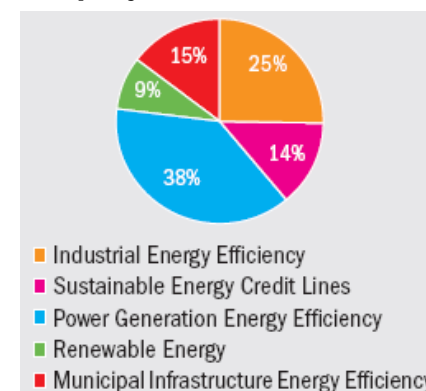
### The SEI is focused on energy efficiency in the industrial, power and municipal infrastructure sectors, developing renewable energy supplies, and supporting the development of the carbon credit market

- The EBRD countries of operation<sup>1)</sup> use up to seven times more energy to produce each unit of gross domestic product than Western Europe and produce disproportionately high levels of greenhouse gases
- In this context the EBRD launched the Sustainable Energy Initiative, the SEI is structured into the following activities:

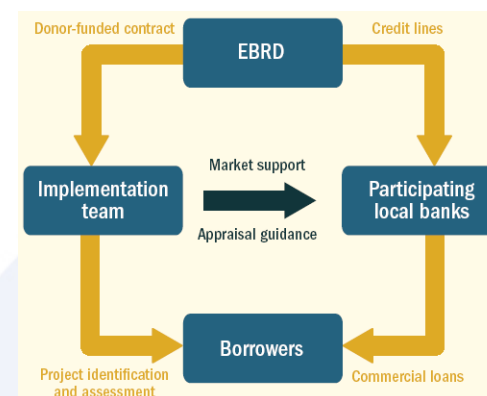
SEI1	Industrial energy efficiency
SEI2	Sustainable energy financing facilities
SEI3	Power sector energy efficiency
SEI4	Renewable energy
SEI5	Municipal infrastructure energy efficiency
SEI6	Carbon market development

- The SEI is focused on enhancing energy efficiency in the industrial, power and municipal infrastructure sectors, developing renewable energy supplies and supporting the development of the carbon credit market in EBRD's countries of operation
- In the first phase of the SEI the EBRD aimed to:
  - Scale up its sustainable energy investments to EUR 1.5 bln between 2006 and 2008, more than double the level of the previous period
  - Establish a broad partnership with donors to mobilize grant funds required to scale up public and private sector financing
  - Build policy dialogue to support the scaling up of investments and bring energy efficiency objectives into the mainstream of the Bank's activities with enhanced specialized support from a dedicated energy efficiency and climate change team
  - Work with other multilateral development banks and institutions to enhance the impact of its policy dialogue and share best practice

**SEI Phase 1 results**  
(total project value: 14 bln EUR)



### Concept of funding from EBRD to local borrowers



1) 30 countries in the Caucasus, Central Asia, Eastern Europe, Russia, Ukraine, Western Balkans

2) The Group of Eight (G8) is a forum for the governments of the eight richest countries in the world

4 UNECE Regional Analysis of Policy Reforms to promote Energy Efficiency and Renewable Energy Investments / Kiev, 10.-11.11.2009

