News at SEVEn

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ENERGY EFFICIENCY NEWS FROM THE CZECH REPUBLIC

The First Specialised Energy Consultation and Information Center for Towns and Municipalities

In recent years SEVEn has extended cooperation with towns and municipalities during creation of regional energy policy in given localities. This year it has become the first energy consultation and information centre (EKIS) attached to the Czech Energy Agency to focus in particular on consultancy for towns and municipalities.

The aim of creating regional energy policy is to optimise energy flows in regions in such a manner that in connection with energy consumption as little energy as possible is produced and thus negative impacts on the environment are kept to a minimum.

During its activities, SEVEn will provide consultations concerning solutions to energy problems of towns and municipalities, collect and give information in the area of energy economy necessary for orientation and decision-making of towns and municipalities and hand over this information in the form of individual consultations, make it public on the Internet and, on request, send information to town and municipal offices. SEVEn is open to other forms of co-operation as well. It also expects close co-operation with the Union of Towns and Municipalities.

Official office hours for providing information have been fixed by the Czech Energy Agency for Mondays and Wednesdays between the hours of 1 pm and 5 pm. However, SEVEn's employees presume that every meeting will be arranged by telephone in advance. Such agreements can then be made at any time with SEVEn's Prague or České Budějovice offices.

Contact persons: Prague - Jaroslav Maroušek, Ladislav Tintěra, Ph: +420-2-24252115, 24247552 České Budějovice - Jiří Neuwirth, Ph: +420-38-6350443

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National Energy Efficiency Study - CZ

The objective of the study currently being prepared is to describe the main reasons for the high level of energy intensity of the Czech economy and the concurrent low level of utilisation of renewable energy resources. On the basis of the study, possible measures to improve this situation will be identified and compared. The work will culminate in the proposal of several effective strategies, differing in their extent and, thus, also expected contributions and expenses, from which political decision-makers can choose. The results of the study are assigned for the government and it is presumed that the Ministry of Industry and Trade will use part of the study as data for creation of a draft energy policy.

The study is financed by the World Bank with contributions from the Ministry of the Environment and the Ministry of Industry and Trade. In addition to several Czech firms International, SEVEn, (SRC MARCH Consulting and RAEN), a Dutch team is also participating in elaboration of the study (ECN, DHV, SEO) through mediation of which it will be possible to make use of several years of experience with implementation of support programmes and measures in the Netherlands.

When choosing suitable measures to achieve the set objectives there will be selection from a wide spectrum which includes the use of system economic tools, as well as market, financial, information and regulatory tools and voluntary agreements. Economic tools functioning in system terms (see below) include price deregulation and involvement of environmental damage. For evaluation of individual measures, multicriteria assessment will be used, thus also allowing, besides the criterion of cost effectiveness, inclusion of other, hard to quantify, aspects. Analysis of cost effectiveness will allow expenses to be estimated for achievement of the given increase in energy efficiency or production of renewable energy. Other important criteria are indirect economic, environmental and social impacts of the measures and their accordance with other social objectives and strategies.

Within the framework of assessment of each measure it is necessary to evaluate its impact on the total efficiency of resource utilisation in the economy. This criterion will make more visible the contribution of system economic measures, such as price deregulation and gradual inclusion of environmental damage (externalities), supporting the functioning of effective market mechanisms. System tools operate through creation of the right price signals when prices reflect real costs of economic activities. As a consequence, prices will enter all economic decisions made and will inform about real costs of individual alternatives. Thus is excluded the necessity for a central decisionmaker, who never has available as good and comprehensive information about actual

possibilities, costs and profits as individual investors. System interventions in the economy can certainly bring about a wide range of changes and connected uncertainties, possible risks, costs for adaptation and distribution impacts.

Rapid energy price deregulation in the Czech Republic is inevitable due to the need to rectify the deformed market, which at the present time has a misleading effect on the taking of investment decisions. Artificially low energy prices do not motivate households to adopt saving measures which they would take with the real level of prices without any further incentives. In this case, it is more a question of removal of an erroneous measure implemented in the past. The much emphasised social impacts can be dealt with through a system of social benefits in cases when it is necessary.

