Financing Energy Efficiency: New Opportunities with EBRD

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European Bank for Reconstruction and Development

EBRD: Mission and Operations

The European Bank for Reconstruction and Development:

Type of Investments

Catalyst for Commercial Investment: Every € 1 invested or lent by the EBRD mobilises more than € 3 from other sources

Debt | Equity

- **Debt co-financing**: working with commercial banks to provide appropriate debt package
- **Project finance** loans
- Corporate with specified use of proceeds
- Hard/local currency
- Medium/**long tenors** (>15 years)
- Fix/floating rates
- Carbon financing

Debt | **Equity**

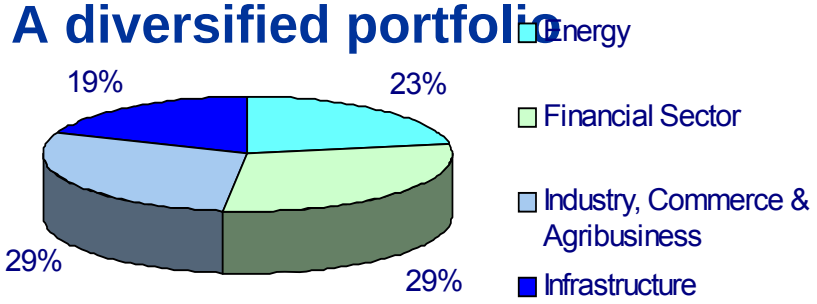
- Investing with majority sponsor to **reduce equity burden** and add partnership value
- Common or preferred stock
- Privatisation and initial public offering
- **Mezzanine equity** and subordinated debt

EBRD - Kazakhstan

Leading IFI in Kazakhstan

- 16 years of operations
- The largest foreign investor outside oil & gas
- Strategic partner to the Government of Kazakhstan

A diversified portfolio



Partnership with the Kazakh Government

- EBRD is the main IFI represented in the Foreign Investor Council (FIC) created by President Nazarbayev
- The EBRD President is Co-Chairman of the FIC

An established track record

- Net Cumulative investment of €2.4 billion
- Current portfolio of €1.4 billion
- 2009 business volume of €440 million

EBRD - Energy Efficiency Group

Energy efficiency team

- bankers, engineers, carbon finance specialists, managers
- Pioneer energy efficiency projects
- free-of-charge energy audits and energy management advice to industrial clients
- Helping companies monetise carbon credits

Kazakhstan Policy Dialogue

- Sustainable Energy Action Plan (SEAP)
- improving framework of energy legislation and regulation
- Focusing on priority investments and financings

Sustainable Energy Initiative

- SEI financing target: € 3 – 5 billion (total project value: of €9 – 15 billion)
- Carbon emissions reduction range: 25 – 35 million tonne CO2/annum
- Technical assistance grant funding: € 100 million; investment grant funding: € 250 million

Four EBRD Energy Efficiency Products

1. Creating an Energy Efficiency Component

- Enhancing conventional bank project size and returns by adding energy efficiency component

2. Dedicated Energy Efficiency Credit Lines

- Financing local banks, backed with grant component, to stimulate corporate and residential energy efficiency

3. Core Energy Efficiency Projects

- Financing energy efficiency service providers (ESCO)

4. Carbon Finance

- Supplementing project cash flow by assisting client in monetisation of emissions reductions

