

ENERGY EFFICIENCY NEWS FROM THE CZECH REPUBLIC

How will EU structural funds function in the energy sector?

We have entered the year when the Czech Republic will have the possibility to start fully utilising the advantages brought about by EU membership. One of the most crucial will be the chance to receive financial assistance within the economic and social cohesion policy from the structural funds and the Cohesion Fund.

Within the framework of pre-accession negotiations, the European Commission allocated for the Czech Republic for 2004 to 2006 a sum totalling almost CZK 65 billion. However, it concerns a non-claimable support, only drawn through projects fulfilling determined preconditions.

Present status of preparation of programme documents

On December 18, 2003 the European Commission officially adopted the final version of the Community Support Framework, the fundamental programme document for drawing structural assistance for fulfilment of Objective 1 of EU regional and structural policy from structural funds.

On its basis, following its accession the Czech Republic will have the possibility to draw up to EUR 1.45 billion in the first three years of EU membership.

The Community Support Framework defines the strategy, priorities and goals that will be co-fi-

nanced on the part of the European Union. The adopted strategy will be implemented by means of five operation programmes specifying the goals and supported measures for their fulfilment. By signing the Framework, each of them had fixed the level of contribution that the Community is willing to grant for 2004 to 2006 within the given programme.

Before structural assistance begins to be provided, each operation programme will have to be independently re-approved by the European Commission. Hence, the announcement of the first selection rounds for the submission of projects is only expected at the beginning of the second half of this year.

Apart from operation programmes, the Czech Republic will have the possibility to draw another approximately EUR 1.1 billion from the EU budget within the framework of other structural operations. It primarily concerns financial means allocated for Objectives 2 and 3 (EUR 71.3 million and EUR 58.8 million, respectively) of EU regional and structural policy for the cohesion region of Prague (on the basis of Uniform Programme Documents) and co-financing of large projects pertaining to the environment and infrastructure (approximately EUR 945 million). The Czech Republic will also benefit from the Community's INTERREG (EUR

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Energy audit news – Draft amendment to Decree No. 213/2001 Coll., issuing details on energy audit requisites

At the present time, the draft amendment to Decree No. 213/2001 Coll. is in the legislative approval process. This proposal includes certain specifications of energy auditing. Firstly, it should be declared that the draft amendment issues from the fact that energy audit methodology should not in principle be altered. The proposal stems from two years' experience of the Decree in operation and the first energy audits drawn up.

The Decree determines that if an energy audit is carried out at a technological plant for electricity and thermal energy generation, electric power transmission, distribution and interior partition and thermal energy distribution, including interior partition, this plant is rated in compliance with the valid Decree No. 150/2001 Coll. This is not the case in a number of energy audits carried out. In these instances the proposed measures are laid down with the aim to attain at least the values stipulated by the Decree. If technological plants for electricity and thermal energy generation, for electric power and thermal energy transmission, distribution and interior partition meet the requirements for energy-efficient use set in accordance with the Decree, energy audits are not carried out.

If an energy audit of a building's structural part is conducted, it is determined for which structures the attainment of values according to Decree No. 291/2001 Coll., on heat consumption efficiency in buildings, is not technically possible or economically suitable with respect to the pre-

sumed period of the building's use, the building's operation purposes, or it contradicts the legislative requirements, for example, the Act on state care of historical monuments. In these cases, the proposed measures are set with the aim to attain the required values. If the specific consumption of heat for heating of buildings meets the requirements determined pursuant to decrees, an energy audit is not carried out. Owners prove this fact through the building's energy passport.

The results of an energy audit of one building can be used for all buildings in the event that the following preconditions are fulfilled: it concerns buildings of the same structural system, building construction, current condition of structures and comparable floor area, and also buildings with identical supply of thermal energy for heating, identical hot water supply, identical heating systems, identical manner of use and comparable interior distribution. If the preconditions that it concerns technological plants of the same type, production and capacity are complied with, here also the energy audit results can be used for all these cases.

These are the major proposals inherent in the amendment to Decree No. 213/2001 Coll., which also contains several minor modifications and complements.

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Preparation of a new emission trading mechanism

With the aim of meeting the obligations of the Kyoto Protocol in terms of greenhouse gas emission abatement, the European Commission has decided to use the system of emission licence trading. Pursuant to Directive 2003/87/EC, by 2005 this system must be introduced by all EU member states, including the Czech Republic. What does this directive entail, what will be its importance and impact on Czech legislation and the economy?

