Improving industrial energy efficiency
Thematic factsheet

The EBRD is committed to developing more efficient uses of energy within its countries of operations. As part of its lending to the corporate sector, the Bank works with large industrial energy users (in steel, chemicals and other sectors) to promote best practice and encourage companies to implement energy efficiency investments. Thanks to its dedicated Energy Efficiency and Climate Change team, the EBRD is uniquely positioned to provide both financing and free technical support to help its clients develop and implement energy saving programmes. This is done by screening all existing and potential projects to identify opportunities for energy savings and providing free energy audits and energy management training to unlock savings potential.

Advantages of energy efficiency investments

If energy efficiency investments are assessed and implemented properly, the returns can be high and the technical risks relatively low. Such investments can help reduce energy consumption and may also have other positive implications, such as improved product quality. Benefits can also be gained through environmental improvements and from the demonstration effect on the business community.

More than ever, companies are facing increased competitive pressures to produce high quality products at comparable or lower cost. With rising energy prices, companies are pressured to bring energy costs in line with standards of best practice. This is where the EBRD can assist.

How the EBRD can help realise energy saving potential

There are many opportunities for saving energy at almost any industrial company. However, in most cases those opportunities are overlooked or not implemented. First, companies in the growth phase tend to prioritise revenue-generating investments and pay little attention to rational energy use. Secondly, although most companies are generally characterised by high levels of technical expertise, technical departments often focus on maintenance and operations and lack resources to systematically explore and assess opportunities for energy efficiency investments. Finally, the link between technical expertise, business planning and financial decision-making needs to be enhanced so as to raise the priority and incorporate energy efficiency projects into long-term investment planning.

The EBRD works closely with a client’s technical specialists to help identify energy saving opportunities, select economically viable projects and develop a long-term investment programme for energy efficiency. This programme is then discussed with a company’s management and financial decision-makers to raise the priority of energy efficiency projects and ensure that viable projects are incorporated into the company’s long-term investment plan, financed fully or partially by the EBRD. Finally, the EBRD helps a client develop a culture of energy conservation through staff training, and supports the implementation of energy management systems.

By providing technical assistance and long-term funding the EBRD accelerates the pace of investments into projects that would otherwise be postponed or not implemented, thereby helping its clients to fully unlock the potential for energy saving.

Methodology and process

The EBRD has a specialised Energy Efficiency and Climate Change Team, which includes engineers dealing exclusively with industrial energy efficiency. In addition, the EBRD has access to energy efficiency consultants who can provide free support to the Bank’s clients (these services are financed through EBRD Technical Cooperation funds contributed by international donors). All Bank clients are eligible for this service. The only requirements are that there are potential energy savings and that the client is committed to realising this potential.

Typical areas where savings can be achieved include the upgrade or introduction of:

- measurement and control systems
- process heat recovery
- electrical motors and transformers
- space heating and lighting
- on-site energy generation facilities, particularly those that combine heat and power generation
- energy-intensive process equipment.
Carbon finance

- All energy efficiency projects result in the reduction of greenhouse gas emissions. This results in the generation of carbon credits, which can then be sold to companies and governments to help them meet their own carbon emission reduction targets. The sale of these credits also raises project profitability and makes investment into energy efficiency projects more attractive.

- The EBRD and European Investment Bank (EIB) have established the Multilateral Carbon Credit Fund (MCCF) facility, which is capable of providing the necessary support for carbon project preparation, as well as purchasing carbon credits from energy efficiency projects financed by the EBRD or EIB. For further details see the EBRD web site: www.ebrd.com/carbonfinance.

EBRD industrial energy efficiency results (2003–07)

- Since the introduction of the Industrial Energy Efficiency Programme in 2003, the EBRD has conducted 50 energy audits and arranged 5 energy management trainings for its clients.

- This support led to the development of 61 projects financed by the EBRD, with a total contribution from the Bank of more than €750 million (excluding funds syndicated to commercial banks).

- These projects resulted in energy savings equivalent to the electricity produced by a 2,500MW base-load power plant, and an estimated annual reduction of CO₂ of 5.5 million tonnes. This is equal to the emissions of five base-load, gas-based 400 MW combined cycle gas turbine plants, or roughly the amount of electricity generated in Slovenia each year.

- Clients in Russia include Chelyabinsk Tube Rolling Plant, Severstal, Power Machines Group, Alcoa, and so on.

Severstal, Russia (2007)

- Dedicated €600 million loan for energy efficiency projects, out of which €450 million has been syndicated to commercial banks.

- Eleven projects, including:
  - an Energy Management System
  - a new oxygen plant
  - the modernisation of compressor stations
  - the construction of a new combined cycle gas turbine plant
  - the reconstruction of five steam boilers.

- Electricity savings of more than 10 per cent, and savings in natural gas of 3.5 per cent

- Carbon savings of 1 million tonnes of CO₂ a year.

- Project internal rate of return: 15-90 per cent; payback: 1-6 years.

Chelyabinsk Tube Rolling Plant, Russia (2007)

- €205 million loan to finance new investments in steel making and energy efficiency

- Energy audit identified €50 million energy efficiency investments at two production sites, including:
  - the modernisation of reheat furnaces in rolling mills
  - the modernisation of compressed air systems
  - the installation of combined heat and power units
  - the upgrade of the electricity system
  - new transformers
  - automatic switchgear.

- If implemented, these projects will yield savings of electricity of more than 25 per cent of and natural gas of more than 10 per cent

- Carbon savings of more than 250,000 tonnes of CO₂ a year.

- Project internal rate of return: 23-100 per cent; payback 1-4 years.

Contacts

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