News at SEVEn

VOLUME 13 NUMBER 2 October 2006

ENERGY EFFICIENCY NEWS FROM THE CZECH REPUBLIC

Why promote "clean coal" technologies?

In the middle of this year, with support from the European Commission's Directorate-General for Industrial Technologies, a project aimed at introducing "clean coal" technologies in Central and Eastern European countries was launched. These new state-of-the-art technologies are capable of using coal as a fuel with much better emission and energy parameters.

In the near future, application of clean coal technologies will allow for further improvement of the energy efficiency of electricity generation in thermal power stations, with concurrent minimisation of the quantity of any pollutants emitted into the air. At the present time, various procedures are being tested in laboratories and pilot installations. These procedures should be able to effectively and cheaply entrap emissions of carbon dioxide (CO_2), the major greenhouse gas originating in combustion processes, for its subsequent storage and material use.

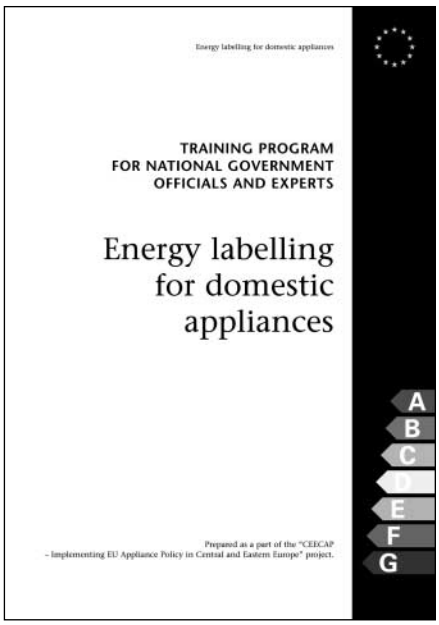
Perhaps the most promising is "oxycombustion", i.e. combustion with the presence of oxygen only. Owing to this technology, the result of the combustion, or "oxidation", process is much lower production of all main pollutants, with the exception of CO_2, whose relative and absolute share in smoke gases will significantly increase, thus making their easier separation from smoke gases possible. The crucial problem with implementation of this technology, however, is supply of cheap "pure" oxygen – the current method of its production (cryogenically) is demanding both in energy and capital terms. Consequently, production of oxygen exclusively for its utilisation in combustion sources is uneconomical.

Already under development, or, more precisely, in the pilot testing stage, are alternative oxygen production procedures, ... cont. on page 5

Contents

Energy-labelling manual for government institutions, manufacturers and retailers

Why are household electrical appliances labelled? What exactly does European legislation require, and how is its observance checked? Why is it appropriate to use energy labels in promotion and sale of electrical appliances? Answers to these and other questions relating to customers' knowledge of energy aspects of operating household electrical appliances are provided in two recently issued publications focused on government institutions and control bodies, as well as manufacturers and retailers of electrical appliances.



Both publications originated within the CEECAP project "Implementing EU Appliance Policy in Central and Eastern Europe". With the support of the European Commission (and the Czech Republic), they are distributed in English or the local language in Poland, Romania, Bulgaria and Lithuania. Their aim is, on the one hand, to provide state bodies with complete information pertaining to creation ... cont. on page. 2

Low-energy apartment house in Železný Brod – consumption balance

At the end of 2004 a low-energy apartment house in the centre of Železný Brod received official approval and was duly handed over to its tenants. After more than a year's operation, data confirming the low-energy nature of the housing and reduced consumption of energy for heating and water warming are available.

The total consumption of energy for the building's heating had been projected at 45.6 kWk/m²/year (requirements for low-energy houses state consumption lower than 50 kWk/m²/year). In the period from April to December 2005, heat consumption amounting to 39.9 kWk/m²/year was measured in individual flats.

