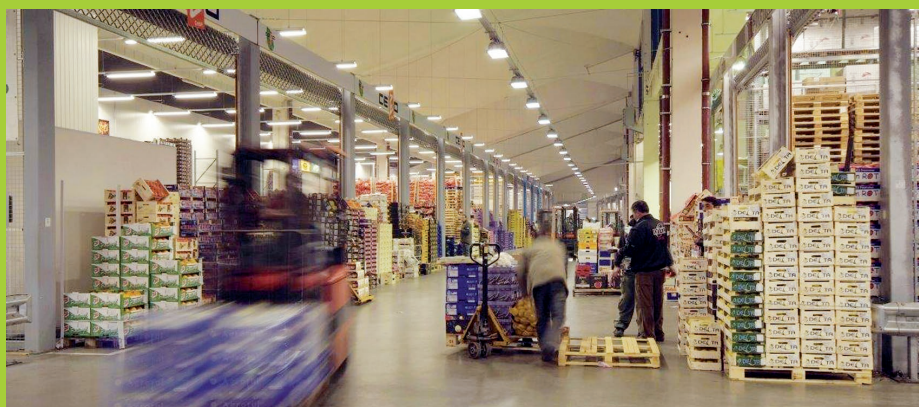


News at SEVEn

Energy efficiency news from the Czech Republic and EU

Common Energy Concept in Business Parks: An Opportunity for Savings

The on-going centralisation of various business areas, including industrial production and services, leads to growing use of so-called industrial or business parks. They are significant consumers of energy, particularly of electricity and heat. Two situations in particular are responsible for the establishment of business parks: the revitalisation of industrial sites that are no longer in operation (because the original industrial plant has been closed down) and new development zones established in order to support the economic development of a nearby town. What are the best tools to identify and carry out the energy savings potential?



In both of these cases, the energy needs are usually covered solely by individual organisations that are supplied by new electricity and natural gas connections. The existence of a local electricity distribution system is less frequent and common heat

distribution is nowadays even rarer. However, sharing of energy infrastructure is the major factor that makes energy supply and services more environmentally and economically favourable.

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LED Tubes: A Substitute for Linear Fluorescent Lamps

Linear fluorescent lamps are among the most common types of light sources. Their low price, variability, availability, market supply and time-tested products are the main reasons for their popularity. However, the boom in LEDs introduced LED tubes as substitutes for linear fluorescent lamps. The quality of the initial types of these light sources was low due to a significant change of light distribution and complicated luminaire adjustment was often required. Several years later the situation has changed and nowadays LED tubes are offered even by established producers of light sources.

LED tubes

LED tubes, i.e. light emitting diodes situated inside a tube, work as a substitute for linear fluorescent lamps and are offered in various designs, either with G13 caps substituting

T8 and T12 lamps or with G5 caps substituting T5 lamps. LED tubes replacing electromagnetic ballasts as well as high-frequency electronic ballasts are also available on the

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Biogas Plant Supplies Heat to Industrial Park in Písek

eecee welcomes new and reelected board members

Market Surveillance and Energy Efficient Products: The EEPLIANT European Project

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Professional and Energy Efficient Cooling

Refrigerators and freezers designed for professional use can be significant energy consumers in shops and restaurants and in the service and building sectors. Energy consumption among individual models can vary from 30–50%. The ProCold project is therefore not only focused on the identification and promotion of energy efficient models, but has also launched a competition for supporting the most energy efficient models on the European market.

The ProCold project aims to identify energy efficient professional refrigerators and freezers with low energy consumption and ecological coolants. Cooling products that cool beverages or freeze ice cream, storage refrigerators and freezers, minibars, wine bars and the like are the project's main concern. In addition, the project also aims to foster cooperation between producers, suppliers and users such as hotels, restaurants, facility managers and public institutions. As the energy consumption of similar size models can differ by up to 50%, the project focuses on identifying energy efficient models and on educating consumers about cost savings options when choosing specific models.