Assertion of significant inclusion of environmental externalities with the help of taxes is improbable in the near future in the Czech Republic without international coordination at least within the European Union. The reason is that increasing the price of admission through including caused damage would decrease the competitive ability of Czech industry and a common process in several countries would eliminate this threat. Another problem of internalisation is the lack of experience with the process and, thus, (continued on page 2)

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National Energy Efficiency Study - CZ (continued from page 1)

greater uncertainty during forecasting of consequences. However, these risks can be diminished through gradual increases in tax rates, when it would be possible during determination of further development of rates to react to already occurring real impacts and changes in economic conditions. But is is necessary to ensure stability of the fixed future rates and to leave a sufficient amount of time for adaptation and inclusion of future price development in investment decisions. Introduction of energy taxes, not only in the Czech Republic but also in the European Union and other countries, is also hindered by its threatening the economic interests of politically influential groups. On the other hand, in economically developed countries there is growing pressure to adopt more radical and less popular measures, in particular due to the need to fulfil obligations on decreasing greenhouse gas emissions resulting from Kyoto. In addition, utilisation of revenues gained can positively affect the lowering of labour taxes and so help to resolve the problem of unemployment. In some countries (e.g. Belgium, Holland and Scandinavian countries) the first steps have even been taken. However, for now during creation of the strategy for the Czech Republic it has been necessary to temporarily replace lacking system measures by other, although less efficient, partial measures.

Contact: Jana Szomolányiová, SEVEn

Energy Savings in Households

SEVEn, as a member of an international consortium within the SACHA-II project (carried out under the title UN/ECE EE 2000 -SAVE II), will this summer complete work focused on assessment of "white technology" appliances on the Czech market and household amenities, washing machines, refrigerators, freezers and other electrical appliances, including lighting. The project has several phases - from assessment of the market and technical attributes of the offered appliances, through knowledge about consumer's behaviour to the recommendations for state policy in the area of household electric appliances.

One important part of the project was also the questionnaire concerning the behaviour, habits and amenities of Czech households. More than 1000 households were addressed and, in co-operation with specialist pollsters from SEVEn and the firm GfK Prague, extensive questionnaires were filled in. The results of this investigation will within the project's framework be evaluated and published. During the project, SEVEn's employees encountered various opinions. Consumers are aware that using household electric appliances costs money but have no idea ofexact numbers and ways of decreasing these costs.

Let us take, for example, one washing cycle of an automatic washing machine. The price for washing one kilogram of laundry depends on the amount of electric energy, water and detergents consumed. Meanwhile, the purchase price of the washing machine is not taken into consideration.

Average annual electricity consumption in a three- or four-member family amounts to 3500 kWh. Of this consumption, approximately 350 kWh a year is consumed on laundrywork. At present, there are modern automatic washing machines on the market which are more energy-efficient than their predecessors. When washing one kilogram of laundry at the temperature of 60°C, they consume about 12-15 litres of water and 0.23 kWh of electric energy, which is roughly 30% less than washing machines from 1980.

Comparison of 11 types of washing machines from one producer showed differentiation of energy intensity from 0.19 to 0.27 kWh per kilogram of laundry during one washing cycle and water consumption from 12 to 17 litres per kilogram of laundry during one washing cycle. Washing machines were evaluated according to the unified methodology EN - 60456 from 1997 (or IEC 60-456) concerning a standard washing cycle at the temperature of 60°C. Even at first glance obvious differences can be seen in consumption of electric energy and water (by almost 30%). Besides standard assessment of electricity consumption during the 60°C cycle, assessment at the temperature of 90oC without pre-wash is also used. Electric energy consumption increases at this temperature to as much as 0.38 kWh per kilogram of laundry during one washing cycle. Moreover, this type of washing is nowadays useless. The washing ability of modern washing powders and liquid detergents is the same at the temperatures of 90°C and 60°C. But energy consumption is up to 100% higher.

At the present time, although to date Czech legislation does not require it, in shops there is a range of washing machines equipped with energy labels, thus making customer's orientation to more energy-saving appliances easier. Apart from technical parameters(energy consumption, rotations, noise etc.) other quality signs are stated on the label, such as washing capacity and level of spin-drying. Hence, customers can really choose the best washing machine, without being influenced by advertising.

