



WE AT SEVEN WISH YOU MUCH SUCCESS AND HAPPINESS IN THE NEW YEAR

8th international conference and exhibition Energy Efficiency Business Week 2002 "Opportunity for Profitable Investment"

Between November 5 and 7, the 8th international conference and exhibition Energy Efficiency Business Week 2002 took place in the Prague Congress Centre. The main topics under discussion were efficient energy use, utilisation of renewable energy sources, and trends in liberalisation of energy sources. The conference and exhibition was organised by SEVEN, The Energy Efficiency Centre.

Presentations and discussions in individual sections focused on energy-saving projects in terms of financially advantageous investment and possibilities of their use in favour of consumers and investors:

Liberalised electricity markets – experience, marketing, green power

Experience from the first year of introducing competition into electricity trading shows that liberalisation has brought benefits for customers in the Czech Republic. During the course of the first year, electricity prices for authorised customers decreased by approximately 5 to 7 %. Possible future long-term benefits for Czech customers resulting from liberalisation will also be affected by the newly created structure of the domestic market, depending on whether there is real and effective competition on the supply side or the state allows for domination of the market by one group.

Both domestic and foreign experience has confirmed that energy from renewable sources has been establishing a position on the liberalised market. Some traders sell electricity from renewable sources to their customers. The volume of this "green electricity" in the case of individual traders in the European Union ranges from several up to 10% of total sales. The first Czech trader guaranteeing generation of green electricity from renewable sources, Západočeská energetika (West Bohemia Energy Utility) now sells this product to several hundreds, of customers.

New opportunities for project financing – greenhouse gas emissions trading

New possibilities of financing projects utilising renewable sources and saving energy through sale of greenhouse gas emissions saved are an increasingly discussed issue. At the present time, the international trade in these emissions is still in its infancy, however, within the next decade it may record annual turnover amounting to several billion USD. At the conference, representatives of individual funds operating in this area were introduced. Today it is already possible to conclude a contract on sale of saved emissions with the World Bank's Prototype Carbon Fund and the Dutch Government, while the Danish Government is currently discussing the creation of a similar scheme. Representatives of the Ministry of the Environment of the CR and the Czech Energy Agency presented information about the latest development of the rules for using these schemes in the Czech Republic. Foreign and domestic speakers agreed upon the necessity of simplifying

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Feed-in-tariffs: too risky to implement

Guaranteed feed-in tariffs, a traditional tool to support generation of electric power from renewable sources, have significantly extended and established themselves on traditional, monopolistic electricity markets. However, the introduction of liberalisation in the energy sector did away with the fundamental principle this support was based on – the electricity supplier's secured sales on a monopoly market. Market liberalisation stands and falls with competition, with the customer's possibility to freely choose (and change) supplier. Compulsory purchase of green electricity cannot be forced upon anyone unless its sale is guaranteed at the same time. To have a non-discriminatory liberalised market, it is necessary to seek new support instruments ensuring that customers buy, consume and pay for the green electricity generated.

The system of feed-in tariffs for green electricity brings an enormous advantage for investors: it removes concerns connected with the sale of generated electricity. Both purchase of the entire production and its price are guaranteed in advance. Hence, entrepreneurial risks of investors in renewable sources are effectively minimised. This also positively affects price calculation.

A problem arises for those purchasing green electricity. To ensure a non-discriminatory system, they must have a guarantee of who they will be selling the purchased electricity to. Electricity distributors merely transport electricity, they do not trade in it themselves. Purchase and sale is the subject of activity of electricity traders – both traditional and new. Distributors can only use the electricity bought to cover their own transmission and distribution losses. This accounts for well un-

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Rules and priorities for Joint Implementation projects in the Czech Republic

From the position of host country, the Czech Republic is preparing for the use of so-called flexible mechanisms, such as Joint Implementation projects. Within their framework, foreign investors will implement (or financially participate in) projects aimed at abatement of greenhouse gas emissions. On the basis of agreement and the level of foreign capital, the resulting abatements will be transferred to the investor's account.

Joint Implementation projects must be assessed comprehensively in both their technical and economic aspects (analysis in terms of the energy industry, environmental benefits, financing, technological gains etc). This assessment will use the capacities of the State Environmental Fund and the Czech Energy Agency, experienced in evaluating projects concerning energy savings and utilisation of renewable energy sources, among the priorities of Joint Implementation.

The official contact place for methodological issues and submitting applications for projects is the Ministry of the Environment (Economic

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Department). Here, projects will be filed among Joint Implementation applications and preliminary projects sent for an expert opinion to the State Environmental Fund and the Czech Energy Agency. A new non-investment programme will be set up for comprehensive assessment of applications at the State Environmental Fund. Both institutions are entitled to require additional data from the applicant. This comprehensive assessment will subsequently be drawn up in the form of the Minister's draft decision that after approval will be submitted to the Minister for decision-making. After the Minister's consent, a contract will be prepared, stipulating further connections and terms under which the saved emission units will be transferred.

