

## ENERGY MANAGEMENT IN TRANSITIONAL ECONOMIES

Transitional economies, such as the Czech Republic and Slovakia, were mostly insulated from the sharp increase in world energy prices during the 1970s. Consequently, many opportunities to lower energy costs by increasing energy efficiency were not realized.

Reforms since 1990 have helped these countries make remarkable progress in establishing market-oriented economies. In these reforms, energy monopolies were restructured and partially privatized, prices of liquid and solid fuels were liberalized, and adjustments were made to the prices of electricity and natural gas.

### Prospects for Industrial Energy Savings

Primary energy demand has decreased in the Czech Republic and Slovakia, but remains more than 1.6 times the EU average in the Czech Republic and more than 2.3 times the EU average in Slovakia (at purchase power parity).

In the Czech Republic, the share of industrial energy use in total consumption declined from 52% (1990) to 44% (2001). Nevertheless, it remains the largest energy sector, due to the importance of the metallurgical, mechanical and chemical sectors. In 2001, the final energy consumption by Czech industries was 460,000 TJ, which still depends heavily on national coal resources.

Although Slovakian industrial energy consumption is also declining, it, too, remains the largest part of the energy sector, due to the concentration of energy intensive industries such as chemicals, iron and steel. Consequently, there remains considerable potential to lower energy use and costs in the country's machinery manufacturing sector, where coal and natural gas are the main sources of energy.

### Energy Policies

Energy policies of both the Czech Republic and Slovakia were dictated by their decision to join the EU in May 2004. Both countries ratified the European Energy Charter, Energy Charter Treaty and Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects.

Other legislation and policies that support energy management include ■ Czech Energy Management Act (2001), ■ Czech and Slovak ratification of the UNFCCC and the Kyoto Protocol, and participation in the EU Emissions Trading, and ■ the EU Directive on Integrated Pollution Prevention and Control, and others.



### Global Environment Facility

Support for the EMPRESS comes from the Global Environment Facility (GEF) that helps developing countries fund projects and programs that protect the global environment. GEF operates in the areas of biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.



### United Nations Environment Programme Division of Technology, Industry and Economics

UNEP is the GEF implementing agency to the EMPRESS. The mission of UNEP DTIE is to help decision makers in government, local authorities, and industry develop and adopt policies and practices that: ■ are cleaner and safer, ■ make efficient use of natural resources, ■ incorporate environmental costs, and ■ reduce pollution and risks for humans and the environment.

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### Basel Agency for Sustainable Energy UNEP Collaborating Center

BASE is collaborating with UNEP on the EMPRESS implementation. In its work, BASE focuses on building partnerships to finance energy efficiency and renewable energy projects.

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## ENERGY MANAGEMENT & PERFORMANCE RELATED ENERGY SAVINGS SCHEME

Superior energy management is good business – helping managers achieve superior financial performance, with savings that go straight to the bottom line. Whether your business is commercial, industrial, or institutional, the EMPRESS can help you to better manage energy use as part of your value chain and increase profits.

The EMPRESS can help your business know its power use, what the major loads are, when electric power demand is greatest, and, importantly, the energy costs, and how they can be reduced. Stop wasting money and start controlling your energy costs today with the help of the EMPRESS.

By increasing your energy efficiency and profits, your business can also help to address serious environmental issues such as climate change, which is attributed to the build up of greenhouse gases in the atmosphere from the burning of fossil fuels.

## PROJECT PREMISE

The EMPRESS promotes industrial energy management in the Czech Republic and Slovakia by coupling a proven industrial energy management tool, Monitoring and Targeting (M&T), with third party financing offered by Energy Service Companies (ESCOs).

Finance offered by ESCOs can help reduce the financial risk of introducing an unknown technique to recipient industrial and commercial clients, and pay for more energy efficient equipment or processes from the energy savings of using that equipment or processes. In turn, M&T can help ESCOs enter the industrial sector, which is often neglected because of higher risks from the variable nature of production processes.

### What is M&T?

M&T is an energy management technique developed to help companies achieve and maintain efficiency improvements through the analysis of metered energy consumption data. It can be applied to energy and non-energy 'consumables' such as water, process gases, waste streams (effluent, solid waste, toxic waste, etc). M&T provides an excellent platform for measuring and subsequently verifying reductions in CO<sub>2</sub> emissions.

### How M&T Works

M&T works by comparing data monitored from regular meter readings to target data that is calculated from productions data and other parameters, such as the influence of weather.

By monitoring data at sufficiently detailed levels using an array of sub-meters, the M&T system can clearly show where performance can be improved. With the appropriate training, operating and engineering staff can identify and rectify problems based on the M&T data.

M&T requires low costs investments in areas of: ■ metering, ■ M&T software, ■ technical support and staff costs, and ■ sensor and control equipment. Typical energy savings are in the range of 5-15%, which usually pays back the cost of investment within one year or less.

### M&T ESCOs

The M&T ESCO supported by the project is a non-exclusive partnership, which differs from the traditional ESCO that works on the basis of installing equipment and then monitoring the savings. The M&T ESCO approach emphasizes management and people issues within client companies, with the installed equipment installed serving only as a means to an end.

## PROJECT OBJECTIVES & ACTIVITIES

The EMPRESS has three objectives:

- creating a market for M&T energy management services;
- achieving end-user energy efficiency improvement and GHG reductions; and
- opening doors to M&T services worldwide.

To achieve these objectives, the project targets both the supply and demand sides of the market.

### On the Demand Side, the EMPRESS

- short-lists the most promising industries according to the criteria of energy scope, economical stability, and ability to adapt M&T;
- holds M&T awareness campaigns among recipient industries, including seminars/workshops/conferences and direct meetings with companies' senior staff;
- assures counseling and reviewing of the M&T programmes implemented by the project's Energy Management Centers and independent energy experts.

### On the Supply Side, the EMPRESS

- establishes qualification criteria for M&T ESCOs;
- selects qualified M&T ESCOs, and assures that partnerships are formed on a non-exclusive basis;
- creates legal blueprints for energy performance contracts adapted to the country's legal frameworks.

### Time Table

- 2Q 2004 short-lists industries with data available in full to the qualified M&T ESCOs;
- 2Q 2004 – 2Q 2005 – conduct the M&T ESCO qualification process;
- 3Q 2004 – 2Q 2005 – initiate one-year M&T programmes at the sites of recipient industrial and commercial clients;
- 3Q 2005 – 2Q 2006 – monitor the implementation of the M&T programmes;
- 2Q 2006 – 3Q 2006 – evaluate the lessons learned and disseminate information at workshops in Central and Eastern European countries.

To learn more about the project background and progress, please visit: <http://www.uneptie.org/energy/projects/EMPRESS/index.htm> [the web site is currently under development] and/or at the web sites of the Energy Management Centers that assures support to the project activities in countries.

## IN-COUNTRY SUPPORT

All activities in countries are carried out with the support of the Energy Management Centers established by the EMPRESS. The Energy Management Centers operate in close partnership with each other, and with the government bodies of the respective countries.

In the Czech Republic, EMC is hosted by the private company Enviros Ltd, and is advised by a council formed by ■ the Ministry of Environment, ■ Czech Energy Agency, ■ Czech Environmental Institute, ■ Ministry of Industry and Trade, ■ Ministry of Finance, ■ Union of Industry and Transport, and ■ State Energy Inspection.

In Slovakia, EMC is hosted by the government agency Slovak Energy Agency, and operates in close partnership with the Slovak Ministry of Environment.

If you are interested in the project activities, please contact one of the respective centers:

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