And so, how much does one washing cycle in a washing machine with a load of 5 kg of laundry cost (without the initial investment)? - Electric energy

consumption (1.15 kWh)	2.52 CZK
- Water consumption (75 I)	2.25 CZK
- Dosage of detergent	7.00 CZK
- Total, an ideal average washi	ing
cycle costs	11.77 CZK.

The price of an ideal cycle is affected by various circumstances and defects, such as:

- Technical level of the washing machine stated on washing-machine labels. Energy consumption varies between +/- 30%.
- Volume of the load a smaller amount of laundry is put into the washing machine than it can wash. A half-load in practice results in an up to twofold increase in price for a washed kilogram of laundry. Therefore, we look for such appliances which allow the choice of at least a half-load of laundry. This decreases costs by about 20%. The most modern washing machines automatically weigh the amount of laundry and adapt the dosage of water and energy to it.
- Washing temperature we are accustomed to washing at higher temperatures. Most detergents wash at the same level of quality at lower temperatures. The difference in electric energy consumption for 60°C and 95°C is 100%.
- Dosage and price of the detergent the choice of detergent and its dosage significantly affect the price of washing. Prices for one wash vary between 3 and 10 CZK/cycle.
- With an identical price of detergent dosage the price for one kilogram of washed laundry will range from 2.07 to 6.29 CZK for one kilogram. This difference is caused in particular by a half-load of laundry in a washing machine with a usual cycle.

The example given shows that energy and water consumption is decreased by a highquality product and, in particular, by the user's behaviour. Through an economical dosage of detergent and the right load of laundry, as well as choice of temperature, we are saving not only money, but also the environment. Contact: Martin Dašek, SEVEn



EEBW Conference and Exhibition in 2000

The international conference connected with the exhibition entitled EEBW (Energy Efficiency Business Week) which SEVEn has organised in Prague since 1991 will now be held every two years. The sixth conference took place in 1998 and the seventh year of SEVEn's event will be in the magic 2000.

After one year of holding the conference in the Radio Free Europe building, the organisers have decided to return to the original venue: the Congress Centre (the former Palace of Culture). The term has already been arranged for the days:

October 17 - 19, 2000

The general theme is certainly derived from the aim to decrease energy consumption and protect the environment. The focus of individual seminars is already being prepared and will be published in the next issue of the newsletter.

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Review of SEVEn's Internet page

Towards the end of last year SEVEn's website was updated and since then it has been more lucid and contained more information. In the May issue of the magazine Energy, Gas, Heat & Money in the section "We Have Found on the Web..." a review of this page was published. We have taken the liberty of reprinting this review:

An extensive server on power engineering can be found at the address http://www.svn.cz belonging to the Energy Efficiency Center - SEVEn which comprehensively deals with the issue of efficient utilisation of fuel, energy and heating. We list the contents from the main page:

- Introducing SEVEn.
- SEVEn's Activities.
- Projects.
- Publications.
- Newsletter "News at SEVEn".Energy and Economic Bulletin
- for the Czech Republic.

• EEBW: Energy Savings (conferences regularly organised by SEVEn).

- Strategic Environmental Assessment of Czech Energy Policy Proposals.
- Of Czech Energy F
 Contacts.

The website has been compiled in great detail and compares various kinds of fuel and heating sources. Special attention is paid to questions of price, significant space in the website is devoted to energy conceptions and audits. Even ecological activists will certainly be pleased with their visit since power engineering and ecology is dealt with here independently in mutual connections. On this server we have not found anything which could be "wiped off". We recommend visiting this website and will follow its contents. The relatively small team of this energy organisation, which has also organised international conferences, is very agile and without doubt extremely important for this country's energy development.

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SEVEn Still a Non-profit Organisation

In the last year's final issue (News at SEVEn, #4/98) we announced the transformation of SEVEn into a public benefit corporation (it is correct translation of the Czech title that type of non-profit organisation), which should have taken place by January 1, 1999. Owing to the workload of commercial chambers, SEVEn's proposal for this change was only attended to in May. Thus, in official terms, SEVEn continues to be a public benefit corporation May 7, 1999.