Energy savings in the house have been attained by means of applying light wooden insulation panels on the building's thermal envelope and partial use of solar collectors for heating up of water. The house's internal layout is oriented in such a manner that the common staircase space and flat corridors form a barrier against noise from the street and ... cont. on page 5

Lighting – large small-scale consumption

Lighting can make up a quarter of the electric energy consumption of an office building, but also just 2-3% of the total energy consumption of an average household. Does it then concern an energy consumption area possessing an interesting saving potential and is it worth paying attention to it? A recent study published by the International Energy Agency has proved that this is definitely the case.

In 2005 global consumption of electric energy for lighting was 2,650 TWh, i.e. 19% of total electricity consumption, or more than the total electric energy consumption in all the European OECD member states put together. Emissions of pollutants that get into the atmosphere owing to lighting are higher than air transport emissions, or are equivalent to 70% of the emissions resulting from global automobile passenger traffic.

The lion's share in lighting is taken by the services sector, for example, office buildings and shops, consuming more light than the household and industrial sectors together.

However, apart from lighting using electric power, extremely inefficient candles or oil-fired burners are still used for lighting worldwide. Even though they only make up one per cent of lighting, their share in CO2 emissions accounts for a whopping 20 per cent! Annually, more crude oil is consumed for lighting than the entire production in Kuwait…

Consumption of electric energy for lighting has been constantly rising. The International Energy Agency estimates that unless appropriate measures are taken, by 2030 consumption of energy for lighting will be up to 80% higher than it is at present. It has been calculated, however, that when only using the current energy-saving light sources available, it would be possible to cover the growing necessity to illuminate indoor and outdoor spaces in such a manner that in 2030 energy consumption would be no higher than it is today.

The IEA publication entitled "Light's Labour Lost – Policies for Energy – Efficient Lighting" provides a comprehensive summary of possible solutions and measures (of a technical and organisational nature) already available at the present time.

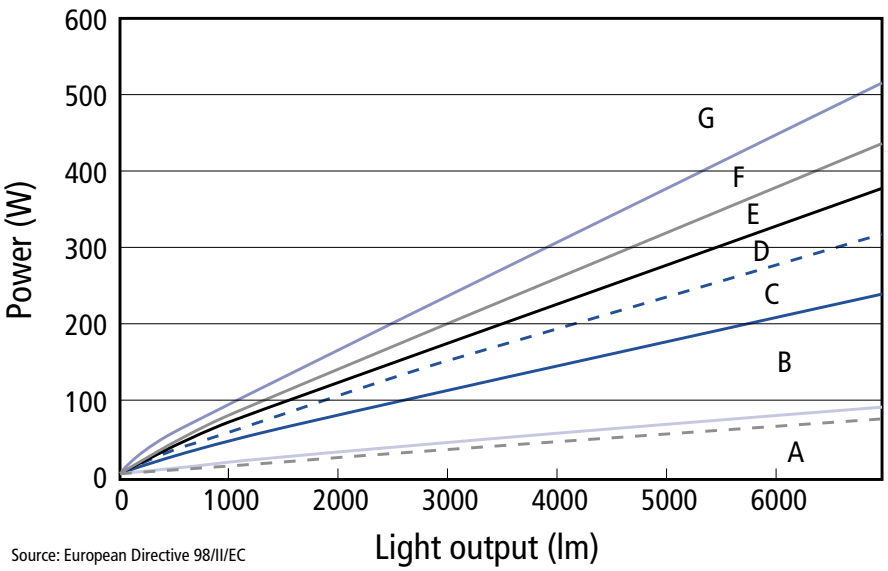
A well-known example is, of course, use of energy-efficient compact fluorescent light bulbs that already today save approximately 230 TWh of electricity a year, or 65 GW of power plant installed capacity.

The publication was prepared on the basis of the requirement for drawing up an action plan and identification of a global plan of possible energy savings raised by representatives of the G8 countries at their meeting in Gleneagles in July 2005.

-jk-

Publication information:
http://www.iea.org/w/bookshop/add.aspx?id=302

Thresholds applied in the EU household lamp label



Source: European Directive 98/II/EC

Energy-labelling...