Trading in emission permits within the European Union will start in 2005, with the first phase lasting until 2007. The second phase, between 2008 and 2012, will directly relate to the fulfilment of Kyoto obligations. For the Czech Government it means preparing for implementation of the system within the shortest time possible. By April 30, 2004 the manner of distributing emission licences among domestic pollution sources should be defined. Besides distribution of emissions, it will also be necessary to create and operate in every EU country an electronic register of emission permits, to introduce rules for monitoring emissions and to put into operation na-

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Preparation of a new emission trading mechanism

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tional legislation implementing this European directive. Responsible for preparing these changes in the Czech Republic is the Climate Change Department of the Ministry of the Environment.

Over the next few months, a functional system for emission monitoring within emission trading meeting the requirements of the European Commission must be prepared. Recently, the EC issued rules to Directive 2003/87/EC on monitoring and reporting on greenhouse gases. Subsequently, companies participating in emission trading will have to introduce actual monitoring in accordance with the rules set, while state administration will prepare for its evaluation.

Every EU member state must also prepare and place into operation a system registering emission licences which will contain a standardised electronic database and an accountable supervision and operation authority. To date, such a system has not existed in the Czech Republic in any suitable form, hence, it will have to be built up from scratch.

Emission trading is being introduced with the aim of the most economical possible achievement of the set objective of reducing greenhouse gas emissions produced in European Union territory. The system promotes emission abatement where this is cheapest, as opposed to uniform adoption

of energy-efficiency standards. For companies that can save emissions cheaply, trading can also be a source of net financial income. However, since the vast majority of small firms have yet to create sufficient capacities for decision-making in this area, the Ministry of the Environment is preparing to organise educational activities focused on these firms to facilitate their joining the trading system.

As assistance for introducing the emission trading system in the Czech Republic, the Government of the Netherlands has provided means for the project's implementation under the guidance of the Dutch branch of PriceWaterhouseCoopers and with the participation of SEVEN. The project will take place over the next few months and its objective is to provide support to state administration in creating and introducing the mentioned monitoring and registration systems and to ensure information dissemination and educational seminars. On the one hand, the project's organisers strive to duly meet the European legislation requirements, on the other, they want to help Czech companies adopt the new system of emission licence trading.

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How will EU structural funds function in the energy sector?

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68.7 million) and EQUAL (EUR 32.1 million) initiatives.

Structural funds in the energy sector

As regards investors preparing projects resulting in increased energy efficiency, energy savings or use of renewable and secondary sources, the possibility to acquire assistance through structural funds will basically be orientated to the existing support resources, i.e. programmes of the State Environmental Funds and the Czech Energy Agency (CEA).

Together with the agency CzechInvest, CEA will become the implementation agency of the Operation Programme Industry and Enterprise (OPPP), namely, in the area delimited by measure No. 2.3 „Energy Intensity Reduction and Use of Renewable Energy Sources“.

To fulfil this activity, the following two programmes will be prepared:

- Programme of Energy Intensity Reduction
- Programme of Renewable and Secondary Energy Source Use.

Support from either of these programmes can only be received by business subjects that:

- fall within the category of small and medium-sized enterprise according to the EU definition;
- do business in the sector of the processing industry and industrial services (in the case of the latter programme, also producers of energy from RES), and
- maintain double-entry accounting.

Ensuing from the above-mentioned preconditions is the fact that excluded from support are producers and distributors of long-distance heat, electricity and gas and other subjects outside the processing industry. Neither will projects that would serve for the public sector (heating of residential houses, schools, health facilities etc) be entitled to assistance. No support is intended for subjects based in Prague, owing to the fact that the city's economic performance exceeds the limit for gaining support, i.e. the region's GDP is higher than 75 % of the EU average.

Acknowledgeable projects costs (for calculation of the determined proportion of public support and the receiver's own resources) can include investment in fixed capital, i.e. purchase of technologies, construction works and related secondary costs, including preparatory works (e.g. for project preparation, drawing up of an energy audit etc), however, only if their term of taxable supplies is prior to the deadline for acceptance of the Application for Support.

Costs that will not be acknowledged will primarily include supplies of goods and services with the term of taxable supplies after the stated deadline, loan repayments, actual taxes and VAT, purchase of land, preparation of construction sites, leasing - advance payments, repayments, sanctions and penalties, costs for guarantees, insurance, interest, bank and administrative charges and the like.

The maximum level of support can be up to 46.6 % of acknowledgeable project costs, a maximum of CZK 30 million per project.