Submitted preliminary projects will be primarily assessed according to the following criteria:

- Total and annual greenhouse gas emission abatement.
- The quantity of emission credits required.
- The price offered for an emission abatement

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Feed-in-tariffs: too risky to implement

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der 10 % of total electricity consumption. In a transition period, distributors may also be obliged to supply captured or protected customers, respectively. Unless the amount of green electricity purchased exceeds this difference, the feed-in tariff system, as we know it, can also function well on a liberalised market. Nevertheless, this system is insufficient in outlook. As a result of full market opening all customers will be entitled to select their supplier. Therefore, purchase of green electricity could only be guaranteed for several per cent of total electricity consumption – to cover network losses.

If compulsory purchase of green electricity is to be imposed upon traders, it is necessary to tackle the question of which specific trader will be obliged to buy green electricity from a particular source. On a liberalised market, traders do not have exclusive territorial coverage, as was the case of traditional markets. At the same time, it does not stand to reason that a trader has the duty to purchase a quantity of green electricity larger than he is able to sell to his customers. For practical purposes, this quantity must be smaller than his sale. One of the reasons is the unpredictability of electricity supply from some types of renewable sources - especially from wind power plants. Hence, compulsory purchase of green electricity must always be limited to a certain part (percentage, quota) of total electricity sale.

A liberalised electricity market (and Directive 96/92/EC) secures the possibility of constructing new lines. De facto it means that monopoly in distribution is not guaranteed either. Customers have the possibility not to use a local distribution network system and to connect through their direct line to the producer, or a foreign supplier. The example can be given of a large industrial consumer in Northern Moravia taking off electricity through a direct line from Poland and, under normal conditions, not using the Czech electricity supply network system. Those using direct lines in this manner would be advantaged. Fulfilment of the obligation to purchase a certain percentage of green electricity could in this case be secured by

the purchase of green certificates, securing the production and distribution of green electricity into the grid.

One of the benefits of green electricity is its being generated from decentralised sources usually connected to low- or high-voltage distribution networks. This results in cost savings owing to lower use of transport networks (above all, reduced electricity losses). To prevent discrimination, these savings should reflect in favour of decentralised sources in the form of reduced charges for network use.

To ensure a non-discriminatory system supporting renewable sources, all customers must share equally in covering the higher costs for purchasing green electricity. This condition can be met if the obligation to cover these additional costs is imposed on final consumption, not only by means of increased charges for network use. It may be attained if the obligation of purchasing a certain percentage (quota) of green electricity is transferred from traders directly to final customers. In such a case, each customer, final electricity consumer, would be obliged to buy a certain amount of green electricity fixed as a percentage (quota) of his total consumption. In practice, this obligation would be secured by electricity suppliers, unless the final customer trades himself (for example, at an exchange or by purchasing abroad).

The quota system is non-discriminatory and, at the same time, gives rise to competition between green electricity suppliers. Traders capable of buying cheaper green electricity will have lower costs. To keep this system of compulsory quotas as effective as possible, a system of negotiable green electricity certificates is usually introduced in parallel. This results in separation of the physical green electricity market from the secondary market in certificates. The green electricity producer receives the respective number of certificates. Then he can sell green electricity on the market for the usual market price of "normal" electricity and recover additional costs connected with green electricity generation by selling certificates. Under the threat of sanction, final customers and

their suppliers are obliged to buy a determined amount of certificates commensurate with the quota required for the given time period.

The system of compulsory quotas and negotiable certificates has an in-built advantage: it is a system that, unlike the system of feed-in tariffs, ensures a transparent and non-discriminatory environment on a liberalised market. However, there is a substantial difference for investors in renewable sources: they are also exposed to competition from other green electricity producers. The quota system ensures that the required quantity of green electricity is consumed (and generated) on the market, but does not guarantee that all producers can sell their products. Nor is the price of green electricity administratively set in advance. Of course, this leads to the system's higher effectiveness, a lower burden on customers. On the other hand, it brings with it additional risks for investors. However, these risks can be successfully eliminated by concluding long-term contracts on sale of green electricity or sale of green certificates.

In places where today the system of feed-in tariffs is applied, the situation is extremely unclear for investors. On the one hand, the state provides them with a formal guarantee for green electricity purchase at fixed prices, on the other, there is the threat that this system can be scrapped at any time in the future in order to remove market distortion. Using the system of feed-in tariffs on a liberalised market increases the risk of creating new stranded costs.

Hence, guaranteed feed-in tariffs can be applied, if we want to prevent distortion and discrimination on a liberalised market, only for a very limited quantity of electricity corresponding to the quantity of electricity lost in networks during transmission and distribution. If the goal is to give greater support to generation of green electricity from renewable sources, the system of feed-in tariffs on the liberalised market is unsuitable.

