News at SEVEn

Energy efficiency news from the Czech Republic and EU



Green Savings 2009—2012: Results and conclusionsy

Under the Kyoto Protocol for the period of 2008–2012, the Czech Republic achieved an assumed emissions surplus of about 150 million tons of CO2 eq. (resp. AAU, Assigned Amount Units). About 100 million AAU units could be traded under the international emission trading mechanism. The main goal of the Green Savings Programme (financed from the revenues of the Czech Republic for this emission surplus) was to support selected energy efficiency measures implemented in residential buildings. These measures will lead to an immediate reduction of CO₂ emissions and will kick-start a longterm trend of sustainable construction. The State Environmental Fund of the Czech Republic has been entrusted with the management of the Green Savings Programme. The article provides information about the outcome of verification of CO₂ reduction for the Annual Report of the programme Green Savings in 2013.



Verification of CO2 reduction was carried out under this programme. CO2 reduction has been achieved by implementing the Green Savings Programme based upon the applications registered, approved and paid until 31 December 2013 across assisted areas. The calculations of CO₂ reduction were provided by the State Environmental Fund of the Czech Republic (SEF), according to a validated calculation method devised for the calculation of CO2 reduction under the

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The number of European Code of Conduct for EPC signatories is growing

Energy Performance Contracting (EPC) is an energy service that allows clients to save energy without capital costs as the investments are repaid directly from the saved energy costs. There is great potential for EPC projects in the EU, but most of it is not utilised. The European Code of Conduct for Energy Performance Contracting (the "Code") is a set of values and principles that are considered fundamental for the successful, professional and transparent implementation of EPC projects in Europe.

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New publication: Deep Renovation of **Buildings** — Subsidies for enveloping combined with Energy



Performance Contracting (EPC)

The new publication contains practical guidance for implementing projects combining subsidised measures regarding the thermal insulation of building envelope with technological measures carried out through the EPC method. Successfully implemented projects in the Czech Republic have proven that this combination bears a high potential for investors and can bring considerable energy and costs savings.



A more detailed description of the project implementation is also available in the final report of the European project CombinES co-financed from ERDF sources. The main goal of the project was to deliver a solution for better and wider use of combined financing of energy efficient programmes. As the EPC method is generally suitable for financing energy efficiency measures with short and middle payback periods, additional financing from subsidy schemes will also enable measures with a longer rate of return to be financed. This will result in support for a significantly higher number of projects related to energy efficiency from limited public resources.

The publication and other outputs of the project are available on the project website: >> www.combines-ce.eu

Jana Szomolányiová, jana.szomolanyiova@svn.cz







Education towards nZEB is back on track

The abbreviation nZEB stands for nearly Zero Energy Building. A lot has been written about this kind of building, but far more attention should be given to their actual implementation and quality. Many of these buildings remain only on paper. The article describes activities which are currently being devised to improve the construction of low energy buildings.

Barriers to nZEB

Unfortunately, there are still barriers to the practical implementation of high-quality and functional nZEB buildings. The most serious barrier is the lack of a unified system of construction management, as the management has been divided between several ministries. Other barriers to practical nZEB implementation include poor coordination of construction works, low quality construction management, insufficient quality control (quality of work and output), lack of experts for building operation and management, and inadequate interdisciplinary education and training.

To remove these barriers, it is desirable to establish education and training centres, a suitable structure of education programmes or long-term training programmes for on-site workers, building professionals and the general public. Another goal is to resume the activities of the National Qualification Platform (NQP), whose aim is to unify organisations involved in education and training of on-site workers.

nZEB buildings clearly have a profound influence on energy consumption. What should these buildings look like? How do they work and how are they built? How can high quality be achieved at construction sites? A pair of start-up projects, ingREeS and Train-to-nZEB, aim to answer these questions. Both projects want to raise awareness, disseminate knowledge and teach various target groups about nZEB construction.

ingREes

The ingREeS project, whose participants are the Czech Republic, Slovakia and Austria, was initiated in February 2015 and is a follow -up to the BUILD UP Skills project. Its main goal is to develop five education and training programmes for building professionals establishing a permanent network of trainers providing training programmes developed under the project. It also aims to propose financing for measures that increase the motivation of professionals to participate in education programmes and to invest in further education. In addition, proposals have been discussed that encourage the demand for highly qualified professionals and achieve financial agreements regarding the use of ESF and dissemination of training programmes.