Acceptance and selection of projects will take place in such a manner that regional CzechInvest representations will receive applications from applicants for support, check their formal requisites and completeness. Subsequently, the Czech Energy Agency will check the applications in terms of factual content, process and evaluate the monitored indicators, the selection criteria of the project's acceptability and submit appropriate applications with a recommendation or non-recommendation to the Selection Committee. If the Selection Committee recommends a project's implementation, it will also propose the specific level of subsidy to the Management Authority.

However, the precondition will be that the applicant for support from measure No. 2.3 must not simultaneously apply for and be a final user of the Infrastructure Operation Programme, measure No. 3.3 „Improvement of Air Pollution Control Infrastructure“.

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EEBW 2004 international conference and exhibition

Between November 8 and 11, 2004 the ninth EEBW: Energy Efficiency Business Week international conference and exhibition will take place in the premises of the Prague Congress Centre.

The topics that will at the same time form the main content of the conference sections will include:

- Energy policy in the EU and acceding countries
- Energy and the environment: Project financing, EU programmes, structural funds
- Liberalised energy market
- Emission trading
- Sustainable development and low-energy architecture
- Construction of prefab apartment houses and social housing
- Investment consultancy and energy audits
- Energy services with a guarantee (EPC / EC)
- Renewable energy sources

Within the framework of the accompanying programme, conference visitors will be able to see an exhibition of products and services pertaining to energy saving and renewable energy sources, and have the opportunity to visit some of the most interesting localities using renewable energy sources and low-energy architecture in the Czech Republic.

Further information will be regularly updated on the website www.svn.cz or can be obtained through the email address seven@svn.cz. Those interested in participating in the event as exhibitors, sponsors or lecturers, please contact Petra Neuwirthová:

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VAT on household heating will not increase with EU accession

In relation to the Czech Republic's imminent accession to the European Union, some media outlets have announced that due to conversion to the VAT basic rate the price of long-distance heat supply is set to rise.

It is true that present EU member states cannot apply the reduced VAT rate for supply of heat, unlike in the case of electricity and gas. However, within the framework of the accession treaty, the Czech Republic has agreed a transition period, thus it can apply the reduced VAT rate for heat supply to households until the end of 2007. Hence, the amendatory VAT Act has in no way affected the tariffs for heat supply. Throughout the period of the exemption's validity, the tax rate on heat for households is fully within the Czech Republic's competence. If it is changed, it will not be due to EU accession.

In addition, higher VAT on heat is subject to criticism in EU countries. An amendment to the respective directive, which is under preparation at present, presumes the possibility of its reduction. Thus, it may well happen that prior to the expiration of the Czech Republic's transition period EU regulations will already allow for applying the decreased rate of VAT on heat. So, it will not be necessary to alter the rate even in the future.

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Public lighting in the Czech Republic

In the Czech Republic there are 1.03 million public lighting fittings which in 2000 consumed 619 thousand MWh of electric power. Public lighting is owned by towns and municipalities that do not always manage their property as well as they might. Towns and municipalities frequently only focus on checking non-functional lighting fittings and lack overarching conceptions of management and refurbishment of equipment. The Energy Efficient Lighting Initiative project, funded by IFC/GEF which concluded last autumn, sought to ascertain the level of possible energy savings in individual towns and disseminate information about their implementation.

State of public lighting in the CR

Until recently, the only information available on public lighting dated back to 1989. Since that time, however, development has advanced, towns have undergone enormous changes and energy distribution companies have converted a single-tariff manner of electricity cost calculation to a double-tariff manner, while payment for electric power has been supplemented by a fixed monthly payment according to circuit breakers' current size. This alteration has significantly affected costs for electric power.

Towns and municipalities regularly expend 1 – 3 % of their budget on operation and maintenance of public lighting. In most cases, its defects are removed in the form of one-off extra investment or special work beyond the framework of maintenance.

In 2000 a questionnaire was drawn up allowing for a more detailed overview of public lighting systems in towns and municipalities with populations ranging from 500 to 75 thousand. 155 questionnaires from the total number of 250 towns and municipalities addressed in this size category were processed. They revealed the following average values:

- Power output 152 W/lighting unit
- Minimum output 95 W/ lighting unit
- Maximum output 228 W/ lighting unit
- System's operating hours 4000 hours/year
- Cost per lighting unit CZK 4 – 6/ day
- Minimum cost per lighting unit CZK 2.6 /day
- Maximum cost per lighting unit CZK 12.2/day
- Number 10 inhabitants/ lighting unit

The inquiry also confirmed that towns and municipalities have drawn up neither surveys of the condition of their lighting systems nor of their further conceptual development. Therefore, SEVEN, as the organiser of the ELI project, sought to enlighten municipal authorities' employees, by publishing a public lighting manual and training municipal authorities' representatives. The manual has been distributed to 250 towns with the aim to assist the staff managing this area.