Jiří Zeman

Contact: Jiri.Zeman@svn.cz

Ecological tax reform

The policy statement of the Government of the Czech Republic dated August 2002 declares that "the Government will immediately commence the preparation of a fiscally neutral ecological tax reform". This reform is one of the five priorities of the Ministry of the Environment. What can we expect from this intention?

Ecological tax reform is generally understood as transfer of the tax burden from desirable activities, for example, human labour, to products and activities causing environmental damage. The reform's fiscal neutrality means that the economy's tax burden is not increased, just that a tax structure better reflecting the value of the environment in real prices in the economy is created. At the same time, it is expected that cheaper labour will result in job creation - thus reducing the unemployment queues. In the medium term, raising fuel prices does not necessarily lead to higher energy bills - the induced investment in greater energy efficiency and technological progress enhance the competitive strength of domestic industry.

To date, the Government's statement of policy has not assumed a specific shape in the CR, so it is useful to examine the development in other European countries. In the 1990s, ecological taxes were introduced in 11 EU member states. In the vast majority of cases, the imposition of new taxes was counterbalanced by lower labour or other taxation. Thus, it concerned a tax reform neutral in income terms. Current rates in the EU are displayed in the table below - the second column shows average ra-

tes applied in individual member countries, whereas the third column states the maximum rate found within the framework of the EU (the highest number of maximums can be found in Scandinavia and Great Britain). The table also shows that both average and maximum rates applied in the EU are markedly higher than the present level in the CR.

One of the major arguments voiced against the imposition of ecological taxes is the fear of reduced competitiveness of domestic industry, especially the branches with high energy intensity. It was not only for these reasons that since the early 1990s the European Union has endeavoured to harmonise energy tax rates by stipulating compulsory minimums. To date, the

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Table: Comparison of the present taxation of energy products in the CR with the proposed EU minimum and current rates

Source: ŠČASNÝ, M. (2002), NERI (2002)

	Unit	CR (2002)	EU proposal – min. rates ¹	Lowest EU rate (2002) ²	Average EU rate (2002) ²	Highest EU rate (2002) ²
Motor fuels		Euro ³	Euro	Euro	Euro	Euro
Unleaded petrol	1000 l	358	359	318	520	787
Diesel oil	1000 l	269	287	201	335	504
LPG	1000 kg	94	125	0	192	769
Gas oil and paraffin	1000 l	358	302	245	406	834
Natural gas	GJ	0	2,6	0	2	11
Heating fuels						
Diesel oil	1000 l	0	21	5	117	400
HFO (1 % sulphur)	1000 kg	0	15	6	75	396
Paraffin	1000 l	0	0	0	125	396
LPG	1000 kg	0	0	0	86	468
Natural gas	GJ	0	0,3	0	0	1
Solid fuels (coal)	GJ	0	0,3	0	1	10
Electricity	MWh	0	1	0	23	90

Notes: 1 – latest wording of the draft of May 2002; 2 – data is from 2002 or the latest known, 3 – exchange rate (1. 8. 2002) of 30.32 CZK/EUR

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and accelerating administrative procedures for greenhouse gas emission trading.

EPC and EC – through the eyes of customers at home and abroad

Financing energy projects from energy savings is a topic arousing the interest of many energy consumers, among them schools, health facilities, industrial companies and the like. The section presented experience of projects implemented through the Energy Performance Contracting (EPC) and Energy Contracting (EC) methods in the Czech Republic, both from the viewpoint of ESCOs having practical experience of them and customers who presented their experience with successful projects implemented in their towns and institutions, all of them public premises. Foreign experience of the specific approaches was presented by experts from the USA, Germany and Austria. This all can be applied, with some degree of modification, in the current conditions on the Czech Republic.

The lecturers placed emphasis on distinguishing between the two basic approaches to implementing projects with a guarantee for future results, with the EPC method providing customers a guarantee for long-term energy savings, while projects implemented through the EC method guarantee customers long-term energy and service supply under operating conditions agreed upon in advance, including the price and its adjustment in line with future development.

draft Directive for restructuring the framework for energy products' taxation (COM(97)30 final) of 1997 has been the subject of complicated negotiations. Nevertheless, the Danish presidency is planning to submit a new, compromised wording of this directive by the end of 2002. However, the requirement for unanimous consent of all EU members with the directive's approval has resulted in its containing a large number of exceptions, mainly for energy-intensive industries, while the proposed minimum rates of taxes on energy products are only slightly above the level of the lowest rates applied in the EU countries at the present time.