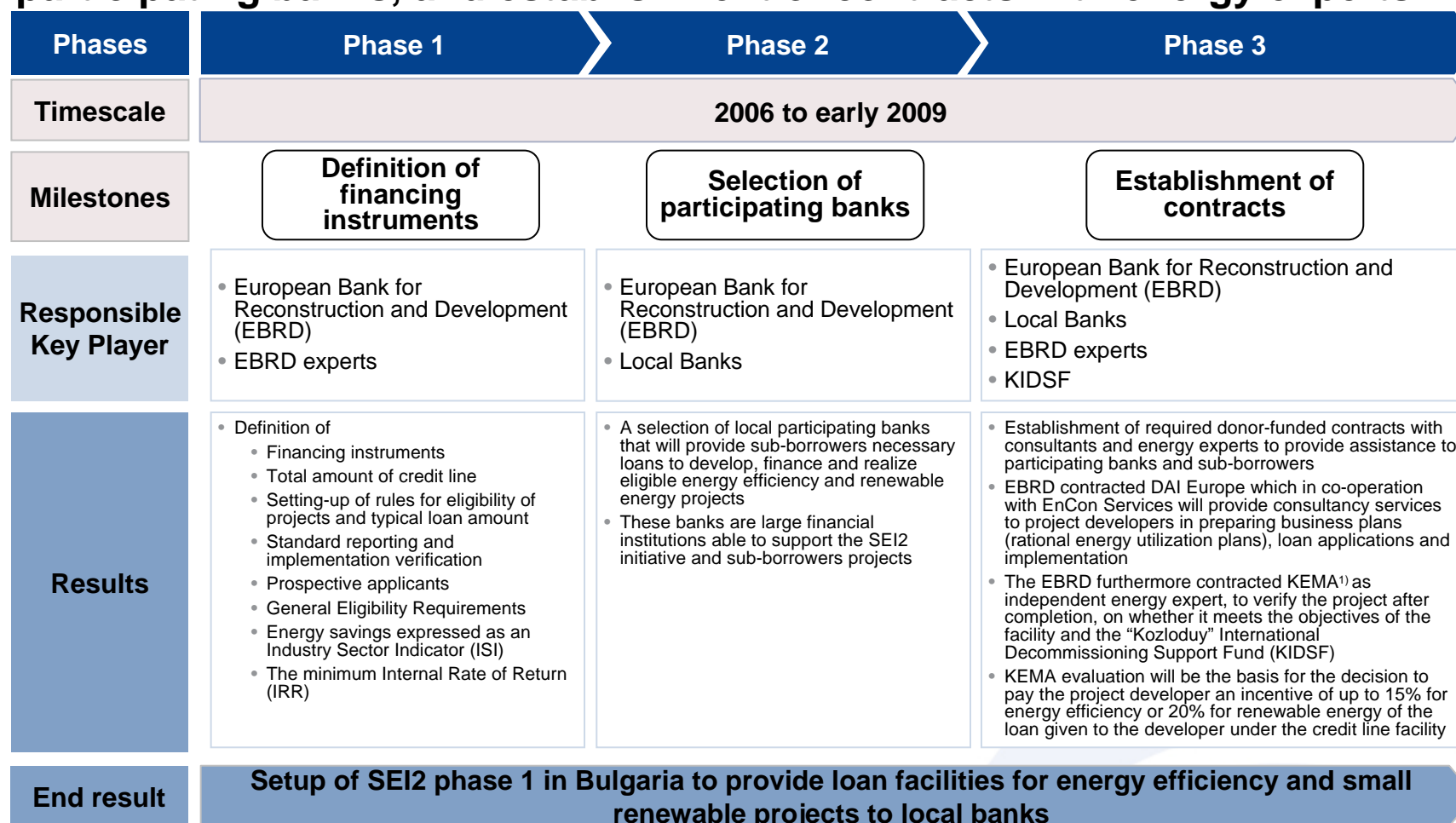
## Key players involved in the implementation of the case study

**The implementation involved the EBRD, 16 experts from the EBRD, local banks, and the Kozloduy International Decommissioning Support Fund**

Key Player	Description	Role
<b>EBRD</b>	The European Bank for Reconstruction and Development (EBRD)	As the main provider of financial resources and the initiator of SEI2
<b>Experts</b>	16 professional experts (also from the EBRD) in energy efficiency and climate change	Work closely with local institutions to identify energy efficiency and renewable energy projects: 13 are located in EBRD Headquarters and three in Kiev, Moscow and Tbilisi who work closely with country and sector teams. All team members have backgrounds in engineering, finance, carbon credits, environmental economics and policy.
<b>Local Banks</b>	At least six local banks: Eurobank EFG Bulgaria (Postbank) Raiffeisenbank (Bulgaria) MKB Unionbank Piraeus Bank Bulgaria United Bulgarian Bank UniCredit Bulbank	Which ensure that dedicated loans are used in respect with requirements of the EBRD in terms of energy efficiency and renewable projects
<b>KIDSF</b>	The “Kozloduy” International Decommissioning Support Fund (KIDSF)	Undertakes safety and decommissioning activities, and financial contribution, KIDSF also focuses on international support on essential investment projects within the Bulgarian energy sector The KIDSF provides grant support to overcome barriers still faced by sub-borrowers in developing, financing and implementing sustainable energy investments These grants provide a completion fee to sub-borrowers ranging up to 15% - 20% of the BEERECL loan amount, and free technical assistance to sub-borrowers

## Approach for case study implementation

The programme “SEI2 phase 1” was setup as three subsequent phases: Definition of financing instruments and credit line, selection of participating banks, and establishment of contracts with energy experts



1) Established in 1927, KEMA is an independent knowledge leader and a global provider of high-quality services to the energy value chain, specializing in business & technical consultancy, operational support, measurements & inspection, and testing & certification

## Impact of case study implementation

**Under the SEI2 more than 25 energy efficiency and renewable energy project loans have been financed and realized through dedicated credit lines achieving valuable energy savings**