Cooperation with towns took the form of assessing the suitability of public lighting systems' modernisation, comparing the systems' parameters with statistical data, preparing a system's conceptual design and/or drawing up a specific feasibility study for comprehensive public lighting reconstruction and maintenance projects.

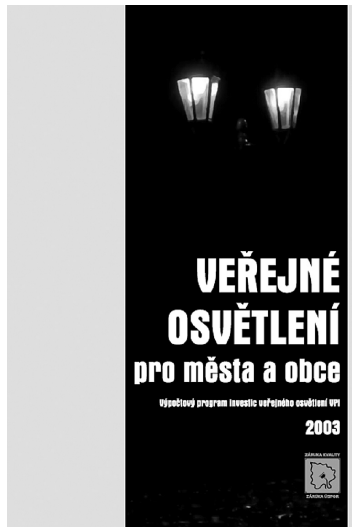
ELI's successfulness was evaluated in the form of another questionnaire by means of which we can estimate the investments directly or indirectly affected by the project. The following table shows the investments of 19 municipalities between 2001 and 2003.

Table: Level of investment, electric energy saving and level of CO₂ emission abatement in 19 municipalities involved in the ELI project.
1Euro = 33 CZK

| Year | 2001 | 2002 | 2003 |
|----------------------------------|-------|-------|-------|
| Total (CZK million) | 23 | 19,4 | 34,1 |
| Electricity saving (MWh/yr) | 1104 | 931 | 1 637 |
| CO ₂ reduction (t/yr) | 1 292 | 1 090 | 1 915 |

Public lighting investment calculation program

One of the major ELI outputs was devising a software aid for evaluation of public lighting system modernisation projects. The basis for calculation is the estimate of energy savings and operating costs, which arises from the technical ground-work data of a public lighting system or can be



converted from the values of a filled-in and verified questionnaire (a preliminary audit or an audit carried out according to the requirements of Act 406/2000 Coll.). The output is data that can be compared with the respective values of towns and municipalities of a similar size. By filling in the basic economic and technical data of a system, a municipal representative ascertains the system's condition and can compare it with the statistical average. Variant 0 calculates average converted annual costs for the lighting system for the period of 20 years. Variant 1 proposes a basic solution in the manner that SEVEN has used during its work on the ELI project, i.e. field research. The result is an investment derived from the necessity of renovating the system's individual installations.

The software program is intended for municipal authority employees who do not have the possibility to check public lighting quality. By means of the program they can approximately estimate energy and operating cost savings with the investment calculated. The program can be used in municipalities with from 500 to 50,000 inhabitants. It is based on the EXCEL table calculator and drawn up in a template form. Users can create several entries and receive the commensurate results. Upon request, SEVEN supplies this program free of charge to representatives of the mentioned group of towns and municipalities, and it is also possible to purchase the Public Lighting Manual for Towns and Municipalities.

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Environmental tax reform – Ministry of the Environment prepares a new strategy

For March 2004 the Ministry of the Environment has drawn up a strategy of environmental tax reform. The objective is to prepare a bill to be passed by the Parliament of the Czech Republic in September 2005.

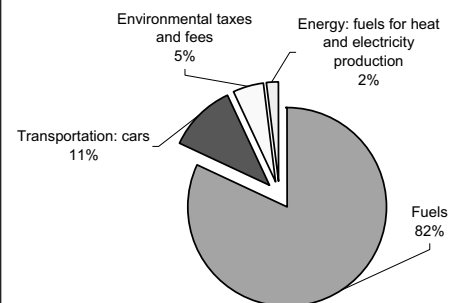
The impulse for implementing environmental tax reform is the fact that, in many specialists' opinions, economic and market tools facilitate reduction of the economy's raw material and energy intensity more effectively than normative prescriptions and legal limits. So-called green taxes do not stipulate how we should behave - merely through raising the prices of certain products with adverse environmental impacts they motivate reduction of their consumption and the development of effective and saving technologies.

On the other hand, the basic principle of environmental tax reform is yield neutrality, meaning that the total tax burden following introduction of the reform will remain the same. Hence, in parallel with increasing taxes on products damaging the environment, income taxes and social security contributions motivating employment growth are lowered.

Although in its statement of policy of August 2002 the Czech Government pledged to implement environmental tax reform, the public finance reform adopted by the Chamber of Deputies of the Parliament of the CR in September 2003 unfortunately did not contain a greater effort towards the greening of public finance.