Pursuant to the Czech Government's statement of policy, not raising the total tax burden will be considered when the draft ecological tax reform for the Czech Republic is formulated. For this purpose, reduction of income tax or social security payments can be used. The level of rates will most likely be subject to a thorough political discussion, with paramount importance being paid to maintaining domestic industry's competitive strength. Approval of a directive on minimum EU rates would entail for the Czech Republic a slight increase in taxes on several types of fuel. Nevertheless, the Czech ecological tax reform could raise the rates much more significantly, especially with fuels intended for heating and, possibly, electricity generation.

Jana Szomolányiová

The author has made use of the article by Milan Ščasný (2002): *Situation in the European Union concerning energy taxation, available on the website Platforms for Ecological Tax Reform: www.czp.cuni.cz/ekoreforma*

Energy efficient lighting – even small projects bring visible benefits

Companies providing energy services for lighting of towns and municipalities already exist in the Czech Republic. They represent one of the types of enterprise whereby electric power and operating cost savings allow for reduction of costs for refurbishment and modernisation of public lighting systems. Highly qualified managers operate public lighting systems in two basic manners – by means of a long-term contract on operation for an agreed price or purchase of the system. In the final analysis, both variants lead to cost reduction and gradual modernisation.

The European Green Light programme, also presented in this section, is a long-term voluntary programme within which private and public organisations pledge to take energy-saving measures for lighting of interiors. The programme was launched in 2000 from the initiative of the European Commission and national energy agencies of 13 EU countries plus Norway. By September 2002 the programme had been joined by a total of 73 partners committing themselves to applying energy-efficient lighting technologies in their facilities.

Energy audits for industry and municipalities, and energy auditors

The Energy Management Act imposes the obligation to draw up energy audits on final consumers. Towns and municipalities, building owners and industrial companies are faced with the task of producing a document revealing the possibilities of energy management of companies and buildings, and proposing rectification and saving measures. As an obligation under the law, energy auditing in Europe has to date been introduced only in Denmark and the Czech Republic; hence, it also became a discussion topic in this conference section.

The speakers demonstrated the significant economic benefits of saving measures in both industry and municipal property. However, proposed saving measures can only be beneficial in the case that the client subsequently has available the investment means necessary for construction. Therefore, the legal obligation of energy audits for residential houses appears to be somewhat of an end in itself, especially if the owners are not able to acquire the necessary investment means within a short time. That is a typical problem for a number of housing associations.

At present, the energy audit market in the CR is extensive – demand exceeds supply. Hence, the issue of an auditor's or an auditing company's independence is delicate. Audits are sometimes offered very cheaply or even for free, the catch being that the application of unsuitable products or expensive service of specific firms is proposed. High-quality auditors present themselves more through good references than the number of audits carried out. After the legal obligation terminates within two or three years, only high-quality auditors and clients motivated to attain real energy and financial savings will remain on the market.



Low-energy low-cost buildings

The principle of low-energy low-cost buildings rests in the fact that their construction costs do not exceed the average level in the Czech Republic, while their consumption of energy for heating is reduced to one half of the average.

The discussion participants in this section stated that the established supply of traditional houses on the Czech market is the major barrier to commercial use of low-energy buildings. There is a certain specific interest in this type of housing, nevertheless, a degree of distrust in innovation and so-called ecological dwelling, unjustly considered uncomfortable, remains.

Biomass? Efficiently!

This year's conference also focused on economic and environmental aspects connected with biomass energy utilisation. One of the main discussion topics was the use of biomass energy in centralised heat supply systems, which is only justified in the case of sufficient balance of the supply (fuel sufficiency) and demand (heat consumers) side. Unless these conditions are met, decentralised solutions are a more effective economic alternative. Thanks to current technological progress and fuel standardisation, they are equally comfortable to heating from central heat supply systems or by gas. However, their wider application is conditioned on the economic advantageousness of fuel (pellets and briquettes) and the creation of a logistics system on site (central fuel storehouse, transport supply etc).

Economic effectiveness is also the goal of other manners of energy recovery from biomass. At present, biogas generation through anaerobic fermentation of agricultural waste and gasification of plant biomass aimed at production of so-called wood gas is undertaken by several Czech companies, while several pilot projects aiming to verify



Foto: Josef Bubeník, director of the Czech Energy Agency, and Jaroslav Maroušek, director of SEVEN, The Energy Efficiency Centre, at the opening ceremony of the Energy Efficiency Business Week 2002.

the economic benefits of these technologies are being prepared. Biomass utilisation has also been extended in cogeneration units, as was documented by a pilot implementation in Austria. Welcome is the fact that the first project of this type is under preparation in the Czech Republic too.

The **Energy Efficiency Business Week 2002** conference was attended by 350 specialists, investors, representatives of public administration, representatives of companies focused on energy savings, energy suppliers and international organisations from the Czech Republic, Western, Central and Eastern Europe and North America.

The **exhibition** part of **Energy Efficiency Business Week 2002** was primarily based on the possibility of receiving consultancy on energy saving in heating of houses and flats, utilisation of renewable energy sources such as solar collectors, heat pumps and biomass heating, use of thermal insulation, presentation of low-energy building projects, as well as sale of specialist literature.