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The latest Energy Performance Contracting market trends in Europe

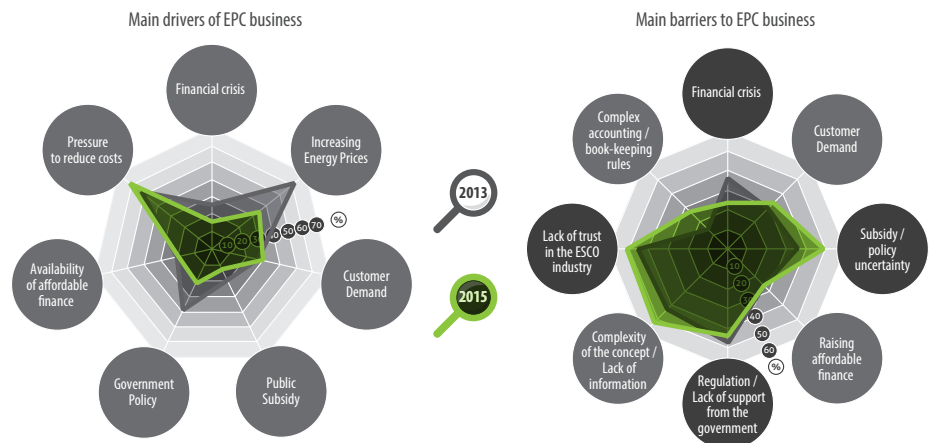
A new 2015 market survey brings an interesting overview on the latest national EPC market developments. What are the market barriers and drivers? Answers to these and other questions have been gathered within the Transparense project aiming to support transparency and development of the EPC markets in Europe.

In 2015 the market survey was responded by 81 EPC providers and 60 facilitators. It was a follow up on the 2013 survey when 144 EPC providers responded. The survey results are summarised in Transparense EPC Market Databases.¹

The development of the EPC market in Europe provides a rather positive view. About two thirds of all respondents reported that their national EPC market had seen growth over the last three years, with 17% of respondents describing major growth (of 6% and higher) and 45% of respondents describing slight growth (of 1% to 5%). While 13% of respondents are witnessing a decline, 21% reported no change whatsoever. These results are marginally more positive than those from the survey carried out in 2013, where only 41% of respondents described slight growth and only 17% reported significant growth.

Interestingly, EPC providers seem more optimistic in their assessment of the EPC market than EPC facilitators. While only 15% of EPC facilitators reported major growth, 23% of EPC providers reported such major growth. Likewise, 28% of EPC facilitators think that their national markets have stagnated over the last three years, while only 16% of EPC providers share this opinion.

The most significant **barriers to EPC business** revealed in the survey can be identified as regulatory („regulation / lack of support from the government“, „subsidy /



policy uncertainty“) and structural („lack of trust in the ESCO industry“, „complexity of the concept / lack of information“).

Some interesting changes can be observed from the previous survey, as 20% fewer respondents saw the financial crisis as the main barrier in 2015 than in 2013. On the other hand, 27% respondents considered complex accounting and bookkeeping rules a major issue in 2015 in comparison to 14% in 2013. The reasons could be more positive economic developments in Europe and rising concerns with the role of regulations counting EPC investments as public debt², creating a significant barrier to the EPC market.

As far as the **main drivers** of the EPC business are concerned, clearly the most substantial aspect is the pressure to reduce costs, followed by increasing energy prices and customer demand.

Again, we can see significant changes in the responses. While in 2013 „increasing energy prices“ was identified as the leading driver with 70% of responses, in 2015 its share dropped to half (35% of responses). Obviously this is connected to the turnaround in energy price developments.