For SEVEn's customers and co-operating organisations practically nothing has changed, apart from the fact that it will be necessary to amend some contracts since with the change to the statute SEVEn has also obtained a new identification number of organisation (ICO).

Henceforward you will come across the name SEVEn, The Energy Efficiency Center, o.p.s., or SEVEn, Středisko pro efektivní využívání energie, o.p.s. in Czech. - vs -

Seminars On Municipal Power Engineering

In co-operation with the Czech Energy Agency, SEVEN is preparing a series of autumn seminars concerning municipal power engineering. In these seminars SEVEn wants, on the one hand, to increasingly present its diverse experience with regional energy planning and, on the other, to react to emerging situations on the general level or in actual cases. The times and venues of these seminars have not yet been determined but to those interested in participation more detailed information will be sent in time.

From August to December a total of five one-day seminars will take place designed for decision-makers in municipal power engineering. They will be interactive meetings during which the participants will be given in an intensive form a systematically assorted account of key themes and will be followed by a two-way dialogue on possible practical effects or applications concerning individual participants.

In the course of the seminars these topics will be discussed:

• Energy policy and legislation in the CR and within the EU.

- Draft energy proposals of towns and regions.
- Procedure during preparation of actual projects.
- Sources of financing municipal projects.

If you are interested in the mentioned themes, contact SEVEn's Prague or České Budějovice office.

Contact: Prague - Jaroslav Maroušek, Ph: +420-2-24252115, 24247552 České Budějovice - Jiří Neuwirth, Ph: +420-38-6350443

Renewable Energy in Europe

From 25-27 May 1999 the second World Sustainable Energy Fair was held in Amsterdam, the Netherlands. This event consisted of a fair and several conferences. A two-day conference, the Kick-off Conference for the European Union Renewable Energy Strategy, addressed the renewable energy policy in several European states and above all the European strategy, stated in the White Paper. This White Paper presents a strategy to increase the share of renewable energy in the EU from the current 6% to 12% by the year 2010. The so-called Take-off campaign, presented at this meeting, aims to accelerate the development of renewable energy sources (RES) to the year 2003.

As energy supply differs per country, renewable energy developed different in almost all European countries. Abundance of fossil fuel sources or a large nuclear power potential mostly limited the growth of renewable energy (e.g. Britain, France, Belgium), but other countries that have to import most of their fuels developed a large renewable energy share (e.g. Denmark, Finland, Austria).

Two main reasons could be given for the increasing attention during the last decade. First, the threat of climate change and the commitments made in the Kyoto Protocol make it necessary to reduce greenhouse gas emissions, and second, the need for diversification of the energy supply in the future makes countries search for alternative energy sources. From the presented renewable energy sources, most is expected from biomass and wind energy in the near future.

A problem for further development of RES is the fact that in most cases state subsidies or instruments like fixed feed-in tariffs for RE are still needed. Furthermore, the ongoing liberalization of the electricity market in Europe gives many uncertainties for RES. Therefore, several alternative financing schemes are being developed to make RE more attractive, fiscal measures, green certification etc. An interesting way to stimulate green electricity, the so-called green label model, was developed in the Netherlands. This system was developed after the agreement between utilities to produce a certain percentage of their electricity through renewable energy sources. Producers of electricity receive a green label for a certain amount of renewable electricity produced. This label can be sold to other utilities that are not able to produce their share of renewable energy in their own region.

However, such a system requires a clear definition of what energy sources are renewable and also a reliable registration system. Ideas were launched at the conference to introduce such a system on the European level so that renewable energy generation can take place in those regions were production is most cost-effective and can be traded between countries.

Contact: Michael ten Donkelaar, SEVEn

Energy Savings through the Eyes of Children

The TEREZA civil association is the co-ordinator of a number of projects for children's interest activities in schools and outside them. The best-known include the worldwide GLOBE project which maps the current status of our planet's environment and originates in the United States. Energy is the topic of the lesser-known ENERGY programme. It started in Norway and has extended to several European countries. Children in elementary schools and in lower years of grammar schools thus have the opportunity to gain an idea of the energy background of their schools and try to emulate the work of power-engineers.