The **Energy Efficiency Business Week** conference and exhibition is organised every other year, the next will be held in 2004. A steady stream of information about the outputs of this year's event and preparations for the next one will be presented on the website www.eebw.cz. The conference proceedings in printed form or on CD-ROM can be ordered from the SEVEN's office.

New views of the EPC method II

The relationship between the EPC method and energy auditing, provision of energy services by specialised companies and their application in the public sector, is one of the main problems encountered when using Energy Performance Contracting.

In connection with energy audits, it is very frequently stated that an audit drawn up in the light of Regulation No. 213/2001 Coll. must always precede any considerations of preparing a project reducing energy consumption. However, all those obliged to have energy audits produced pursuant to Act 406/2000 Coll. also know that they must pay for them. It is difficult to conceive of the possibility that the price for the audit will be repaid to the auditor as a price for implementation of selected measures when applying the EPC method only from subsequently originated savings of energy consumption costs. Nevertheless, it would be reasonable to ascertain whether the EPC method is applicable for a selected project and, if so, to have such a project prepared and implemented, provided that in parallel an energy audit is drawn up in the form defined by law. Obviously, it cannot be set in this manner in all cases, only when it is feasible. At the same time, it stands to reason that to ensure independence a contractor of a project implemented through the EPC has an audit drawn up by an energy auditor chosen by the client.

Provision of energy services is generally in fairly high demand. However, it does not mean offering and providing solutions exclusively using the EPC method. On the contrary, only selected projects can be implemented through the EPC method, projects suitable for its appli-

cation. But finding such projects and preparing them for implementation is a very demanding and time-consuming process. For instance, for a supplier company striving to offer EPC among its other activities, this method usually becomes unfeasible since the common manner of delivery is more popular with customers. This is not the case when implementation of projects through the EPC method is a company's main activity. However, there are just a mere handful of such companies on the Czech market.

A big problem when applying the EPC method in public organisations and institutions is the fact that they usually receive money for investment projects from the state. There have been cases when an EPC project was prepared and the management of such an organisation saw the chance to obtain investment means for this project again from the "state coffers". Of course, they knew that subsequently saved finance would positively reflect in their budget immediately after the installation and not only several years down the line after repaying the initial investment. And their superiors at ministries and other authorities probably do not check whether or not investment in energy-saving equipment can be acquired from elsewhere, for example, using the EPC method.

Vladimír Sochor
Landis & Staefa ESCO (CZ), s.r.o.,
e-mail: SochorV@cz.sibt.com

The introductory article entitled "New views of the EPC method" was published in the October issue of News at SEVEN: www.svn.cz/documents/02_3_news.pdf

Choose your supplier, reduce energy purchase costs

Liberalisation is a trend characterising the contemporary development of the energy industry in almost all economically developed countries. In the Czech Republic the liberalisation process started on January 1, 2002, when approximately 60 of the largest electricity consumers became free to choose their supplier. How have they made use of the new market conditions?

Most distribution companies found themselves having to buy electricity without knowing the possibilities of their consumers since there was a time lag between the supply from the key supplier, the utility ČEZ, and the demand, or contractual negotiations with authorised customers, respectively. Thus, traders from distribution companies had to purchase a "sufficient quantity of electricity" without knowing whether they would manage to keep the existing customers and sell them the already "agreed" amount of electric power. Since it was not entirely clear how and in what manner the short-term market for possible additional purchases and sales would function, uncertainty even increased. This situation resulted in disproportionate price distortion on the supply side. And the final customers not only could but also did benefit from it.

The answer to the question of how big a saving a customer can expect from an unregulated price is given by analysing the shape of the customer's consumption diagram. Simply said, the more atypical the annual consumption diagram, the bigger the savings the company can expect. In free market conditions, distributors and independent traders purchase electricity for the next year in so-called zones, with the cheapest zones being zones of constant consumption throughout the year. Electricity for winter months and working days is much more expen-

sive. Atypical consumption diagrams balance out the overall diagram of the supplier which, thanks to these factors, can buy a much larger amount of energy in the cheaper zone and make its purchase cheaper for each MWh. In the case of a distribution company, every crown saved per MWh can mean a total saving of up to several dozens of millions that can be achieved owing to winning an atypical customer for its portfolio. Hence, it is logical that the company will be only too pleased to share this profit with such a customer and offer the customer a significant discount. This preliminary estimate of cost reduction represents a very important guide, but it is only one part of the entire process of concluding a contract on electric energy supply.

For companies with a low risk of technology breakdowns the energy price is very important, whereas for companies with frequent breakdowns an important role is also played by the supplier's willingness to assume this risk. In the last stage of the contracting process, it is necessary to choose the best bid that will not only secure the lowest price but also minimise the risks connected with it.