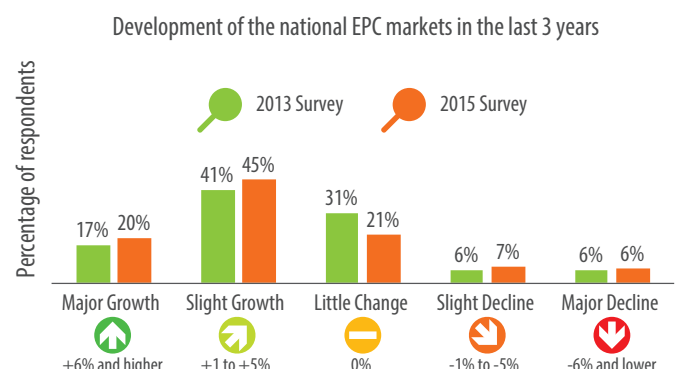
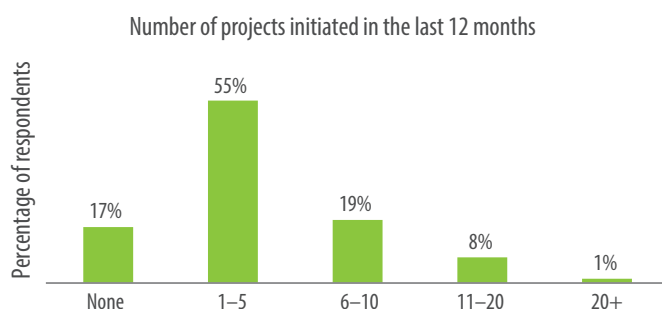
It is surprising to discover that only about a fifth (22%) of respondents indicated „government policy“ as a driver, compared to 41% in 2013. This is in contrast to the improved perception of the effectiveness of the governments' EPC policies since 2013, as identified above.

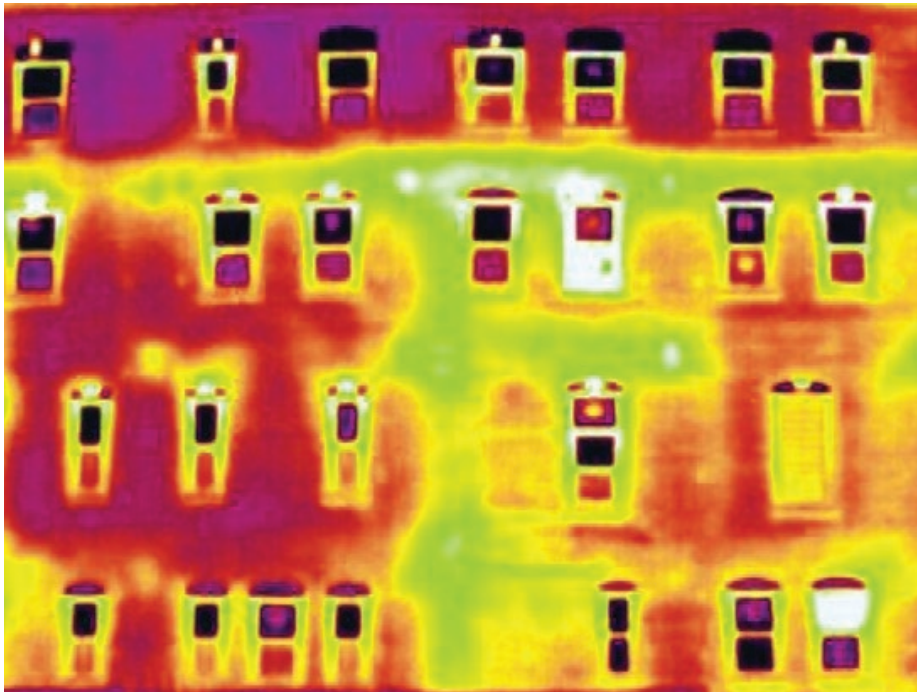
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¹ To visit the EPC market databases click on www.transparense.eu/eu/epc-databases.

² As regards Directive 2011/85/EU on requirements for budgetary frameworks of the Member States (Fiscal Directive), any form of obligation, including EPC, is considered as an increase in public debt. This discourages public authorities from approving EPC and thus creates a barrier.





EPC and SEVEn in Slovakia

A clear advantage of energy efficiency activities in Slovakia is that the Act on Energy Efficiency No. 321/201 directly establishes measures supporting and improving energy efficiency, obligations pertaining to the production of concept papers, and rights and obligations of individuals and legal entities in the field of energy efficiency. All the above measures have been established in the spirit of EPC principles (Energy Performance Contracting – a guaranteed energy service). EPC has ceased to be „virtual reality“ and has been promoted to legislative measures. As a consequence of our long-term interest in energy efficiency, a branch of SEVEn was established in Slovakia in summer 2015 under the name SEVEn Energy SK, organizačná zložka (division), based in Bratislava under the management of Juraj Chochlík.