Participating schools receive the project's exercise-books. In the first phase they concentrate on the energy audit of their school. According to the Norwegian method of key numbers they express numerically the school's total consumption and the effect of saving measures on decreasing energy expenses. In the second, independent part they deal with real savings in their school building. Together with children from other European countries, during three weeks in February they measure the fuel and heat consumption in the building in question. The first week is comparative, during the second they try to implement the optimum heating regime and in the third they try to achieve a maximum level of savings. In their reports the children also describe extreme approaches, such as "one week we were studying in coats but it was worth it, we saved". Within the work on the project, TEREZA lends digital watt-meters to measure power input of school appliances and the children express in numbers the cost of an hour's operation of an overhead projector, video or cooking in the school kitchen. For individuals, work instructions for energy saving in households are prepared.

More than fifty schools sign up for the project each year.

SEVEn participated in initiating the project's implementation in the Czech Republic during which it was necessary to adapt Norwegian data to our conditions. Every year it carries out evaluation of the received reports. It provides specialist supervision for energy methodology and, in particular, creates lucid instructions for children and their teachers. The Czech Republic has even submitted proposals

of amendment international for methodology. After personnel changes in the project's management, these activities, to the detriment of the project, have lessened, however, new ones have originated. This year in the most active schools the children's work has been followed up by professional audits of the "errand" type. With a financial contribution from the Partnership foundation, the firm Krušnohorské sdružení pro úspory energie (The Ore Mountains Association for Energy Savings) has expressed numerically the saving potential of a school and offered its services with commercial financing of the project from achieved savings. The contribution for one school amounted to 15000 CZK. The financial participation of a school was symbolic - 2000 CZK.

Contact: Ivana Holubcová, TEREZA, Association for Ecological Education, Jižní IV/1750, Praha 4, Ph.: +420-2-769401, E-mail: ivana.holubcova@terezango.cz

Wind Power Engineering - Faith and Hope?

In the debate, only recently calmed down, surrounding the completion of construction of the Temelin nuclear power plant the "renewable resources card" was occasionally played. Groups using this argument pointed to the almost inexhaustible possibilities of these resources in this country. The reality is, unfortunately, somewhat different. Wind power generation potential in our territory is, according to an assessment from the Institute of Atmospheric Physics of the Academy of Science of the CR, equal to 1000 wind turbines with output per unit of 600 kW. They are considered for places where the average wind speed is greater than meters per second. five With construction of the whole thousand power plants it is possible to achieve the installed capacity of 600 MW. Annual production will then vary between 800 -1300 GWh. That is about 1 - 2% of our national production of electric energy. The capital cost is roughly 27 billion CZK.

That is information obtained from Mr. Josef Štekl from Institute of Atmospheric Physics of the Academy of Science of the CR.

Work which SEVEn did for an important electric energy producer provided further information in this area of electric energy production where faith and good intentions are usually superior to real possibilites. At the present time, statistics show that the installed capacity of Czech wind power plants is 7.5 MW in 17 localities. However, only five of them supply electricity to the network. Real output is 4.1 MW and the share in national electric energy production is 0.003%. Other power plants have been out of operation for a long period or even dismantled. In 1998 only Dlouhá Louka, Svatý Hostýn, Ostružná, Mladoňov, Velká Kraš and Mravenečník, put into operation at the end of the year, were in commercial operation. But even these, still operating power plants do not bring any profit for their owners. Research has shown that entrepreneurial projects in wind power engineering in the Czech Republic were altogether based on incorrect presumptions. In several cases, unreliable and noisy domestically produced technology was used, elsewhere wind speed was incorrectly measured and, alternatively, some entrepreneurs believed the empty promises of politicians in the first half of the 1990s about soon-to-increase purchase prices of electric energy. Many investors made their decisions about 10million investments on the basis of distorted information. Wind power engineering in the Czech Republic is currently undergoing a period of disillusionment. A similar experience was earlier lived through by supporters of other renewable energy resources, such as water power and solar energy. - ti -

Contact: Ladislav Tintěra, SEVEn

Draft Energy Proposal for the Tábor Conurbation

To come up with a draft energy proposal for an area inhabited by 45 000 people with developed industry, several large heating sources, an interconnected network of heat supplies and a number of interest groups asserting their interests which must be met - such was the task facing SEVEn on commencing its work in the regional conurbation of Tábor - Sezimovo Ústí - Planá nad Lužnicí. Tábor Municipal Office, as the customer, represented the interests of all three towns. The objective of the work was to collectively create a modern energy document capable of functioning in the market environment. The work had to meet the specific problems of the customer both in the present conditions and for the future period.