At the governmental level, an interdepartmental task force has been set up and specific proposals should be processed by the Ministry of the Environment in collaboration with the Ministry of Finance. In March 2004 a draft reform document should be prepared for open discussion, while in April this proposal should be submitted to the Government of the CR. In June 2004 its approval by the Government is planned and by the end of this year the reform should be prepared in the form of a bill that is expected to be introduced before Parliament by September 2005. However, considering the fact that work on environmental tax reform has been part of the government programme since 1998, compliance with this schedule remains uncertain.

Environmental taxes and fuels, Czech republic, 2001



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For more details, visit
www.czp.cuni.cz/ekoreforma.

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District Heating Ownership Dilemma – Public or Private?

Ownership structure of district heating schemes both in Western and Central and Eastern Europe has experienced significant changes during the last decade of the 20th century. Formerly the district heating industry was typically in public ownership - either state owned (typical for Central and East European countries - CEE), or owned by municipalities and/or regional governments (mostly in West European countries). Private ownership of municipal district heating schemes was until recently rather rare.

Recent changes in the energy industry

The relatively stable conditions in the energy and district heating industry have dramatically changed in 1990s. It was not only the collapse of the command-and-control economies and their transition to market economies, but also liberalisation of energy trade, and introduction of competition into traditional monopolistic power and natural gas markets. These changes implemented both in the Western and Central and Eastern Europe, have had significant impacts also on the ownership structure of the industry.

Although these changes are driven mainly by the development of competition on the power and natural gas markets, they do also influence the district heating market. The district heating utilities are often also electricity producers - in case of a combined heat and power production, and electricity and especially natural gas are direct competitors to district heating. Thus, should the district heating be successful on the market, it has to be attractive to consumers both in terms of price and quality of services.

Existing ownership options include:

Public ownership

- State ownership
- Municipal and/or regional ownership (counties)

Public Private Partnership

- Publicly owned assets of district heating leased or contracted to a private operator
- Mixed public - private ownership of district heating schemes:
 - with public majority and control
 - with private majority

Private ownership

- Private ownership of heat generation only
- Private ownership of heat generation including heat distribution networks

Ownership changes

In the Czech Republic, as well as in another CEE countries, the large district heating plants were originally owned by the former state owned power utility or by the industrial companies (independent power and heat producers supplying primarily their own industrial facility as well as other customers).

The major restructuring of the heating industry in the CR started early in 1990s, but no single model of restructuring or privatisation was implemented. The only principle that was applied nation-wide was that the former state control of district heating utilities was transferred to another stakeholders: both municipal and/or private. The state does not control any interests in municipal district heating utilities anymore. (Exception is a national power utility ČEZ, in which the state still has a majority control, and which also sells heat produced in several of their large power plants).

The district heating utilities in Czech Republic are currently owned and operated by large multinationals, local private companies, as well as by local municipalities. In several cases the infrastructure ownership is controlled by the municipality and the operation is contracted to a private entity, or the infrastructure is leased to a private operator, or the municipality remains control of the distribution and heat generation is in private hands.

In general there is a very good experience with restructured district heating utilities. There have been reported few exceptional cases of temporary underperformance of privately owned district heating utilities - especially in early stages of economic transformation. In general, the utility performance, quality of services provided and price of heat depend mostly on site-specific conditions, effectiveness of competition on the local heat market (especially availability of natural gas for space heating and a freedom of customers to choose a supplier) and quality of concrete utility managers, rather than on the ownership structure only.

Perhaps more important than a specific ownership scheme, and especially in countries with economies in transition, are well established framework conditions for effective district heating, such as pricing, effective competition between different energy suppliers, quality of heat regulation if implemented. If an effective competition between different energy suppliers is in place, especially between heat and gas utilities, and the consumers have a real and effective choice of supply, the regulation and price control becomes less important.

Key aspects of public vs. private ownership

The following overview summarises key aspects of public versus private ownership in district heating schemes. The individual factors could either be positive or negative, depending on concrete situation case by case.

Public ownership

- easier access to grant funding (including EU structural funds)
- possibility that business decisions will be politically driven, this might make the performance of district heating less effective, but also it allows to implement to a certain level a rational public policy more easily (e.g. utilisation of renewable energy)
- key business decisions require activity and time consuming decision process of the city council
- in general lower pressure to generate profit and dividends, reduce costs, staff, etc.
- lower interest to integrate with utilities in another municipalities
- lower quality of some services, especially the interruption of heat supply during the night and service breaks during summer period, is still more common with publicly owned utilities in CEE countries, but not in all cases.