In accordance with the above-mentioned Act on Energy Efficiency, the branch activities aim mainly at supporting energy service (§16) with a focus on consulting and information service for customers in the area of EPC (Energy Performance Contracting – a guaranteed energy service). The branch will focus on clients from the state and commercial sectors and the main activity of the branch will be analysing within the guaranteed energy service and guarantee of public tenders for ESCO.

Apart from these activities, there should be ongoing education and training aiming at improving the energy efficiency and optimisation of operation and costs in the energy field. Processing of energy audits in compliance with the decree on energy audit will be another integral part of the branch.

According to the legislative requirements of Slovakia, SEVEn was certified by

the Ministry of Economy as the support energy service provider and the provider of guaranteed energy service. A trade certificate for an energy auditor and public tender organisation was established.

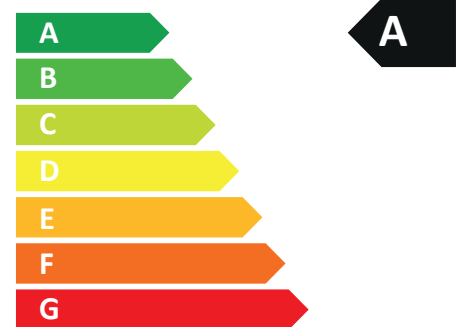
Although this business area has been set up quite recently, efforts are already underway to increase the energy efficiency of buildings in the town of Šaľa and to carry out an energy audit for enterprises of MSM engineering holding companies. More and more projects relating to energy savings and audits are also being implemented, including the development of education centres, the service and industry sectors, etc.

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Are you looking for the most energy efficient products on the market?

Did you know that the least energy efficient household appliances (white goods) available on the market are labelled A+ and A and that lower energy classes cannot be placed on the market at all? On the other hand, energy classes A and A+ indicate the most energy efficient vacuum cleaners, televisions or light sources. In addition, some energy classes indicated on the energy label cannot even be introduced on the market. Recently, energy



labels for range hoods, professional refrigerators, freezers and other types of products have been introduced.

As a consequence, the European Commission has drafted and presented new energy labels which should unify the range of energy classes into groups ranging from A to G. However, these labels will not appear in shops until the end of this year. Therefore, since 2003 the www.uspornespotrebice.cz web portal lists the currently most energy efficient models that meet the criteria and are available on the Czech market.

A new feature this year is the range hood category. Range hoods are subject to legislation on energy labelling and can be ranked according to their energy performance or according to the efficiency of fat filtration, air flow and illuminance.

You can learn more about energy efficient appliances and products at

www.uspornespotrebice.cz

[usporne spotrebice.cz](http://www.uspornespotrebice.cz)



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Education towards nZEB



One of the key tasks for the current building sector is to attract and retain skilled and knowledgeable workers so that top innovations can be developed and applied in the fields of energy efficiency and renewable energy sources. These days, a comprehensive approach to energy issues as well as to ensuring the efficiency of sources (throughout the whole lifecycle of buildings) is required. At present, three projects are being carried out which deal with improving the professional skills of on-site workers. This article introduces the current activities of the ingRES project aiming primarily at engineers.

The ingREs project implements the Roadmap measures developed under the Build-Up Skills initiative. The goal of the project is to develop and introduce a system of further education which would lead to the development of the skills and knowledge of building professionals with medium-level and higher qualifications. The project involves partners from the Czech Republic, Slovakia and Austria who will try to ensure that the objectives of EU 2020 are met. The objectives relate to increasing energy efficiency and the use of energy from renewable sources.

The main task of the system of further education is to develop five education and training programmes for building professionals establishing a permanent network of trainers providing training programmes developed under this project. It also aims to propose financing for measures that increase the motivation of professionals to participate in education programmes and the motivation of small- and medium-sized enterprises to invest in further education. The education and training will be aimed at the following professions: architect/planner, site manager, technical supervision of the investor, sustainability counsellor and assessor of the achieved energy efficiency of the building.