The conurbation includes three towns - Tábor. Sezimovo Ústí and Planá nad Lužnicí - and contains more than 45 000 inhabitants. A significant element of the area's energy sector is its extensive system of centralised heat supplies. The steam network interconnects four basic sources with more than 160 consumers. The northern part of the area is supplied by the Tábor Heating Power Station. In the southern part, steam is supplied by the company ECS, which emerged after privatisation of the company SILON through separation of enerav operations. The majority of heat from the interconnected system is supplied to industrial consumers, the rest to

households and the non-manufacturing sector. The total installed heat capacity is 399 MW and electric energy capacity is 70 MW. In addition, in the southern area future construction of a steam-gas power plant with electrical output of about 2 MW is being considered. The size of sources and the extent of heat networks is best shown by comparison with the incomparably larger České Budějovice conurbation which has 100 000 inhabitants. There, in heat generating sources 480 MW of heat and 66 MW of electrical capacity is installed.

Part of the work was definition of the relationship of the town to production and consumption of energy. Here, the interests of the town as the region's administrator came into play (citizensvoters versus heat prices and ecology). as well as the interests of the town as the owner of energy goods and the interests of the town as a significant energy consumer. Interests defined in this way were reflected in individual articles of the energy document. The elementary energy balance of the area was determined on the basis of SEVEn's calculation model, with data from state statistics, meteorologists and companies distributing heat, gas and electric energy being used. Future development was estimated in the area between high (growth) and low (decline) scenarios. With the help of the multicriteria assessment, areas with recommended methods of energy supply were determined.

A more detailed territorial view was elaborated within the framework of the case study for the town's Čelkovice district. Part of the case study is the proposal for introducing the ideas of the system of "energy management" in the region. This concerns the manner in which the town can under conditions of lacking legislation evaluate and influence competition between energy suppliers.

A part of the document, already traditional practice for SEVEn, is the proposed demonstration project for energy savings in town buildings. This concerns elementary school facilities and the system of monitoring and affecting energy consumption, and the system of optimal allocation of financial means to repairs and maintenance. The energy document is linked up to the GIS (Geographic Information System) which on several levels illustrates energy sources and appliances, distribution of energy media, emissions and energy balances in electronic form. - ti -

Contact:

Ing. František Dědič, Mayor of Tábor, Ph.: +420-361-253030, Fax: +420-361-253339, E-mail: mutabor@mbox.vol.cz Ing. Ladislav Tintěra, SEVEn

ENERGY EFFICIENCY EVENTS IN AND ABOUT CENTRAL AND EASTERN EUROPE

July 99 - October 99

HOME AND HEATING

Exhibition of apartment amenities, furniture and heating Lysá nad Labem, Czech Republic, September 2 - 5, 1999 Contact: Výstaviště Lysá nad Labem s.r.o. Ph: +420-325-552050, Fax: +420-325-551169

LIBERALISATION OF THE ENERGY MARKET

First Czech-German-Austrian conference on liberalisation of the energy market in Central and Eastern Europe ČVUT Prague, Czech Republic, September 6 - 8, 1999 Contact: CEM 1999, c/o Jan Píchal, Praha Address: Katedra fyziky FEL ČVUT, Technická 2, 166 27 Praha 6, E-mail: pichal@feld.cvut.cz

STAVOTECH PARDUBICE

Building and technical trade fair Výstavní centrum Ideon - Pardubice, Czech Republic, September 7 - 9, 1999 Contact: Omnis Expo, s.r.o., Olomouc Ph: +420-68-5516155, Fax: +420-68-5232097, E-mail: omnis@omnis.cz, http://www.vvv.cz