Private ownership

- in general higher pressure on return on investment, and on effectiveness and competitiveness of the district heating
- more flexible decision making process and more independent from the direct policy influence
- easier possibility to take advantage of economy of scale when integrating district heating utilities in several municipalities, or integrating with another service providers/utilities.

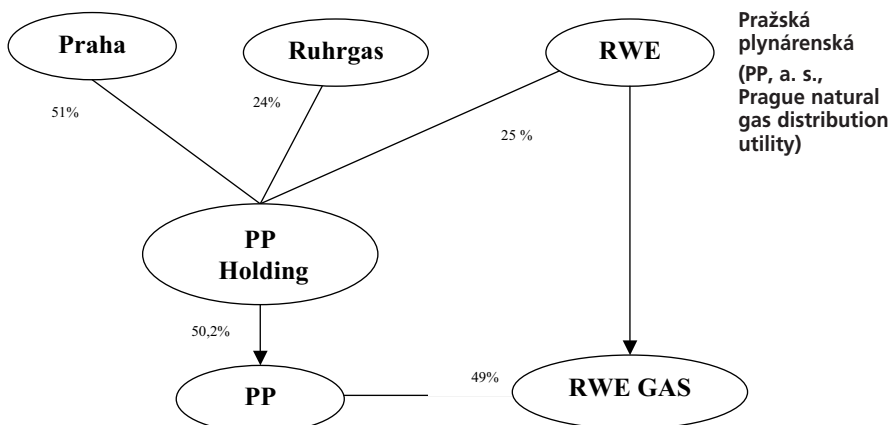
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This article is based on a District Heating Ownership Guide that was prepared by SEVEN, o.p.s. within the DHCAN project - "District Heating & Cooling and CHP: Promotional Materials for Candidate Countries and Pilot Actions in Hungary and Rumania" which received generous support from the European Union's SAVE programme.

Ownership structure of the Prague energy utilities

The City of Prague can serve as an interesting example of an ownership structure of the municipal energy utilities – district heat delivery utility, natural gas and electricity utilities. The City of Prague has originally owned direct shares of these utilities. But then it established holding companies with other private companies. This structure allows the city to have a factual control over the energy utilities, despite other private companies own a larger proportion of shares.



Renewable energy sources – production costs and fulfilment of international obligations

The Czech Republic has set the objective of achieving by 2010 a minimum 8% share of renewables in gross electric power consumption and at least a 6% share of renewable sources in consumption of primary energy sources. Is it possible to fulfil these goals, and at what economic cost?

This question has been raised by the task force of the project entitled „Drawing up the prognosis of renewable energy source use in the Czech Republic until 2050“, elaborated for the Ministry of the Environment. They have arrived at the following conclusions:

Both these goals are technically feasible, their attainment can only be limited by the financial demands of generating energy from renewable sources. If sufficient stimulation mechanisms for potential investors are ensured, both goals can be fulfilled. But the price of renewable sources utilised for heat generation appears to be much closer to market prices than in the case of electricity and they could be competitive already with relatively minor support in comparison with the substantial support necessary for generation of electric power from renewables.

In order to meet the electric power generation goal in line with the latest version of energy policy, it is necessary in 2010 to generate a total of 6,570 GWh from renewable energy sources. According to the project's outputs, average costs for electricity generation from renewable sources with this production scale are CZK 3.23/kWh.

The calculations of the task force have revealed that to achieve the objective it will be necessary to use most of the technologies available at present. Under the presumption that construction of sources will proceed from the cheapest to more expensive sources, potentials of water energy, generation of energy from landfill gas, biogas from wastewater purification plants and agricultural products will be gradually utilised, as will biomass potentials. Wind power will account for more than half the electricity generated from renewables. All areas with the wind velocity exceeding 6 m/s and, partially, some areas below this limit, will be used. These less efficient wind power plants

will probably form the upper costs of the potential used – maximally about CZK 4.50/kWh.

Fulfilment of the objective as regards renewable sources' share in consumption of primary energy sources in 2010 will in total require the generation of almost 106 PJ of energy from renewable sources. Costs for energy production are assessed separately for heat and electricity generation. The average price of thermal energy from renewables is approximately CZK 210/GJ. Technically, this potential can be covered merely by generation of heat from biomass and generation of heat originating during electricity production from biogas at wastewater treatment plants and from landfill gas.

Assessment of the level of costs for individual manners of recovering renewable energy sources is illustrated by means of so-called cost curves. The cost curve expresses the dependence of total costs for attaining generation of final energy (at the source's bottom) on the potential of energy generation from given installations. The calculation of total energy generation costs included investment costs for installation of technology, including connection, non-fuel operating costs and fuel costs.