At present, specific training requirements for the training programmes are being completed. For every profession training results have been defined. An **architect/planner** must have an overview of materials which are used to increase the energy efficiency of buildings and should also be able to describe the impact of these materials on energy efficiency. In addition, a trained architect/planner must be able to elaborate an example of a proposal of energy gained from grey water, must understand the regulations relating to building materials increasing energy efficiency, must be able to explain the potential of the heat recovery system and how the shape and location of a building can influence its internal environment. Finally, the architect/planner can use a digital model of a building to identify individual building elements and information relevant for the planning phase.

After the completion of the training programme, a **site manager** will have acquired the skills to define BIM-modules (Building Information Modelling modules) ensuring the exchange of information and coordination and will also be able to give practical examples of management measures ensuring the use of technology according to technological standards. Last but not least, the trained site manager will be able to identify and explain defects in compliance with the requirements for materials and technological processes.

Sustainability counsellor is another still quite rare profession in the Czech Republic. A sustainability counsellor must be able to:

- enumerate and explain the criteria of preliminary assessment and prove the preliminary assessment of sustainability by means of practical examples;
- explain criteria for the ecological, economic, technical and process quality of the project as well as criteria for the quality of the project location; and
- describe the method of parameters verification on the basis of preliminary assessment, etc.

Specialists focusing on **technical supervision** must be able to

- provide a list of materials and their level of energy efficiency and sustainable development;
- explain the qualities of fastening technologies;
- provide and explain the model of quality assurance, including proposals relating to measures for controlling the quality and encouraging the quality assurance under construction;
- determine the advantages of various options and decisions based on input/output analysis and provide practical examples;
- determine the advantages of construction products in terms of efficient use of OZE and achievement of higher energy efficiency in buildings;
- explain the key aspects of equipment installation relevant for the use of OZE in buildings, etc.



The **assessor of the achieved energy efficiency of the building** will acquire the following skills and abilities:

- to explain the rules of non-residential buildings certification;
- to provide an example of how technologies influence each other;
- to explain thermal insulation properties of the solutions applied to increase energy efficiency;
- to understand the legislation and standards relating to the certification of buildings;
- to define the calculation model for residential buildings;
- to specify the impact that the building envelope has on the energy efficiency of the technical equipment of buildings;
- to explain the principles of guaranteed energy services or the use of renewables in buildings, etc.

Each training programme in the Czech Republic and Slovakia will conclude with an exam and each specialist will gain a certificate. The project will last 36 months and will be completed in 2018.

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LED Tubes: A Substitute for Linear Fluorescent...

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market. Lastly, clear plastic types and less directional milky diffuser plastic types of LEDs are also on offer.

LED tubes are available in various types of power and luminous flux. Yet, one should be aware of the fact that the luminous flux is, in principle, much lower than with linear fluorescent lamps. The approximate values of LED tubes available on the market are listed in the table below.

	Input power (W)	Luminous flux (lm)
T8 / G13 Lin. fluorescent lamp	18	1,300
60 cm LED tube	8–9	900–1,000
T8 / G13 Lin. fluorescent lamp	36	3,300
120 cm LED tube	16–20	1,600–2,000
T8 / G13 Lin. fluorescent lamp	58	5,200
150 cm LED tube	20–27	2,400–2,900

Substitute for linear fluorescent lamps

How can luminous flux be replaced with approximately half of luminous flux? The substitute principle lies in the direct light of light emitting diodes. The light of LED tubes is less reflected in the luminaire and gives the illumination effect in the desired direction. Nevertheless, this substitute is far from flawless, since the existing luminaires were originally designed for linear fluorescent lamps. As a result, such a considerable change of light source might cause deterioration in the quality of illuminance. The main factors are the original luminaire and the new LED tube. However, it can often be observed that illuminance uniformity has decreased. In other words, a light fixture with a LED tube illuminates the space under the lamp more than it does the space out to the sides. The producers of LED tubes are well aware of this weakness and try to increase the beam angle (today up to 160°) and also offer milky tubes with more diffuse light.

Linear fluorescent lamps use ballasts modifying the power supply – either a high-frequency electronic ballast or an electromagnetic ballast with a starter. LED tubes have their own integrated ballast and, as a rule, at least a small modification of the original wiring is needed.