Train-to-nZEB: The Building Knowledge Hubs

The Train-to-nZEB project was launched in June 2015 and brings together professional organisations from Bulgaria, Romania, the Czech Republic, Turkey, Ireland, Germany and Ukraine. The target is to create a functioning network of training and consultation centres to provide training courses and comprehensive consultation services for on-site workers and highly qualified professionals who focus on implementing nZEB. In addition, new programmes are being planned for a larger professional audience, such as officers, managers, NGOs, consumer groups and the media, with a focus on improving knowledge and increasing the demand for nZEB projects. Building Knowledge Hubs (BKH) will establish a group of professionals concerned with the implementation of quality nZEB projects.

Pursuant to the legislation, since 2020 all newly constructed buildings should be built according to nZEB standards. Therefore, education, training and improving the professional skills of construction workers is highly desirable. Four newly established training centres in Europe will provide various training courses and about 3,690 people should attend these courses and improve their professional skills and qualifications. All this will contribute to the project implementation of nZEB buildings.











Explosive development of LED lamps in households

The recent completion of the sale of conventional reflector light bulbs has raised a broad debate on quality, price and light bulb substitution. After a few years, the enormous development of LED lamps for households has significantly exceeded initial expectations and makes the substitution of lamps easier.

Until very recently, LED lamps designed for households (LED bulbs) were too expensive for the average consumer. The typical price for an LED bulb was upwards of CZK 600. While initial economic predictions suggested that the price of LED bulbs would halve in 2016, in reality many LED bulbs that can substitute for 40-75W bulbs can be found in shops today for as little as CZK 100-250. As can be seen, the speed of the price decrease has accelerated significantly.

The sheer range of LED lamps is also surprising. Originally there was just one type of LED lamp which emitted light to one side only and therefore provided little illumination. Substituting a conventional bulb for a LED bulb was thus quite problematic. Today, manufacturers offer a number of lamps which emit light in all directions, just like conventional lamps. Design LED bulbs are also available on the market now and are becoming more and more popular. Visually, they look a lot like light bulbs and contain surface or strips of light emitting diodes in the bulb so the diodes may easily be confused with a conventional light bulb.

Not only have the prices and design of LED bulbs exceeded initial expectations, but LED bulbs with higher efficacy are offered every year. A few years ago a relatively strict energy efficiency class A++ was set up and seemed to be unattainable. However, several

products of this class are now available on the market, as A++ has become quite common. In addition, it can be assumed that the efficacy will continue to increase and that performance above 100 lm/W will not be unusual.

Nevertheless, the explosive development of LED bulbs does not automatically mean that buying a new LED bulb will guarantee high-quality and long-lasting illumination. The boom in LED bulbs has brought about an unconsolidated market with a wide range of quality. A set of basic criteria can help when choosing a quality LED bulb:

- sufficient information about lamps at the point of sale,
- lifespan over 25,000 hours,
- no less than 25,000 switching cycles,
- colour temperatures 2,700-3,200 K,
- colour rendering of minimum 80 and
- energy class at least A+.

All these details have to be stated on the lamp packaging. Customers should pay special attention when they find extremely low priced LED bulbs. It is also advisable to choose the right bulb according to tests such as Premiumlight or dTest.

Unfortunately, not many types of LED bulbs can fully substitute 100W light bulbs. For bulbs over 100W it is still advisable to opt for a compact lamp.