... *cont. from page 1*

and control of overseeing the energy labelling system, including inspections in shops and tests of appliances. On the other hand, the publications are also intended for manufacturers and retailers of electrical appliances, whom they strive to encourage to fully use labels' information and marketing value for sale of electrical appliances. The publications contain a comprehensive summary of the issues and also give specific examples and instructions. They can be ordered from SEVEn or viewed on the project's website www.ceecap.org

Juraj Krivošík
CEECAP project coordinator
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Commercial financing for energy-saving projects more accessible

Finding suitable finance for implementation of projects aimed at energy saving and use of renewable energy sources still remains a barrier to their implementation for a number of organisations. The novelty of the "Commercial Finance for Sustainable Energy Projects; CF-SEP" project is that it also strives to remove these barriers on the part of the institutions granting financial means on a commercial basis, i.e. banks, and, at the same time, to provide individual designers with assistance in specific preparation of projects.

The aim of the project is to overcome communication barriers between developers and investors on the one hand and financial institutions on the other when it comes to projects resulting in energy savings and making use of renewable energy sources. In the case of these types of projects in particular, it is necessary to enhance the accessibility of commercial financing and banks' interest in them.

Within the framework of CF-SEP, banks will receive information about in what respects these types of projects differ compared to common business transactions and how it is possible to reduce their risks. Investors, on the other hand, will be provided with assistance as regards orientation on the financial market and during preparation of financing so that their request for a bank loan is successful.

An important part of the activities is preparation and presentation of specific projects giving examples that are worth following.

The CF-SEP project commenced at the beginning of 2006. One of its first outputs is a financial manual providing information about possible finance sources which has been drawn up separately for every participating country.

Training of bank employees is already taking place in the case of Česká spořitelna, cooperation with other banks is being prepared.

Selection of specific project examples for commercial financing takes place in linkage to companies' common operation. Owing to the CF-SEP project's support from EU funds, SEVEn is able to offer advantageous conditions of cooperation with interested investors. Hence, it is possible to have drawn up the entry benchmark balance sheet free of charge and an in-depth analysis with a discount as against the current price.

Bohuslav Málek

Information about the possibilities of enrolment in the programme and promotional materials:
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SEVEn has been entrusted with the management of this European project within the Intelligent Energy Europe programme. Other participants are Slovakia and the three Baltic republics (Latvia, Lithuania and Estonia). Also participating in the project is the IFC (International Financial Corporation), an organisation of the World Bank. It has been drawn up with partial support from the European Commission. Responsibility for the contents is exclusively borne by the authors. The opinions expressed need not necessarily comply with the European Commission's attitudes. The European Commission is not responsible for any use of the information gained herein.

SEVEn, The Energy Efficiency Center, o.p.s. would like to invite you to

energy efficiency business week

10th international conference

EEBW: Energy Efficiency Business Week 2006

7. – 8. November 2006, KAISERŠTEJNSKÝ PALÁC

Implementation of EU directives focused on the use of energy and environmental protection

The EEBW 2006 conference is organised under the auspices of:

Ministerstvo průmyslu a obchodu

PRAHA PRAGUE PRAGA PRAG

In the cooperation with:

ČEA

Zdravá města, obce, regiony České republiky

AEM

EUFC

VIESMANN více než teplo

Holland

Key speakers:

Petr Jan Kalaš - Minister of the Enviromnent (tentatively arranged), **Tomáš Hüner** - Deputy of Minister of the Industry and Trade, **Zdeněk Hrubý**, Chairman of Supervisory Board, CEZ, a.s., **František Plecháč**, CEO, State Energy Inspectorate, **Josef Bubeník**, Director, Czech Energy Agency, **František Holec**, Vice-president Chamber of Commerce of the Czech Republic, **Martin Bursík** - Chairman of Green Party Representative of the EU Energy and Transport Commission. Representative of the International Energy Agency.

Key Topics:

Combination of the experience with project implementation and the information on all aspects and trends, which may influence decision-making as well as business in the field of efficient energy use is the main part of the expert discussions at the conference.