The first types of LED tubes required complete removal of the ballast and new wiring of the LED tube, which often caused safety and guarantee problems. Nowadays,

most models with electromagnetic ballasts with a starter (EM) require only wiring of the so-called LED starter. Modern LED tubes designed for electronic ballasts (HF) can be replaced without any further modification.

Testing the substitute and measuring

For the purpose of this article, a simple test was carried out. A linear fluorescent lamp T8 (120 cm) was substituted for two types of LED tubes (16 W / 1,840 lm and 20 W / 1,700 lm). This test included indicative measurement of illuminance in the network of points in the office. The substitute of the linear fluorescent lamp for a LED tube was smooth and simple. The result of the measurement indicated a slight decrease of illuminance (approx. 15–20% in contrast to a 36 W linear fluorescent lamp). Interestingly, the uniformity was only slightly decreased.

Economy

The economic advantage of the substitute is determined primarily by the cost of electricity, LED tubes and operating time. The payback periods in model-based calculations have shown that the annual operating time is the most important aspect when assessing the economic advantages of a favourable and cost-effective substitute, particularly with operating time exceeding 4,000 hours per year. Theoretically, the cost savings are negligible due to the three to four times longer lifespan of LED tubes. The cost savings may become considerable only in case of household use, as the retail price of linear fluorescent lamps is very high. It should also be noted that the payback calculation only refers to T8 linear fluorescent lamps, while a longer payback period is expected for more energy saving T5 lamps.

When can LED tubes be recommended?

Substituting ordinary luminaires is clearly very simple. They are replaced with milky LED tubes with a beam angle greater than 150°. Only slight changes of illuminance are expected. In terms of economy, LED tubes can be recommended for two types of spaces: households and other premises with a significant annual operating time (more than 4,000 hours per year, e.g. workshops and garages), and industrial spaces with considerable annual usage, so that the sub-



stitution of lamps would not endanger the comfort and safety of operation. Such spaces can be corridors, outside lighting, technical and cooling spaces (linear fluorescent lamps give less illumination effect in winter) and the like.

Apart from illuminance and uniformity, it is highly important to comply with the standard requirements when using LED tubes in commercial and industrial spaces. It is also necessary to bear in mind the limiting glare rates as well as the change of the maintenance plan.

Substitution for LED tubes may increase the risk of glare, which can be a limiting factor for some operations. A longer lifespan of light-emitting diodes also influences the maintenance plan and may affect the originally designed maintained illuminance. If LED tubes are considered for use in commercial and industrial spaces, a thorough test (involving measuring before and after installation) should be carried out. It is often easier to perform a complete modernisation of illuminance, especially for professional use.

The replacement of T8 linear fluorescent lamp should be considered in the following cases:

- Outdoor lighting or lighting in cool spaces
- Regardless of standard requirements
- The light is on often or all the time
- Expensive electricity
- Good condition of the current fluorescent luminaires (complete modernisation is not needed)
- High price of linear fluorescent lamps
- Classic and common types of luminaires
- No approval procedure by regional hygiene services is needed
- A luminaire with difficult access

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Modernisation of Heat Supply in the Sklady Hodonín Business Park

The modernisation of production and heat distribution in a business park in Hodonín (Sklady Hodonín s.r.o.) is an interesting example of an energy efficiency project which has been successfully implemented. The business park was established on the premises of a former tobacco production (Tabačka) that operated in Hodonín for more than 200 years. After the last owner left in 2006, the premises were sold to a new owner, who now leases it as offices and storage space as well as for production and service purposes. In comparison with the enormous heat consumption during the era of tobacco production, the consumption has decreased and the original infrastructure for heat production and distribution has been totally inadequate. Old heavy fuel oil steam boilers had too large capacity and low efficiency, which led to huge losses.

When deciding on how to modernise the heat production system, a central and decentralised method were both considered. Both methods allow the application of either a pure heating system or cogeneration (CHP). A new source with a cogeneration



unit using natural gas was assessed as the most appropriate solution. It involves the construction of a new hot water distribution system.