SEI:6 areas of investment

1. Industrial Energy Efficiency

2. Sustainable Energy Financing Facilities

3. Power Sector Energy Efficiency

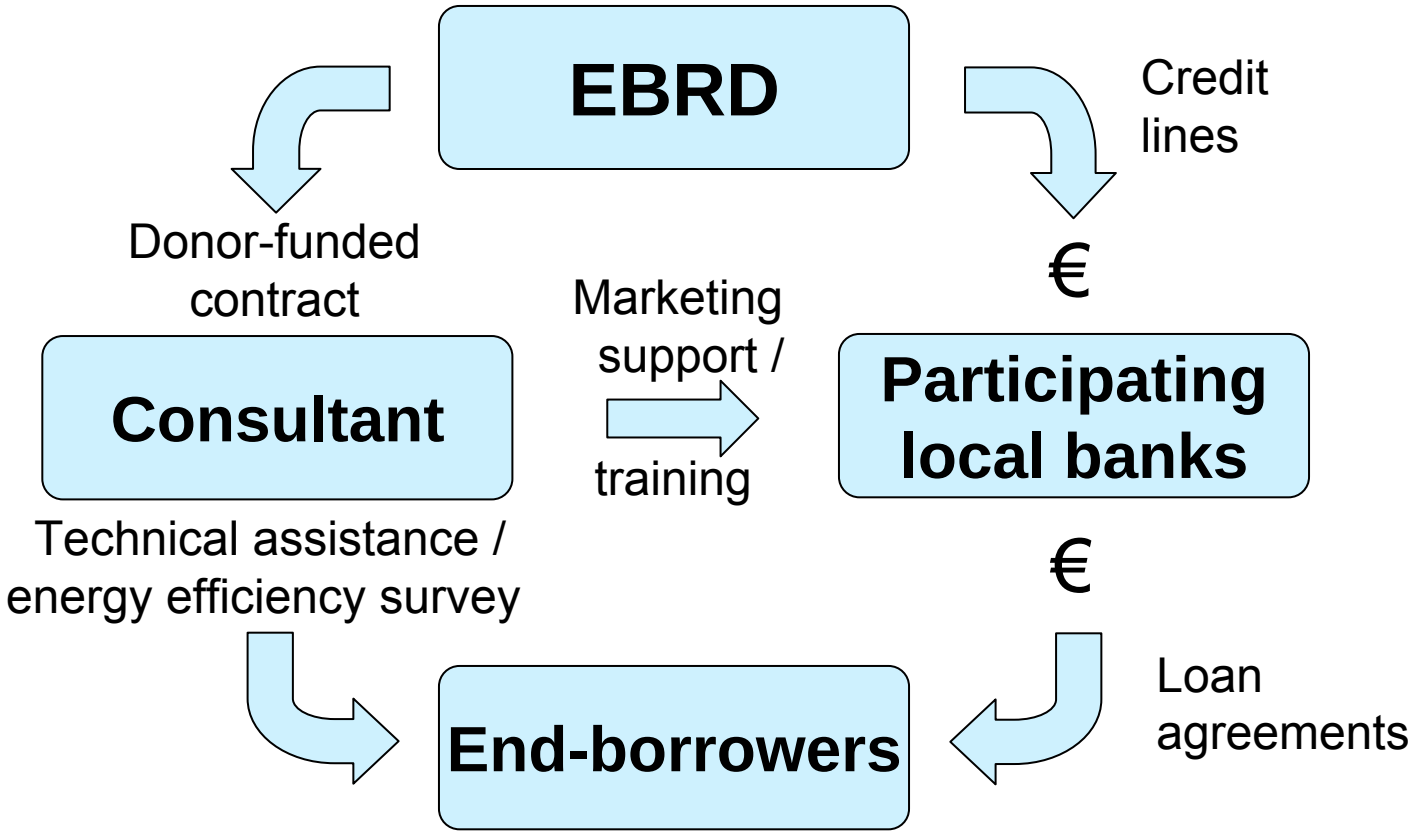
4. Renewable Energy Scale-up

5. Municipal Infrastructure Energy Efficiency

6. Carbon Markets Development

Sustainable Energy Financing Facilities for Small and Mid-size Projects

Energy efficiency credit line facilities



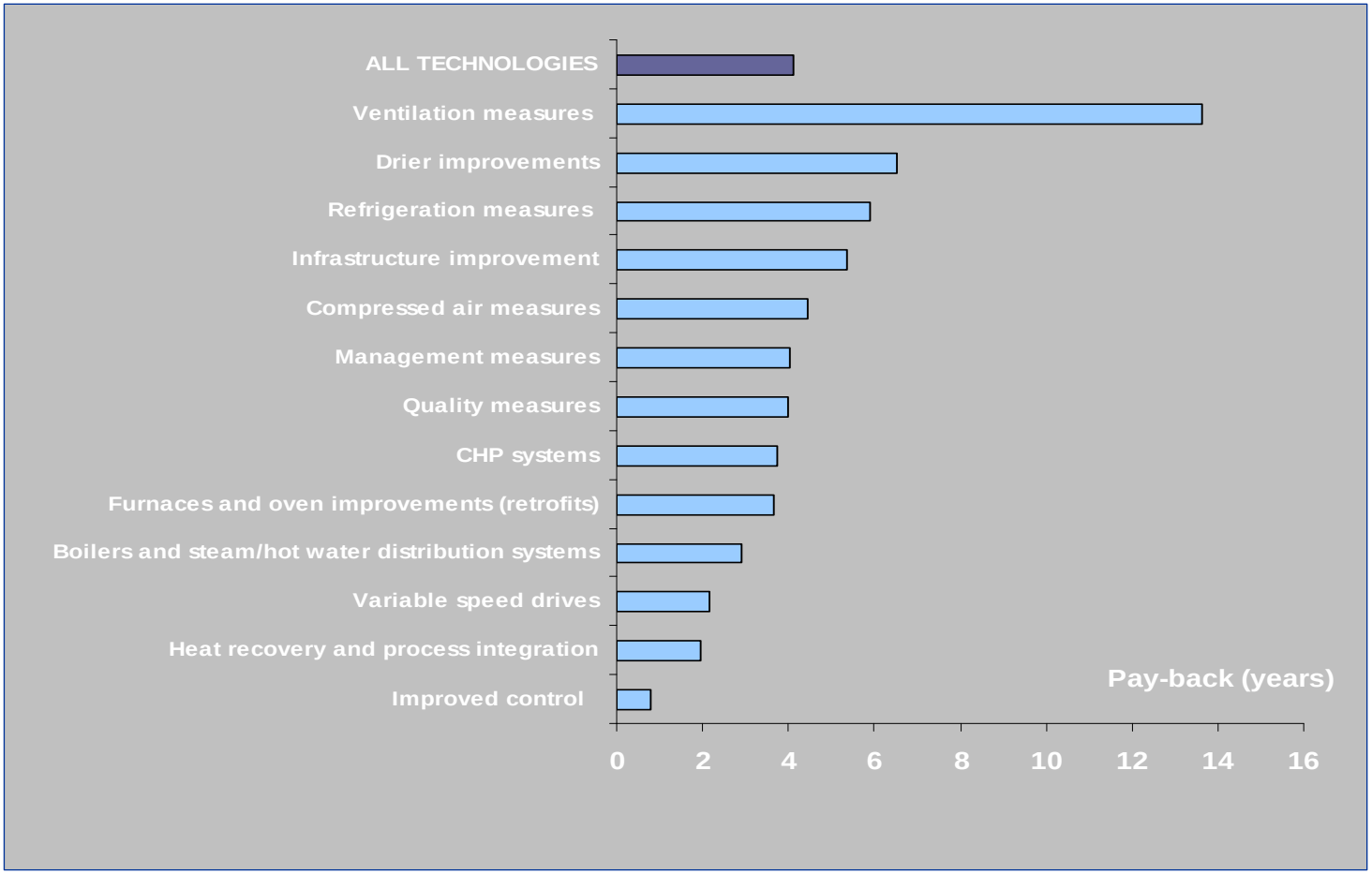
Energy Efficiency for Large Industrial Clients

Industrial Energy Efficiency:

Vast Potential across our Regions of Operation

- High potential across all sectors
- Profitable investments with good payback
  - For Both large industrials and SMEs
  - High NPVs and IRR, short Payback times
  - Payback will increase as energy tariffs rise
- Costs of postponing investments in EE
- Low risk
- Side benefits (e.g., reduced maintenance costs)