Conference seminary structure:

Financing of energy efficient projects, EU programs, structural funds, EPC etc. • Renewable energy sources • Energy utilization of waste • EU emissions trading • End-use energy efficiency and energy services • EU directives on energy performance of buildings • Eco-Design requirements for energy-using products • The international conference includes: business meetings – advisory and information services – social events – professional media coverage and company presentations on the topic

Conference programme and sections:

Energy policy in the Czech Republic and in the European context
EU and Czech energy policy is developing, many new documents are being resolved, policy representatives and creators are changing. State administration representatives, European Commission representatives, energy producers and suppliers and political parties will present their opinions.

Financing energy efficient projects
Possibilities of energy efficient projects support, EUFC project financing experience Detailed overview of current and future available financial sources for energy projects. What grants are available today and in the future from Czech institutions and European programmes? Under what conditions, what are the priorities of these programmes and what is the experience up to now with source allocation? Particular programmes will be presented by their creators and implementation agencies.

Energy use efficiency and energy services
What tools lead to the most effective launching of energy sources in consumption? In this section particular Czech and European experience with energy services, national and international legislation influence and its use, view of state administration and implementation companies will be under discussion.

Future of EU emission trading
What are particular mechanisms for emmission trading? What are the possibilities for utilization of project mechanisms of Kyoto Protocol JI/CDM in the Czech Republic? What are the expected purchasing prices for emission units in the following 6 years and how profitable is for companies to launch such projects? Detailed technical and organisational framework in emission trading in the Czech Republic and internationally, what is creator's and user's view.

Low-energy constructions
Are low-energy constructions only side issue of enthusiasts or is it coming trend for common offer of building companies? What are the legislation requirements on new house building , investment demands and aesthetic possibilities of low-energy constructions? Could investment increase in percent units decrease the energy consumption of buildings in dozens of percents? Renewable source utilization, family houses and dwelling units.

Future alternatives
Does economy growth always imply only the energy consumption and price increase? Is growing fuel import and climate change inevitable future vision? The matter of the section will be particular examples of national and international plans to lower the energy consumption and greenhouse gas emissions, examples of modern and perspective technologies, particular projects and mechanisms which suport them.

Contact
Conference venue: Kaiserštejnský palác, Malostranské náměstí 23/37, 118 00 Praha 1.
Organiser: SEVEn, Středisko pro efektivní využívání energie, o.p.s.

www.eebw.cz

www.svn.cz info@eebw.cz

Media partners:

ENERGETIKA moderní obec tzbinfo www.tzb-info.cz technik Technický týdeník STAVITEL alternativní ENERGIE

Detailed monitoring of electricity consumption in households – possible cooperation

Electricity consumption in Europe's household sector has been constantly growing. Despite ever-improving energy efficiency parameters of common household electrical appliances, in the past decade it has annually increased by an average of 1-2% in EU countries. In the Czech Republic electricity consumption of households rose between 2000 and 2005 by 6%, and as against 1989 even by 53%.

What is the share of particular electrical appliances in electric power consumption in households, and how has the manner of their use been reflected in the level of consumption? And what impact on total consumption have household purchases of new appliances such as computers, large-format TV screens, set-top boxes, dish-washers and tumble driers had?

Good knowledge of the consumption structure in the residential sector should therefore have very important implications for projections of future development of consumption and, accordingly, possible measures that can be taken in advance for active regulation (reduction or even elimination) of further escalation of this sector's take-off burden in future years.

Hence, in 2007 and 2008 specific consumption data will be obtained by means of detailed measurement of particular electrical appliances which will be carried out on a sample of 100 households. The measurement will be subsequently accompanied by a questionnaire conducted among 500 selected respondents. It will take place through the international REMODECE (Residential Monitoring to Decrease Energy Use and Carbon Emissions in Europe) project organised in 12 European countries.

The REMODECE project presumes the coordinated activity of several countries (including the Czech Republic) whose common objective is to gather up-to-date and detailed data on the factors affecting electric energy consumption in households. The project also comprises proposal of policies and programmes that in their final consequence could contribute to reduction of electric energy in households (white certificates, voluntary agreements, subsidy programmes, etc.).