Unlike typical diagrams, the discount of companies with atypical take-off can range between 150 and 200 CZK per MWh. Thus, a company's total savings for purchase of electric power can reach as much as 20%, which can mean cost savings of up to CZK 8 million for new authorised customers. In the case of existing authorised customers, discounts can total several dozen million Czech crowns.

Dean Brabec
KPMG Czech Republic, jsc
e-mail: Brabec@kpmg.cz

Compiled from the paper presented at the EEBW 2002 conference. - jk -

Energy Performance Contracting and Energy Efficiency Business Week 2002 conference

This year's Energy Efficiency Business Week 2002, the eighth such event, symbolically completed the first decade of EPC history in the Czech Republic. In 1992, at the first EEBW conference, US specialists presented their experience, opinions and ideas of using the method of repaying energy projects from savings attained. Thus, the basis for applying the EPC method in the Czech Republic was created.

Establishment of the first energy service company (ESCO) operating in the CR, the first contracts signed, the first projects implemented and gradually repaid from savings proved that the EPC method is viable in our conditions too. Other ESCOs entered the Czech market for energy savings and introduced other approaches to solutions, different financing and repayment concepts. Over time, the array of energy services extended from projects offering savings of energy, heat and water consumption and related operating costs to projects dealing with the opposite "end" of the energy cycle, i.e. its generation and distribution, almost exclusively concerning heat. These projects, today termed Energy Contracting, offer modernisation of the production and distribution facilities (boiler plants, distribution lines), with repayment of these projects over the long term through contractually agreed heat supplies at a price for heat fixed in advance.

ESCOs always finance all project costs, hence customers need not invest their own capital. Both methods are also based on instalments of outlaid finance within the course of the long-term contract, while each guarantees something different for customers.

An EPC project is understood as a project in which the ESCO contractually pledges that during the period of the contract's operation the customer will achieve operating and energy savings at the level set by the ESCO prior to the project's commencement. The customer's main responsibility is to keep the manner of operating the project's subject and to maintain operating and energy costs at the "pre-project" level, which is the condition necessary for the project's repayment.

In Energy Contracting, the ESCO guarantees supplies of energy (most frequently heat) to the customer under agreed terms in the quantity and quality agreed upon in advance and at an agreed price. The customer pledges that throughout the duration of contracting it will pay the so-called basic components of the heat price containing all investment instalments regardless of whether heat is consumed or not. Another part of the heat price the customer is obliged to pay, the so-called working component of the heat price, covers the real operating costs outlaid to secure heat supply.

Each of the mentioned methods is suitable for dealing with different intentions and it is up to customers to thoroughly consider what they expect from cooperation with ESCOs and which of the methods on offer will allow for effective implementation of the submitted order. For instance, if the customer wants to modernise a heat source and distribution, to ensure operation of this and the existing facility over the long term, and wants to have a guarantee for both the technical and economic parameters of the proposed solution, it makes sense to use EC services. If the planned project is focused on attaining savings in heat consumption requiring installation of saving equipment in places of final energy consumption (heat supply regulation, lighting refurbishment, window sealing, hot water savings etc), it is suitable to consider EPC projects.

Miroslav Votápek
Contact: Miroslav.Votapek@svn.cz

Municipal waste incinerators

Perhaps the most controversial aspect of municipal waste management is its so-called thermal use through incineration. Direct incineration of one tonne of solid municipal waste can yield more than 1.8 MWh of thermal and up to 0.6 MWh of electric energy, with significant volumetric and mass reduction of waste. This gives rise to the dilemma of whether energy and other benefits outweigh environmental negatives connected with waste incineration, such as emissions and irrevocable loss of organics.

Incinerators are primarily discussed in relation to dioxins and the CR's accession to the EU requiring reduction of municipal waste deposited at landfill sites.

It is estimated that one incinerator annually produces as many dioxins as a community with 200 houses with local heating appliances burning solid fuels. In addition, municipal waste disposal through incineration is one of the ways to facilitate compliance with the limits to be imposed for disposal of the biologically degradable component of waste by 2010.

At the present time, three municipal waste incinerators are in operation in the Czech Republic: in Brno (designed output capacity of 240,000 tonnes of waste a year), Prague-Malešice (310,000 tonnes/year) and Liberec (96,000 tonnes/year), the only facility that thanks to the technology installed allow for electricity and heat co-

generation. However, the capacity of none of the incinerators is fully used. For instance, in 2000 a total of 337,499 tonnes of municipal waste was incinerated, i.e. slightly more than 50 % of their designed capacity. It represented less than 8 % of total domestic municipal waste production.

The main reason for the incinerators' full capacities not being used is undoubtedly price. Whereas common municipal waste can be disposed of at a dump for CZK 350-400 per tonne, in the case of waste disposal in an incinerator at least CZK 1,000 must be forked out. For example, the company Termizo, operating the incinerator in Liberec, offers disposal of mixed municipal waste for 980 CZK/tonne, the Prague incinerator for CZK 2,050.