Energy Efficiency – short paybacks



Source: EBRD / AEA study, 2007

Role of EBRD technical assistance

- Additional resource and expertise to technical personnel
- Objective estimation of energy saving potential (often times underestimated), development of an integrated strategic approach to EE and priority investment program
- Bridging the gap between technical staff and financial decision makers and helping raise the profile of EE projects with top managers
- Increase the volume and accelerate the pace of investments into EE through long-term external financing

Mid-size Bakery, Russia:

Low-cost measures have short payback

Project Description	Cost ('000 €)	Payback (yrs)	IRR (%)	CO_2 (ton/yr)
Compressor Leakage Reduction	0,3	0,04	2690	87
Energy saving lighting	0,3	0,1	1300	43
Ovens #1 upgrade	8,3	0,8	133	372
Ovens #2 upgrade	6,0	0,8	121	247
Compressors #1 replacement	39,4	1,1	78	350
Energy Management System	21,4	1,3	76	323
Motor management policy	12,9	2,3	42,7	63
Heating network upgrade	1,1	2,4	41	15
Compressors replacement # 2	35,4	3,1	22,6	108
Boiler plant #1 upgrade	74,6	6,4	9	394
Boiler plant #2 upgrade	38,0	6,5	9	196
Total	**237,71**	**2,17**	**--**	**2196**

Energy Efficiency in Power Sector

Technical Assistance to our TPP clients

- Free of charge TA through TC funds
- The overall aim of this advisory services is to assist both the Bank and its clients in the preparation of the most appropriate Rehabilitation or New Unit Programme
- TC consists of 2 components:
  - Component I: Market and Investment Needs study
  - Component II: Technical Audits/Project Review (framework)
- Contracts signed

Technical Assistance to our TPP clients

- Framework Contracts; Technical Audits / Projects Review (Vattenfall, Germany and MWH, Italy)
  - To review and analyse the condition of existing equipment and recent years performance;
  - To review and analyse the necessary investment programme as a whole as well as the main projects it consists of in terms of technical and financial viability;
  - To perform a conceptual technical and financial analysis of the investment projects and expected benefits, including achievable capacity and availability improvements, extension of lifetime, increase of energy efficiency, reduction of carbon emissions and improved environmental performance.

Pavlodar Energo, Kazakhstan

- Pavlodar Energo JSC (power and heat generation)
- US$ 64 million investment
  - Upgrade of the CHP-3
- EBRD finance: US$ 30 million
  - Turbo generator #1 to improve efficiency and help addressing the growing demand in the Pavlodar region.

Renewable Energy

Renewable Project – Victoria Group

- €45 million debt financing to Victoria Oil (edible oil) and Sojaprotein (soy processing) in Serbia

  - €40 million: working capital to support the companies' crushing facilities
  - €5 million: EE investments identified through EE Audit arranged by the Bank and funded by CEI (Italy):
    - €4.5 million: Installation of two biomass boilers to recover soy straw from harvesting and biomass wastes from production processes
    - €0.5 million: other EE projects such as replacement of old and inefficient electric motors and optimisation of condensate recovery

- Anticipated energy savings: 320,000 GJ/year of natural gas (= €1.2 million pa); 190,000 GJ/year of heavy oil (= €0.5 million/yr)
- Anticipated overall pay back period 2-3 years
- Anticipated CO_2 emission reduction: > 30 K ton O_2/A = emissions from households in city of 12,000 in UK

Municipal Infrastructure

Municipal Infrastructure Energy Efficiency

- Sectors:
  - EE projects in DH systems
  - EE projects in Urban Transport systems (including public transport);
  - EE projects in water systems (drinking water supply and waste water treatment);
  - GHG reduction projects in waste water treatment systems;
  - Energy generation projects in waste water treatment systems;
  - GHG reduction projects in solid waste management systems;
  - Energy generation projects in solid waste management systems

Sustainable Energy Financing Facilities in Kazakhstan

Sustainable Energy Financing Facilities

- Clean technology Fund
  - Operational
- Direct Lending Facilities for EE in Public Buildings
  - At the mid-design stage
- Industrial Resource Efficiency Financing Facility
  - At the early design stage
- Direct Lending Facility for Renewables
  - At the concept stage

Thank you!

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