Installed in every participating household will be several compact wattmeters equipped with a memory module, which will record not only the absolute level of consumption over the given period but also its course within a 15-minute period. Lighting will then be monitored by means of photosensitive sensors that will be connected to the most frequently used light sources, complemented by measurement of an independent light circle for monitoring of total consumption of electricity for lighting.

Households will be monitored by wattmeters over the period of one month – the reward will be the drawing up and delivery of the resulting evaluation of their energy intensity, including an identification of individual appliances share in the total consumption and whether they consume more electricity than is the common standard.

At the present time, the creation of a list of households interested in participating in the project is under way. Actual measurement is scheduled to commence in the autumn of 2006.

Our readers will also have the opportunity to join the project. If you are interested, feel free to contact us!

Tomáš Voříšek
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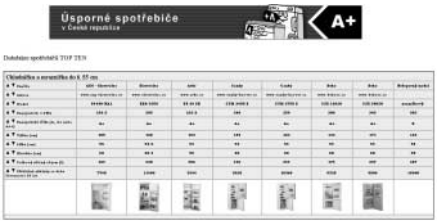
Project information:
http://europa.eu.int/comm/energy/intelligent/projects/doc/factsheets/remodece.pdf

Choose the most energy-efficient appliances on the market

In October 2006, in the Czech Republic and another ten European Union countries operation of an electronic database of the most energy-efficient electrical appliances on the market entitled TopTen will be launched. In Czech, it will be available on the website www.uspornespotrebice.cz.

topten.info

The TopTen project promotes the most energy-efficient appliances on the market according to their operating electricity, possibly water, consumption parameters. Chosen on the basis of the information provided by manufacturers are the most energy-efficient appliances in individual categories, made public in the electronic database so that they can serve as inspiration for end customers' purchases.



In October 2006, the first version of the database, primarily focused on cooling and freezing appliances and their combinations, will be published. It will be gradually extended to include other appliance categories, such as washing machines, tumble driers, dish-washers, electric ovens, etc. The aim of the project is to draw attention in an impartial manner to the best products on the market and thereby contribute to the market's further advance towards more energy-efficient appliances. In the freezer category, for example, the database will exclusively list appliances included in the highest energy class, A++.

Further information:
www.uspornespotrebice.cz, www.topten.info

Intelligent Energy Europe

Would you like green power?

Since 2002 some electric power consumers have had the possibility to choose to be supplied with electricity exclusively derived from renewable energy sources. Západočeská energetika (West Bohemia Energy Utility) was the first in the Czech Republic to introduce this tariff. In the wake of the merger of regional distribution companies into the ČEZ (Czech Energy Utility) Group, the offer of this product has extended to other regions too. Pražská energetika (PRE, Prague Energy Utility) also provides its customers with it own tariff, PREKO, offering electricity from renewable energy sources. What interest in this product has been recorded, and what in particular have energy suppliers promised?

zelená energie

made in PREKO
PODPORA ENERGIE Z OBNOVITELNÝCH ZDROJŮ

The ČEZ Group and PRE offer the possibility to choose the "Green Power" and "PREKO" tariff. They guarantee to supply into the distribution network electric power from renewable energy sources in the same amount as a specific customer has consumed. The tariffs are available to households, business and major consumers, and both companies identically offer them for an extra charge of 10 hellers per kilowatthour as against the current electricity price (which, however, of course automatically includes the price for support of renewable energy sources set by the regulatory office) according to the customer's take-off tariff. At the present time, ČEZ has approximately one thousand customers, while PRE has registered more then 500 consumers.

ČEZ customers making use of this service include, for example, Telefónica 02 Czech Republic. PRE supplies the Ministry of the Environment. In exchange for ordering this product, all customers obtain the right to use this tariff's logo, thus getting the opportunity to display their positive approach to environmental protection.