Nevertheless, the necessity of gradually abating the quantity of biodegradable waste disposed at dumps indicates that in the future waste incineration will become an economically more viable alternative. This is also the aim of the new Act on Wastes, which presumes piecemeal increase in charges for municipal waste disposal at dumps paid to municipalities in whose territory the dump is located from the current CZK 200 to 500 per tonne of waste from 2009 on.

These reasons and the possibility of waste becoming an advantageous alternative heat-generating fuel (approximately 1.5 tonnes of municipal waste can replace 1 tonne of brown coal)

were the impulse for several heating and energy companies to include construction of municipal waste incinerators in their business plans. Incineration facilities are considered for České Budějovice, Pilsen, Ostrava and Opatovice.

The capacity of each incinerator is presumed to be between 100,000 and 150,000 tonnes of waste incinerated annually, with investment costs ranging between CZK 1.3 and 1.6 billion. However, their possible construction is not planned for at least five years.

Whether municipal waste should be incinerated or more support given to recycling, with the introduction of systems of assorted collection and composting of the biodegradable component of waste, is the fundamental question that has to be addressed in national and regional waste management plans, whose drawing up has also been imposed by the new legislation on waste. The National Waste Management Plan of the CR is near completion and by the end of 2002 should be submitted to the Government for approval. Subsequently, work on waste management plans of individual regions should commence. It will probably be these plans that will decide the fate of new incinerators.

For details about the National Waste Management Plan of the CR and preparation of regional waste management plans, visit the website of the Ministry of the Environment (<http://www.env.cz>).

Tomáš Voříšek

Contact: Tomas.Vorisek@svn.cz

PR

Rules and priorities for Joint Implementation projects in the Czech Republic

Continued from page 1

unit, with the price being assessed in the context of development of these abatements on an international scale.

- The "sufficiency" condition, i.e. greenhouse gas emission abatement from a given technology that would not be possible without the project's implementation. Excluded in advance from further proceedings will be draft projects focused on meeting the requirements stipulated in respective generally binding legal regulations of the Czech Republic pertaining to the environment.
- Compliance with the priorities of the State Environmental Policy and those of the State Programme for Support of Energy Savings and Use of Renewable Energy Sources.
- The condition of the "best available technology" in accordance with the legislation adopted by the European Communities.
- Benefits for expansion of know-how and new technologies in the CR.
- Environmental aspects of the project – for example, efficient use of natural sources, waste recycling etc.
- Economic aspects of the project - for example, cost-effective solution, conformity with macroeconomic policy on both the national and regional level (employment growth, regional development etc).

Tomáš Chmelík

Department of Environmental Economics,
Ministry of the Environment of the CR
e-mail: Tomas_Chmelik@env.cz

Compiled from the paper presented at the
EEBW 2002 conference.
- jk -

New ways of communicating with customers of Central Bohemian Energy Utility

Modern tools of communication and computer technology allow energy companies to launch and implement new forms of contact with an enormous number of customers. At present, most companies operate telephone information centres (call centres) that provide customers-electricity consumers with the possibility to resolve several types of problems not by visiting a contact workplace but over the telephone. Further extension of the possibilities of such customer centres is brought by CRM (Customer Relationship Management) systems. In the second half of last year, Středočeská energetická (the Central Bohemian Energy Utility - STE) began running its customer centre on the telephone number 14 041 and, at the present time, is putting the ORACLE-CRM information system into full operation. The entire system is interconnected through an integration layer with customer systems and the distribution control system, while also using entry through the STE website.

Opening of the new centre aimed to increase the quality and professionalism of contacts with customers, extend the services provided by telephone, e-mail and fax, set up an integrated environment for contacts with consumers and, above all, gain feedback about customer requirements for further use in the company's activity. The customer centre is primarily intended for the widest segment of customers - small consumers taking off electricity from low-voltage networks, both for households and enterprises. Today, STE has more than 650,000 small consumers.

Intended for STE's 2,800 or so bulk consumers, mainly large industrial companies, is the STE PORTAL. When establishing it, the Central Bohemian Energy Utility was governed by the principle that the internet and application of its technologies also bring new possibilities for the electricity supplier's contact with its customers. One of the possibilities was the creation of the PORTAL, i.e. a gateway to information that will be the key to successful future electricity trading. The portal (at the internet address portal.ste.cz, or as a reference from www.ste.cz) means an entrance for those who want to do business with the utility online or those who draw information from sources provided for the purpose of mutual information exchange. Its task is to provide an integrated communication channel to everyone who wants to participate in commercial activities, thus becoming a sort of central nervous system of internet trading.