Michal Staša, michal.stasa@svn.cz







The end of mercury vapour lamps

In April 2015, a prohibition on placing mercury vapour lamps on the EU market came into effect. The prohibition did not raise any interest of media, public and just a little interest of professionals.

Mercury vapour lamps, which have a higher efficacy and longer lifespan than light bulbs, were one of the first types of discharge lamp to spread all over the world. But as the light created by mercury vapour lamps is not of sufficient quality, they were used primarily for lighting large spaces (street lighting and industry) after World War II. From the end of the 1950s, Tesla was involved in the production of mercury vapour lamps in Czechoslovakia. Even today, the sharp green-blue light of vapour lamp can be seen in some villages and factory halls.



The withdrawal of vapour lamps and of direct high-pressure sodium lamps from the market was pushed through by European Regulation No. 245/2009. As a consequence, the need emerged to replace luminaires and to modernise long-standing and obsolete lighting. The aim of Regulation No. 245/2009 is to improve lighting efficacy in commerce and industry. The prohibition of vapour lamps is hardly noticeable in the Czech Republic, as vapour lamps account for only about 4% of street lighting, as opposed to the relatively high percentage in Germany or Sweden. Primarily energy companies using obsolete lighting systems should consider replacing vapour lamps, giving them a good opportunity to reduce their operating costs





Preparing rules for the Operational Programme — Environment and possible links with the EPC method

Rules for providing subsidies from the Operational Programme – Environment (OPE) are presently being finalised. The programme focuses on energy efficiency, particularly in priority axis 5 "Energy Savings". Subsidies for thermal insulation of building envelopes and, if needed, other energy efficiency measures will be provided under this priority axis. It is desirable to combine the renovation of technological devices in premises with the EPC method.

The aim is to financially support energy efficiency measures in buildings, e.g. energy enveloping and window replacement. In addition, the subsidy might involve exchange of heat sources using fossil, solid or liquid fuels or exchange of electricity. The programming document states that besides providing subsidised activities, proper use of the heating system will be required as well as renovation pertaining to HVAC, heat sources and regulation systems. These measures with a shorter return on investment should be realised by means of the EPC method (Energy Performance Contracting) as this approach enables "deep" renovation. However, despite now being in its second year of the programme period 2014-2020, the rules for providing the subsidies in combination with EPC have not been finalised yet.

At first it was assumed that the subsidies for relevant energy efficiency measures would be distributed in much the same way as the previous programming period. The only changes would be in the amount of the subsidy provided and other factors relating to the payment of the subsidy. The original plan was to replace the system of plain provision of subsidy with a financial instrument that was already being prepared in 2014. As this instrument was prepared more quickly than expected, the financial instruments for priority axis 5 will be set up and launched directly, omitting the transitional period. It is anticipated that the first applicants may request a subsidy at the beginning of 2016.

The subsidy will likely be a combination of financial aid (probably 50% from the costs eligible for the implementation of the project) and provision of soft loans for the rest of eligible costs. However, the rules will only be finalised and published in the first half of 2015.

Wladimír Sochor and Jana Szomolányiová, jana.szomolanyiova@svn.cz

European Commission proposes revisions to energy labels



In July this year, the European Commission submitted a proposal for the revision of legislation on the labelling of energy efficiency products. The objective is to ensure that customers are able to make better informed choices that will help them save energy and money.

Therefore, the Commission proposes:

- 1. A single energy labelling scale from A to G for all products: this will provide easier orientation for customers and greater motivation to choose energy efficient models.
- 2. Implementation of a digital database for new energy efficient products: all new products placed on the EU market are to be registered in an Internet database allowing greater transparency and surveillance by the national authorities of the member states.

The new system is expected to bring additional energy savings equal to the annual energy consumption of the Baltic countries combined (200 TWh per year in 2030, or approximately 17 million tons of oil equivalent per year in the consumption of electricity). Consumers are expected to save a further €15 per year outside the scope of the existing legislation. In addition, according to the proposal, the changes in the labelling of energy efficient consumer appliances are expected to lead to an overall revenue increase for manufacturers and retailers of over €10 billion per year.