The project was carried out in 2014 and involves a cogeneration unit with the capacity of 520 kWe/535 kWt and four 320 kWt gas boilers for peaking and as stand-by. The cogeneration unit will be operated mainly during the heating period and thus will complement electricity generation on photovoltaic panels which were installed on the roofs of buildings in the previous years. Thanks to this project the park gained a modern and efficient electricity and heat



source, which will help ensure reasonable energy prices for individual users.

This modernization project of heat source and distribution also gained an investment subsidy from the previous operational programme EKO-energie. The project was designed and carried out with the help of the European Go Eco project - Energy concepts of business parks. Eight countries participated in this project, with each country focusing on one particular industrial or business site.

For more information go to: » go-eco.info

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Biogas Plant Supplies Heat to Industrial Park in Písek

Heat supplied to an industrial park in Písek from a biogas plant (BGP) is an example of good practice in the field of industrial parks.

This BGP has an output of 1,189 kWe and 1,177 kWt and was built by Smart BioEnergy s.r.o. in 2012. In contrast to most biogas plants, which generate electricity while the heat is wasted, the chief concern of Smart BioEnergy s.r.o. was recovery of the heat generated.

The original plan was to establish a plant to process biodegradable municipal waste and provide the city with heat. This plan, however, was not approved. Nevertheless, se-

veral companies in the Písek industrial park expressed an interest in taking heat from the plant. As a result, the plant was eventually designed to agricultural substrates (such as maize and grass silage, manure and slurry).

Heat sales during the winter months is currently about 25% of the available heat and thus has failed to meet initial expectations. The insufficient exploiting of the heat potential may be partially caused by distrust and reluctance on the part of potential

customers as well as a lack of incentives.

The situation would have been much more favourable had the biogas plant been built concurrently with the industrial park. As things stand, only a few enterprises with hot-water heating can be technically connected. Other companies have already invested in gas-fired air heaters, so the subsequent transition to hot water would have a long payback. Nevertheless, further extension of heat supply is in preparation. The uniqueness of the project lies in the fact that out of hundreds of biogas plants is in the top ten in terms of effective heat exploitation. In addition, this biogas plant is probably the only one to supply heat to an industrial park.

To find out more about the history of this project, go to

» <http://biom.cz/cz/odborne-clanky/biopllynova-stanice-dodava-teplo-podnikum-v-prumyslove-zone>

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eceee welcomes new and reelected board members



At the eceee General Assembly in Copenhagen, eceee members elected Ms Isabelle Vincent from Ademe,

France, as a new board member for Ademe, and Mr Cédric Jeanneret from SIG, Switzerland, as an alternate member for individuals.

According to eceee's bylaws, a third of eceee's board members are up for re-election every year, to be elected for a three-year period. At the General Assembly in Copenhagen this morning, the following board members were elected.

- Peter Bach, Danish Energy Agency (re-elected)
- Agneta Persson, WSP Sweden (re-elected, as individual members)
- Juraj Krivošík, SEVEn, Czech Republic (re-elected)

- Isabelle Vincent, Ademe, replacing outgoing board member Didier Bosseboeuf, Ademe.
- Cédric Jeanneret, SIG, Switzerland (alternate for individual members, replacing Marianne Osterkorn.)

To see all eceee's board members:

» www.eceee.org/about-eceee/governance/board

To see eceee's adopted annual activity report and annual financial report, please go here » www.eceee.org/about-eceee/governance/bylaws.

SEVEn is a member of eceee and serves as its member of the board of directors

» www.eceee.org/all-news/news/news-2015/2015-12-11d

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Professional Cooling...

» continued from page 1

Identifying these models is not always easy. Only a few of them are subject to binding legislation and thus to energy labels or requirements for minimum energy efficiency, which would compel producers to make comparable information processed on the basis of common methodology and technical standards more accessible. The criteria for individual models and information requirements for particular categories of products have therefore been published on the project website. In December 2015, a competition was launched for the most energy efficient models, which will lead to further promotion of the chosen models. Producers and suppliers can register their models on the project websites indicated below.

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» www.uspornespotrebice.cz/komerzni-chladnicky

» www.pro-cold.eu



Common Energy Concept in Business Parks...