The Central Bohemian Energy Utility holds its customers in high regard and believes that they are and will continue to be satisfied with the services provided. It is possible that on the electricity market currently being opened STE services will also be used by customers seeking a reliable and cheap electricity supplier who are yet to use STE services.

The Central Bohemian Energy Utility is prepared to extend the number of its customers, while maintaining the high standard of services on offer.



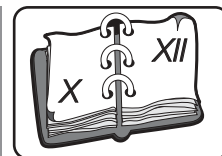
Středočeská energetická a.s.
(Central Bohemian Energy Utility)
Vinohradská 325/8, 120 21 Praha 2
Tel.: 222 031 111 fax: 222 032 555
<http://www.ste.cz>
e-mail: inbox@ste.cz

CUSTOMER CENTRE

Tel.: 14041; fax : 222 032 800

e-mail : zakaznicke.centrum@ste.cz

Conferences, Exhibitions and Presentations



January – March 2003

Renewable energy sources

Conference on technical, economic and environmental aspects of utilising renewable energy sources

20. 1.–21. 1.

London, The Hatton, Great Britain

Contact: SMI's Conferences

e-mail:

customer_services@smi-online.co.uk

www.smi-online.co.uk/renewable.asp

Prague Roofs

5th specialised exhibition of roofing, materials, accessories, crafts and services for roof construction and renovation

30. 1.–1. 2.

Exhibition Grounds in Prague Holešovice – Industrial Palace

Contact: Střechy Praha s.r.o.

e-mail: streachy@streachy-praha.cz

www.streachy-praha.cz

ECO CITY

9th environmental and energy-efficiency trade fair

6.2.–8.2.

Prague-Letňany Great Exhibition Palace

Contact: ABF, a.s.

e-mail: veletrhy@abf.cz

www.ecocity.cz

Exhibition of renewable energy sources

2nd year of the exhibition

26.2.–1.3.

Lyon Eurexpo, France

Contact: SepelCom-Piscine

e-mail: cguillem@sepelcom.com

www.energie-ren.com

TAU EXPO

9th international specialist trade show of environmental technologies and services

5. 3.–8. 3.

Milan – Fiera Milano

Contact: Fiera Milano

e-mail: info.fierami@fieramilano.it

www.fieramilano.it

TerraTec

International specialist trade fair of environmental technologies and services

Enertec

International specialist power-engineering trade fair

11.3.–14.3.

Leipzig – Messe

Contact: Leipziger Messe GmbH

e-mail: info@leipziger-messe.de

www.leipziger-messe.de

ForArch

Exhibition of civil engineering, housing and energy saving

19.3.–21.3. – Pilsen, Invest-K House of Culture

20.3.–22.3. – Znojmo, Louka Exhibition Grounds

27.3.–29.3. – České Budějovice, Exhibition Grounds

Contact: ABF, a.s.

e-mail: veletrhy@abf.cz

www.abf.cz

Pragothem

30th international trade fair of energy, heating, energy saving, technical building equipment, insulation and ecology

25.3.–27.3.

Prague-Holešovice Exhibition Grounds

Contact: Incheba Praha s.r.o.

e-mail: info@incheba.cz

www.incheba.cz

Directory of websites devoted to energy market liberalisation

WWW

Czech transmission system operator

www.ceps.cz

Energy Regulatory Office

www.eru.cz

Association of Large Energy Consumers

www.energetik.cz/svse

Czech Association of Energy Distribution Companies

www.csres.cz

European Transmission System Operators

www.ets-net.org

Council of European Energy Regulators

www.ceer-eu.org

Electric Power Industry Restructuring and Deregulation, Energy Information Administration DOE

www.eia.doe.gov/cneaf/electricity/page/restructure.html

International Energy Agency

www.iea.org/about/divers.htm

Association of Power Exchanges

www.theapex.org

EU website on implementation of the Directive on the Single Electricity Market

europa.eu.int/comm/energy/en/elec_single_market/index_en.html

Electricity Market Operator

www.ote-cr.cz

News at SEVEN is produced in English and Czech quarterly by SEVEN, The Energy Efficiency Center.

Circulation: English version – 1600 copies, Czech version – 2500 copies. SEVEN strives to promote energy efficiency in order to support economic development and protect the environment. The newsletter informs members of the energy community about current energy efficiency events and developments in the Czech Republic and welcomes outside submissions.

SEVEN is located at Slezska 7, Praha 2. Address: SEVEN, 120 56 Prague 2, Czech Republic. Editor: Juraj Krivošík (juraj.krivosik@svn.cz)

Phone: +420 224 252 115, +420 224 247 552, fax: +420 224 247 597, E-mail: seven@svn.cz, Internet: <http://www.svn.cz>.

Podávání novinových zásilek povoleno Českou poštou, s. p., odštěpný závod Přeprava, čj. 1009/96, dne 13. 3. 1996 • ISSN 1213 - 5844