The cost curve graphically shows the dependence of the amount of energy available from renewable sources on outlaying certain costs (price). Only a relatively small quantity of the cheapest sources is available at a low price. The higher the price, the higher the available potential, since other more expensive sources become available too.

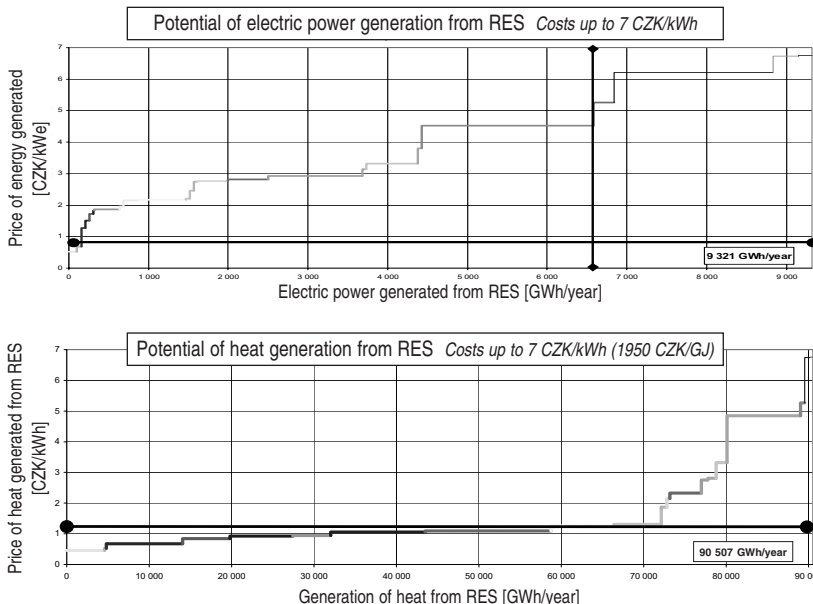
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The article has been written on the basis of the output of the "Drawing up the prognosis of renewable energy source use in the Czech Republic until 2050" project elaborated by a consortium of organisations under the leadership of the Association for Use of Renewable Energy Sources for the Ministry of the Environment. The chapter "Economics of RES – Cost Curves and Assessment of Attaining Goals" has been written by SEVEN, o.p.s. and Enviros, s.r.o.

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Picture: The following two graphs depict cost curves for electric and thermal energy generated from renewable energy sources at costs of up to CZK 7/kWh. The thick flow-line on both graphs illustrates the average electricity production price, or the average heat production price, respectively. The vertical line on the electricity graph marks the 6% national goal for renewable electricity production by 2010. (1 Euro = 33 CZK)



Wind power plants in Jindřichovice pod Smrkem – the first balance

Photo: www.jindrichovice.cz



In the middle of May 2003 two new wind power plants built near the village of Jindřichovice pod Smrkem began supplying electricity to the distribution network. How have they been faring in the first months of operation?

The power plants supplied the first kilowatts to the grid on May 15, while official measuring of supplies started on May 18. By the end of 2003 the two stations had generated a combined total of 633,364 kWh, which with the time capacity of less than 5,500 hours corresponds to use of their nominal power at approximately 10 %.

When the project was launched it was presumed that the power plants would be in operation with the ultimate capacity over the period of up to 1,700 hours a year, i.e. approximately 19% use. With the projection of wind conditions that were in the locality from May to December it would mean operation of turbines at the ultimate capacity over the period of almost 1,000 hours. However, according to an energy audit, both power plants should annually generate 2,200 MWh/year, which would represent annual utilisation of their rated capacity for 1,833 hours a year.

Unfavourable meteorological conditions – an extremely hot summer with slow air movement – were to blame. Nevertheless, according to long-term, verified experience the main air circulation only occurs between early autumn and late spring, so higher average generation can be expected over the whole year.

The technical problems the wind power stations hitherto built in the Czech Republic have faced should not emerge as frequently with the new plants. In technological terms, they rank among state-of-the-art plants, being equipped with a gearless turbo-set with a synchronous generator.

Also of interest is the development of estimates of presumed yields. Materials published state that the expected yields have dropped from the original CZK 6 million a year to half this value, i.e. approximately CZK 3 million a year. However, the stations appear economically viable. Since May 2003 operation of both power plants with the purchase price of CZK 3/kWh brought to the village the sum of CZK 1.9 million. This would mean a sufficient municipal income (about CZK 3 million/year) for loan repayment and overhead and operating costs.