DOMOTECHNIKA

Trade fair of household technology, appliances and lighting Areál Strahov - Prague, Czech Republic, September 8 - 11, 1999 Contact: Terinvest, Praha Ph: +420-2-21992132, Fax: +420-2-21992139

INTERNATIONAL ENGINEERING TRADE FAIR

Featuring energy and heavy-current electro-technology Výstaviště, Brno, Czech Republic, September 13 - 17, 1999 Contact: Brněnské veletrhy a výstavy a.s., Brno Ph: +420-5-41152960, Fax: +420-5-41153044, E-mail: msv@bvv.cz, http://www.bvv.cz/MSV

FOR ARCH

Tenth annual international construction exhibition

Prague - Letňany, Czech Republic, September 21 - 25, 1999 Contact: ABF a.s., Praha Ph: +420-2-22891111, Fax: +420-2-22891198, E-mail: veletrhy@abf.cz, http://www.abf.cz

HIT

Fifth international household consumer electronics and technology trade fair Výstaviště - Prague, Czech Republic, September 23 - 27, 1999 Contact: Progres Partners Advertising s.r.o., Praha Ph: +420-2-24218403, 24213905, Fax: +420-2-24218312, E-mail: info@ppadvert.cz, http://www.ppadvert.cz/hit/index.html

HOT DOMESTIC WATER

Seminar on theme "hot domestic water" Novotného lávka Prague, Czech Republic, October 6, 1999 Contact: Společnost pro techniku prostředí, Praha Ph.: +420-2-21082353, Fax: +420-2-21082201 E-mail: stp_set@mbox.vol.cz

CONEX + HIGH TECH

International exhibition of building techniques and technology of construction materials and exhibition of consumer electronics, electrical and household appliances Nitra, Slovakia, October 6 - 9, 1999 Contact: Agrokomplex - Výstavnictvo, Nitra Ph: +421-87-572301, 531129, Fax: +421-87-35983, http://www.agrokomplex.sk

ELECTRO

Exhibition of electronics, electro-technology and household appliances Výstaviště - Pilsen, Czech Republic, October 7 - 9, 1999 Contact: Exposale s.r.o., Praha Ph: +420-2-67995632, Fax: +420-2-67995634, E-mail: Praha@Exposale.cz

RACIO-EKO-THERM

Sixth annual rational fuel and energy consumption exhibition Dum kultury Inwest - Pilsen, Czech Republic, October 7 - 10, 1999 Contact: Kastor Plus s.r.o., Plzen Ph: +420-19-7237475, Fax: +420-19-7236875, E-mail: kastor@kastor.cz

ELEKTRA

Trade fair of industrial electro-technology and consumer electronics Výstaviště Flora - Olomouc, Czech Republic, October 13 - 15, 1999 Contact: Omnis Expo s.r.o., Olomouc Ph: +420-68-5516155, Fax: +420-68-5232097, E-mail: omnis@omnis.cz, http://www.vvv.cz

FOR HABITAT PLZEŇ

Fourth annual housing and household services exhibition Výstaviště - Pilsen, Czech Republic, October 21 - 24, 1999 Contact: ABF a.s., Praha Ph: +420-2-22891111, Fax: +420-2-22891198, E-mail: veletrhy@abf.cz, http://www.abf.cz

ENVI BRNO

International trade fair on creation and protection of the environment BVV Brno, Czech Republic, October 19 - 22, 1999 Contact: Brněnské veletrhy a výstavy a.s., Brno Ph: +420-5-41153351, Fax: +420-5-41152992, E-mail: siwewin@bvv.cz

ELO SYS

International trade fair of electro-technology, electronics and energy Trenčín, Slovakia,
October 19 - 22, 1999
Contact: Výstavisko TMM a.s., Trenčín Ph: 0421-831-435600,
Fax: 0421-831-435600,
E-mail: tmm@psg.sk,
http://www.elosys.sk

COMBUSTION OF LIQUID FUELS

Seminar on theme "combustion of liquid fuels" Novotného lávka Prague, Czech Republic, October 6, 1999 Contact: Společnost pro techniku prostředí, Praha Ph.: +420-2-21082353, Fax: +420-2-21082201 E-mail: stp_set@mbox.vol.cz

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