In addition, both ČEZ and PRE have promised to use the finance gained from renewable energy sales for its further support. In 2005, the PREKO account amounted to CZK 231 thousand, of which PRE has donated the initial CZK 100 thousand. On the basis of a public tender, this money was laid out to support construction of a small photovoltaic power plant with the output of 2.28 kW in Prague 10.

In 2005, the ČEZ Group generated some 1,657 GWh of electric power from renewable sources (including water power plants), and within the Green Power tariff expects sales of 40,000 MWh in 2006. Thanks to a promotional campaign focused on support for this tariff, it represents approximately sevenfold growth of sales as against 2005. In 2005, Pražská energetika bought 57 GWh of electric power from renewable energy sources, i.e. approximately one per cent of the total electricity purchase.

Further information:
ČEZ: www.zelenaenergie.cz
PRE: http://www.pre.cz/domacnosti/produkty_a_ceny/preko.html

Low-energy apartment house in Železný Brod – consumption balance

... cont. from page 1

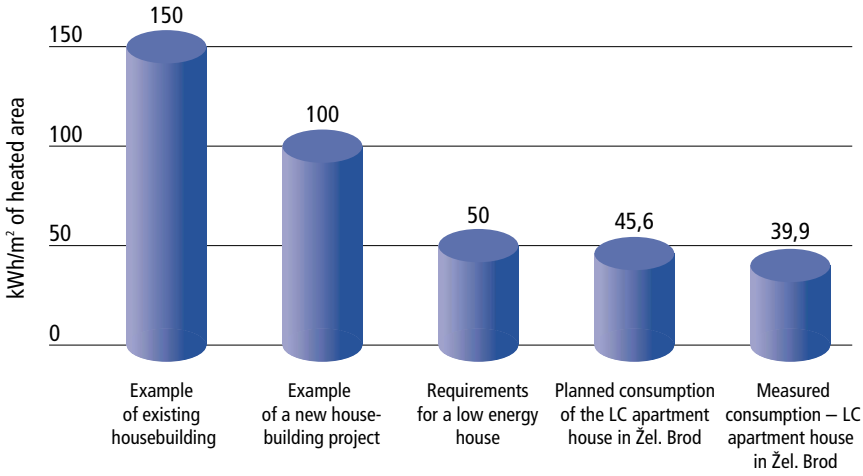
the flats' habitable zone is directed to the west with a view of greenery.

In News at SEVEn 2/2005 we brought you an article dealing with similar energy consumption measurement in a low-energy apartment house in Sušiče, which also confirmed reduced energy consumption in the building. The architectural designs of both houses were drawn up within the "Low-energy low-cost apartment houses in the conditions of the Czech Republic" project initiated and organised by SEVEn under the auspices of the Charles University Environment Centre and with financial support from the funds of the UN Development Programme (UNDP) in the Czech Republic.

-pk-

Further information: pavel.karnik@svn.cz

Specific energy consumption for heating of the apartment house in Železný Brod



Why promote "clean coal" technologies?

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of which the closest to practical application appears to be CAR (Ceramic Auto-thermal Recovery). This new technology is about 50% less investment demanding and during its operation requires approximately 1/4 less energy volume than in the case of the current production method in cryogenic units. Model calculations have confirmed that its implementation in a new model coal-combusting thermal power plant (according to the specific example in Leipzig) would increase the cost of electricity generation by approximately 26%, which is relatively minor with regard to the low price of power generation and in comparison with the prices of energy from other types of power plants.

Other promising technologies are the subject of scientific research in pilot projects too. They include use of coal by means of its integrated gasification in a combined cycle (IGCC), and CO_2 removal from smoke gases by means of their passage through a special reactor containing enzymes.

In the Czech Republic too, one of the biggest greenhouse gas emitters per capita, coal, a relatively cheap and indigenous fuel, will play a significant role. In addition, over the next 20-30 years a large proportion of the current coal-fired power plants in the Czech Republic will have to undergo reconstruction or replacement by new sources. Although none of the mentioned technologies will resolve the problem of this fossil fuel's limited reserves in itself, it will at least allow for making use of its remaining supplies as economically as possible.