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Graphs and more information:

http://www.jindrichovice.cz/www/basic.php?section=sections&sec_id=22

http://www.jindrichovice.cz/doc/166_1.jpg

http://www.resec.cz/www/basic.php?section=sections&sec_id=74

Conferences, exhibitions, presentations



March – June 2004

Pragoregula / Elexpo / Pragothem / Intergas 2004

International trade fair of measurement, regulation, electrical technology and electronic automation technology, power engineering, heating, energy saving, building equipment, insulation, ecology and the gas industry

17. – 19. 3.

Prague – Výstaviště (Exhibition Grounds), Czech Republic
Contact: Incheba Praha, spol. s r.o.
v.janou@incheba.cz
www.prahothem.cz

Racioenergia

13th international energy efficiency and energy use rationalisation trade fair

30. 3. – 3. 4.

Bratislava - Incheba, Slovakia
Contact: Incheba a.s.
www.incheba.sk

Amper 2004

12th international electrical technology and electronics trade fair

30. 3. – 2. 4.

Prague – PVA Letňany, Czech Republic
Contact: Terinvest, s. r.o.
www.amper.cz

LIGHT + BUILDING

International architecture and housing trade fair

18. – 22. 4.

Frankfurt, Germany
Contact: Messe Frankfurt GmbH, Frankfurt
light+building@messefrankfurt.com
www.light-building.messefrankfurt.com

Enviro 2004

9th exhibition on environmental protection and planning technology

22. – 25. 4.

Nitra, Slovakia
Contact: Agrokomplex – Výstavníctvo
Nitra, Nitra
www.agrokomplex.sk

Heating Days 2004 and Renewable Energy Sources

International specialist exhibition on techniques and technologies for heating and air-conditioning, electric power engineering and renewable energy sources

27. 4. – 29. 4. 2004

Hradec Králové – Aldis Congress Centre, Czech Republic
Contact: Parexpo, Teplárenské sdružení ČR
navratilova@parexpo.cz
www.parexpo.cz/oze

2nd World Conference and Technology Exhibition on Biomass for Energy, Industry and Climate and Protection

10. – 14. 5.

Rome, Italy
Contact: Ms Maddalena Grassi, ETA-Florence
pressooffice@etaflorence.it
www.etaflorence.it

International Conference for Renewable Energies

1. – 4. 6.

International Congress Centre, Bonn, Germany
Contact: Secretariat of the International Conference for Renewable Energies, Eschborn
info@renewables2004.de
www.renewables2004.de

19th European Photovoltaic Solar Energy Conference

7. – 11. 6.

Paris, France
Contact: Christine Flingelli, Communications 19th EUPVSEC, Munich, Germany
christine.flingelli@wip-munich.de
www.photovoltaic-conference.com

EuroSun2004

20. – 23. 6.

Freiburg, Germany
Contact: Beatrix Feuerbach, Communications EuroSun2004, PSE Projektgesellschaft Solare Energiesysteme mbh, Solarhaus Freiburg
www.EuroSun2004.de

EEBW 2004: Energy Efficiency Business Week

9th international conference and exhibition

8. – 11. 11.

Prague Congress Centre, Czech Republic
Contact: SEVEN, seven@svn.cz

Survey of financial resources for energy investment

WWW

Czech Energy Agency

State programme supporting energy savings and use of renewable energy sources for 2004 – Part A

www.ceacr.cz/?page=18

European Bank for Reconstruction and Development

Financing criteria for energy efficiency and renewable energy projects

www.ebrd.com/country/sector/energyef/apply/main.htm

Deutsche Energie-Agentur GmbH (German Energy Agency)

Bankable Energy Efficiency Projects

www.save-beep.org

European Union

Climate change – Emission Trading Scheme

europa.eu.int/comm/environment/climat/emission.htm

Window on the world of structural funds

www.europeum.org/sf

Export Council for Energy Efficiency

Developing and Financing Energy Efficiency Projects and Ventures in Emerging Markets

www.ecee.org/pubs/naseofin.htm

Federal Financing and Assistance Resources for Energy Efficiency Exports

www.ecee.org/pubs/financing.pdf

Global Environment Facility

Funding Options

www.gefweb.org/Operational_Policies/Eligibility_Criteria/Funding_Options/funding_options.html

Municipal Network for Energy Efficiency

Finance Overview

www.munee.org/go.idecs?i=61

State Environmental Fund of the Czech Republic

EU funds, Programme of renovation or reconstruction of facilities using renewable energy sources in flood-affected areas

www.sfzp.cz

United Nations Environment Programme

Financing Sustainable Energy Directory – A listing of lenders and investors

www.fse-directory.net

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