### Economical Impact

- Financial energy saving in the industrial sector (industrial credit line) is more than EUR 40 mln per year
- Energy saving in the residential sector (residential credit line) is EUR 4 mln per year
- Increased market penetration of independent energy efficiency and renewable energy consultants, building companies, and equipment industry in Bulgaria

### Environmental Impact

- Energy saving on the industrial sector (industrial credit line) is nearly 735 GWh per year
- Energy saving on the residential sector (residential credit line) is nearly 73 GWh per year
- Other environmental benefits such as urban renewals, reconstructing plans under quality labels, and old plants decommissioning action plans

### Social impact

- Enhancement of co-operation between donors and international organizations
- Strong assistance of EBRD experts to both participating local banks and sub-borrowers (i.e. technical assistance, audits, purchasing of equipments)
- Enhanced housing quality, due to modernization and implementation of energy efficiency measures

### Overall impact

- Participating banks in Bulgaria were acting both at national and local levels, therefore the implementation had an impact on both levels
- From 2006 to early 2009, more than 25 energy efficiency and renewable energy project loans have been financed and realized through dedicated credit lines achieving valuable energy savings

# Costs of case study implementation

**Costs for implementation of the case study have been shared by EBRD (90%) and KIDSF (10%), the credits granted during the SEI2 are given as 120 + 150 mln EUR**

		Costs		Comments
		<b>Credit Line 1</b> Industrial energy efficiency and renewable energy	<b>Credit Line 2</b> Residential sector	<ul style="list-style-type: none"> <li>The detailed costs for the implementation of the case study are not available, these costs have been shared between the EBRD (90%) and the KIDSF (10%)</li> <li>The credit line granted by the SEI2 project in Bulgaria is divided into                             <ul style="list-style-type: none"> <li><b>Credit Line 1 – 60 mln EUR</b> (Industrial energy efficiency and renewable energy); in total six loans were signed for the full amount of EUR 50 mln</li> <li><b>Credit Line 2 – 60 mln EUR</b> (Residential sector); in total sub-loans utilization as beginning of 2009 was EUR 137 mln, the average sub-loan amount was EUR 0.6 mln</li> <li><b>Credit Line 2 – 150 mln EUR</b> (dedicated loans for participating banks)</li> </ul> </li> </ul>
<b>Phase 1-3</b>		Not available	Not available	
<b>Credit Lines</b>		50 mln EUR from EBRD to local banks for on-lending	50 mln EUR from EBRD to local banks for on-lending	
		8 mln EUR from KIDSF Cash incentives to local banks and subborrowers	9.3 mln EUR from KIDSF incentives to subborrowers and local banks	
		2 mln EUR from KIDSF for technical assistance	0.7 mln EUR from KIDSF for preparation, marketing, and verification	
			150 mln EUR Dedicated loans for participating banks	

## Regulatory preconditions

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**For the successful implementation of the case study a national strategy on energy efficiency and the development of a regulation on renewables are necessary**

**National strategy  
on energy  
efficiency**

- A formulated national strategy focusing on energy efficiency and renewable energy sources including binding national targets

**Regulation on  
renewables**

- Development of dedicated laws and regulations regarding renewable energy sources and energy efficiency

# Critical success factors

**Important success factors are the assistance of internationally experienced experts, the reliability of incentives, and the criteria applied for granting loans**

	<i>Description</i>	<i>Comment</i>
<b>Expert's assistance</b>	<b>Strong assistance of European Bank for Reconstruction and Development (EBRD) experts and sub-contractors collaborating with banks in order to grant loans to sub-borrowers</b>	Expert's assistance to the sub-borrowers is necessary to make sure that project developers (sub-borrowers) are able to meet the requirements
<b>Incentives</b>	<b>Commitment of incentivizing payments paid to participating banks and completion fees paid to sub-borrowers upon successful implementation of eligible energy efficiency and renewable energy projects</b>	Reliability of incentives is necessary for planning of the project investments
<b>Project criteria</b>	<b>Definition of acceptable energy efficiency criteria for the financing of projects, enabling eligibility of investments</b>	The criteria for the promotion of projects, for which loans are requested, have to be rational and within reach of the project developers

**The combination of international expertise, reliability of incentives and clear eligibility criteria for projects are critical factors for the successful development of bankable project proposals**

# Risks

**Main risks to the successful implementation lie within insufficient policy incentives, low degree of market development for EE and RES and inefficient authorization and tendering procedures**