Part and parcel of the project is organisation of one or several specialist seminars, as well as publication of detailed material dealing with new technologies and their prospects. The target group will be private and public organisations and institutions closely related to this area of power engineering (source operators, design and scientific/research organisations, state institutions operating in the energy sector).

Tomáš Voříšek

Energy efficiency in transition economies

KEY MESSAGES

- *The energy efficiency potential in Transition Economies remains significant despite intense economic restructuring and energy reforms.*
- *High energy intensity and consumption, combined with energy price increases, impose high burdens on households and businesses.*
- *Governments should make energy efficiency a higher policy priority and allocate adequate resources to energy agencies and action plans.*
- *This effort will pay for itself thanks to the large and multiple benefits of energy efficiency.*

Energy intensity (tonne of oil equivalent per unit of GDP) and unit consumption ratio (toe/t of product) in Transition Economies (TE) are, despite clear progress during the last decade, still much higher than the Western Europe average.This, combined with energy price increases towards energy cost recovery, has imposed a heavy burden on household revenues (15-20% in Central Europe and the Baltics and 25-50% in South East Europe and in the Commonwealth of Independent States).

The economic potential for energy savings in these regions exceeds 20% and 30-50%, respectively.

In district heating alone, savings in natural gas per year through better heat generation could save the amount of gas consumed in Germany. Even more savings are available through improvements in distribution and buildings.

If TE governments wish to reach their objectives of energy performance convergence with Western Europe, they should make energy efficiency a higher policy priority in energy and other state policies (e.g. housing, transport), develop robust multi-sectoral action plans and allocate sufficient resources to energy agencies. This win-win strategy will improve business competitiveness, increase consumers. welfare, create value and local jobs and increase energy security. It will also generate environmental benefits through reduced emissions of greenhouse gases and local air pollutants and reduces the need for investment in energy infrastructure, shifting activities to more sustainable directions.

Source:
International Energy Agency, Findings of IEA Recent work – 2005
http://www.iea.org/journalists/docs/findings.pdf

energy efficiency business week

10th international conference

EEBW: Energy Efficiency Business Week 2006

7. – 8. November 2006, KAISERŠTEJNSKÝ PALÁC

Implementation of EU directives focused on the use of energy and environmental protection

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- Financing of energy efficient projects, EU programs, structural funds, EPC etc.
- Renewable energy sources
- Energy utilization of waste
- EU emissions trading
- End-use energy efficiency and energy services
- EU directives on energy performance of buildings
- Eco-Design requirements for energy-using products

Who should attend:

National and local governments of Central and Eastern European countries • energy consumers • financial institutions • investors • professional associations • energy suppliers • companies providing energy services • producers of energy saving equipment • experts focused on the energy legislation in EU countries • research and academic institutions

All visitors are welcome to take part in the discussions on the implementation of EU directives into the national legislation and their impact. Simultaneous interpreting is provided (CZ, EN).

Under the auspieces The Economic Chamber of the Czech Republic
Czech Energy Agency
Ministry of the Environment
Ministry of Industry and Trade

Organiser: SEVEn, o. p. s., Americka 17,
120 00 Prague 2, Czech Republic
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Conferences, exhibitions and presentations November 2006 – January 2007

5th European Motor Biofuels Forum
11. - 13. 11. 2006
Newcastle, Great Britain
www.europoint-bv.com/biofuels2006

Solarpraxis Forum
16. - 17. 11. 2006
Berlin, Germany
www.solarpraxis.de

Aqua-therm Praha 2006
21. - 25. 11. 2006
Výstaviště Praha
http://www.tzb-info.cz/t.py?t=1&i=22

The European Biofuels Forum
21. – 22. 11. 2006
Warshaw, Poland
www.wraconferences.com

Biofuels Finance and Investment World
28. - 30. 11. 2006
London, Great Britain
www.terrapinn.com/2006/biofuelsuk/

2007 European Renewable Energy Policy Conference
29. - 31. 1. 2007
Brussels, Belgium
www.erec-renewables.org/events

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