» continued from page 1

Such a coordinated approach calls for someone to take the lead, to suggest suitable solutions and to discuss them with other partners. This person might be the owner of the site who leases the premises, however he is often not interested or does not devote his time to the optimisation of energy services in the park. The position of a future energy supplier can also be performed by a company that already generates and distributes energy on the site for its own needs and is able to offer this service to others as well. Such cooperation might be impeded by a lack of trust between neighbours and their reluctance to share the sensitive data necessary for analysing the overall situation and proposed measures. Finally, the energy for the site can be supplied by an external company in the neighbourhood having spare capacity. However, promising solutions may get side-tracked due to reluctance to collaborate.

A feasible solution, therefore, might be accepting the role of coordinator by a third party, such as an independent consultant with no particular interests in the park. It should be a company with expertise in energy sector which is not limited to technical measures. The most important thing is to assess and propose solutions that comply

with the national policy and thus can get investment and/or operational support.

From the technical point of view, centralised heat and electricity supply within the site is the most promising measure. The main advantage lies in the fact that a modern central source of a sufficient size is highly suitable for efficient installation and operation of combined heat and power (CHP), which would be far more difficult with decentralised heat and electricity generation. Modern hot water distribution systems have acceptable heat losses. Furthermore, a suitable project comprising a CHP source and establishing or extending a system of district heating may obtain an investment subsidy from the Operational Programme Enterprise and Innovation for Competitiveness (OPEIC). A specific call aimed especially at supporting effective district heating systems has been opened at the beginning of 2016.

This issue of our newsletter brings you two good practice examples that have been recently implemented: the modernisation of heat supply in the Sklady Hodonín business park and the heat supply from a biogas plant to the industrial park in Písek.

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Market Surveillance and Energy Efficient Products: The EEPLIANT European Project



The European legislation requires that energy labels be published for many groups of products and also defines the lowest energy efficiency of products entering the European market. The legislation wants to protect consumers and their money, as well as the environment.

As the information specified on energy labels is provided by the producers themselves, every EU member state has

established an institution to inspect these requirements. To increase efficiency and to exchange experiences in the area of market surveillance, the EEPLIANT project was launched this year. The only partners of the project are the surveillance institutions of a few EU states. The project aims mainly at testing of LED bulbs, printers, boilers and combined water tanks with a maximum output of 400 kW. The project also verifies

that their energy consumption is in accordance with the legislative requirements. All information about the project activities is available on the project's website and Twitter profile:

» www.twitter.com/eepliant

» www.eepliant.eu

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The latest publications of SEVEN



Transparense Final Publishable report



Explosive development of LED lamps in households and the end of mercury vapour lamps



European Code of Conduct for Energy Performance Contracting (EPC)



Market survey: Energy label display in shops

Publications available for download:
in English » <http://www.svn.cz/en/news-and-media/publications>
in Czech » <http://www.svn.cz/cs/novinky-a-media/informacni-materialy>

Conferences



goEco
energy concepts for business parks

International Conference:
goEco – Energy Savings in Business Parks

http://go-eco.info/wp-content/uploads/2015/09/150901_Agenda_goEco_conference.pdf



Transparense presented
at the European Utility Week 2015

www.transparense.eu/uk/news/european-utility-week-uk

News at SEVEN is produced in English and Czech by SEVEN, The Energy Efficiency Center. SEVEN strives to promote energy efficiency in order to support economic development and protect the environment. The newsletter informs about current energy efficiency events and developments in the Czech Republic and EU and welcomes outside submissions. SEVEN is located at Americká 17, 120 00 Praha 2, Czech Republic. Editor: Jiří Karásek (jiri.karasek@svn.cz), 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: www.svn.cz. ISSN 1213 - 5844. Graphic design Pavel Cindr. ISSN 1213 - 5844. MK ČR E 13241.



The Prague office consumes PREKO certified energy,
contributing to the development of projects supporting environmental protection.



STŘEDISKO PRO EFEKTIVNÍ VYUŽÍVÁNÍ ENERGIE, o.p.s.
THE ENERGY EFFICIENCY CENTER



SEVEN holds the ČSN EN ISO 9001:2008 and 14001:2004
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