Risk factors	Risks	Possible effects	Comments / Recommendations
Regulatory framework	<ul style="list-style-type: none"> <li>Legal and regulatory framework regarding energy efficiency and renewable energy sources may offer not enough incentives for investments</li> </ul>	<ul style="list-style-type: none"> <li>Projects are not profitable or not profitable enough to justify investments</li> </ul>	<ul style="list-style-type: none"> <li>Revision of the legal and regulatory framework related to the topic when implementing the case study, in cooperation with local policy makers</li> </ul>
Market development	<ul style="list-style-type: none"> <li>Subsidized (non cost-reflective) energy prices and poor cost allocation mechanisms obstruct willingness to invest</li> <li>Low market penetration for high quality energy savings and renewable energy technologies</li> </ul>	<ul style="list-style-type: none"> <li>A lack of awareness of energy saving benefits and behavioral barriers for action</li> <li>Bottleneck situations in procurement processes</li> </ul>	<ul style="list-style-type: none"> <li>Take energy prices into account as well and implement cost based prices or price reforms</li> <li>Add grants for ESCOs, technology developers etc. when implementing the case study</li> </ul>
Authorization and tendering procedures	<ul style="list-style-type: none"> <li>Inefficient and long bureaucratic procedures and complicated public tender regulations</li> <li>Doubtful credit-worthiness of stakeholders and difficulties with decision making</li> </ul>	<ul style="list-style-type: none"> <li>Projects are delayed or administrative procedures take so long that projects are no longer profitable</li> <li>The achievement of the case study's goal may be hampered</li> </ul>	<ul style="list-style-type: none"> <li>Set time limits for the evaluation and handling of each project and add a quality control procedure</li> <li>Add decision-making procedures and clearly assign responsibilities, check the credit-worthiness of each stakeholder in a separate credit check</li> </ul>

## Recommendations for replication

**Concrete recommendations for replication include the setup of preconditions, the definition of the financing instruments and credit lines to be utilized, and the standardized evaluation tools**

	Recommendation
Precondition	1 Develop dedicated laws and regulations regarding renewable energy sources and energy efficiency
	2 Formulate a national strategy on energy efficiency and renewable energy sources including binding targets
	3 Initiate institutional cooperation with an international financing institution
	4 Develop eligibility criteria for projects to be financed
Recommendation for implementation	5 Define financing instruments, credit lines and rules for application for loans
	6 Setup a total amount of credit line and subdivide the total amount according to different areas to support
	7 Carefully select local banks to cooperate with
	8 Establish processes and IT tools to handle the application for loans in a standardized way
	9 Define personnel in each bank to handle the application forms, assign responsibilities for handling each step in the procedures
	10 Establish standard contracts to be used when granting loans (donor-funded contracts)
	11 Find international experts or consultants to provide support to the project developers in preparing business plans, loan applications
	12 Inform project developers who are willing to apply for loans about the new possibilities and requirements
	13 Setup a quality management for both the process of granting loans and the projects for which loans are assigned

## Conclusions

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**The success of the Bulgarian Energy Efficiency and Renewable Energy Credit Line is based on the cooperation between the Bulgarian Government and the EBRD as a financing institution**

- **Launched in 2004 as a joint initiative of the Bulgarian Government, the EBRD and the Kozloduy International Decommissioning Support Fund (KIDSF), the BEERECL facility aims to support investments in small-scale energy efficiency and renewable energy projects**
- **Those projects shall mitigate the closure of the Kozloduy Nuclear Power Plant by either reducing energy demand or by replacing lost capacity with green energy supply**
- **Eligible projects are industrial energy efficiency and small-scale renewable energy investments**
- **The program does not only give financial assistance, but also helps with selecting projects and employing marketing strategies, as well as identifying specific energy efficiency measures and preparing technical studies to support applications**
- **BEERECL will receive an additional EUR 50 mln between 2009 and 2011 to reduce Bulgaria's energy intensity**

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The background of the slide features a close-up, artistic photograph of a green plant stem with a small globe of the Earth resting on it. The lighting is dramatic, highlighting the textures of the plant and the globe. At the bottom of the slide, the word "PÖYRY" is written in a large, bold, light-colored sans-serif font, with a double slash symbol above the 'Y'.

PÖYRY

## Annex: Sources

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### List of sources used for case study elaboration

- **Sustainable Energy Initiative. (European Bank for Reconstruction and Development), March 2009**
- **Sustainable Energy Financing Facilities – EBRD Factsheet. (European Bank for Reconstruction and Development)**
- **Bulgarian Energy Efficiency and Renewable Energy Credit Line, <http://www.beerecl.com/cms/?q=en/about>, retrieved 07.09.2009**
- **Project summary document, <http://www.ebrd.com/projects/psd/psd2003/34607.htm>, retrieved 07.09.2009**
- **Project summary document, <http://www.ebrd.com/projects/psd/psd2006/37068.htm>, retrieved 07.09.2009**