Legislation on energy labelling already covers 11 product groups including dishwashers, washing machines, drum dryers, refrigerators, vacuum cleaners, lights, lamps, televisions, kitchen appliances, household appliances and air-conditioning and ventilation units.

As part of its activities and experiences, SEVEn supports the mentioned changes and regards these as unique support for the effort for the increase the competitiveness of the European and Czech economies, as well as protecting customers and the environment.

- Detailed information: http://europa.eu/rapid/ press-release_MEMO-15-5350_cs.htm
- Juraj Krivošík, juraj.krivosik@svn.cz

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The number of European Code of Conduct for EPC...

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The European Code of Conduct for EPC has been developed as part of the Transparense Intelligent Energy Europe project in cooperation with EPC providers, clients, facilitators and ESCO associations, among others. It is endorsed by the two organisations representing ESCOs at the European level - eu.ESCO and EFIEES - who significantly contributed with their comments to the final wording of the Code.

The Code has been generally welcomed by market players in all 20 participating European countries There are currently 166 signatories, of which 128 are EPC providers del. It already has been successfully used in introducing clients to the EPC concept and is perceived by providers as a unique selling proposition. However, the key to success is that EPC providers understand that they will benefit from adhering to a set of rules for the EPC business due to an increase in trust on the client side and a resulting increase in demand for EPC projects.

For clients, the Code functions as an EPC quality indicator on what they should expect and require from EPC providers and which principles they themselves should adhere to in order to achieve expected





and 11 national associations gathering all together 142 EPC providers. There are also 27 EPC facilitators and other signatories. Until now, the Code's greatest success was reported by the Dutch Transparense partner ECN from the National ESCO conference in Amsterdam, during which 21 ESCOs and 12 other market players signed the Code.

The Code of Conduct serves as harmonised European quality requirements for EPC projects. The Code's key message is that EPC represents a fair energy service business moenergy savings and related benefits. It can be used by governments, being key EPC clients, as minimum requirements for the EPC projects conducted on their property.

The Code is a voluntary commitment and is not legally binding. That is why it is important to implement its principles within EPC contracts and tender dossiers. Thus the Code is especially useful in new EPC markets, such as Bulgaria and Poland, where the government will implement the Code in the first EPC model contracts and tender dossiers.

The Code is supported by the European Commission

"The European Code of Conduct for EPC defines common values and approaches for EPC providers and clients on a voluntary basis. It was designed in cooperation with relevant stakeholders and endorsed by the European Association of Energy Service Companies (eu.Esco) and the European Federation of **Intelligent Energy Efficiency Services** (EFIEES). Against this background, it has the potential to further enhance transparency and market confidence in EPC as an important means to tackle the energy efficiency challenge."



Björn Zapfel, EC, EASME

You can download the European Code of Conduct for EPC and the simple signing form at the Transparense project website » www.transparense.eu.

Jana Szomolányiová, code@svn.cz

The Code of Conduct consists of a set of nine guiding principles

on EPC project implementation to support the high quality and transparency of European EPC markets. The principles can be briefly summarised as follows:

- 1. The EPC provider delivers economically efficient savings
- 2. The EPC provider takes over the performance risks
- 3. Savings are guaranteed by the EPC provider and determined by M&V
- 4. The EPC provider supports long-term use of energy management
- 5. The relationship between the EPC provider and the client is long-term, fair and transparent
- 6. All steps in the process of the EPC project are conducted lawfully and with integrity
- 7. The EPC provider supports client financing EPC projects
- 8. The EPC provider ensures qualified staff for EPC project implementation
- 9. The EPC provider focuses on high quality and care in all phases of project implementation

NEWS at SEVEn 1/2015

Setting out a certification system applied to ESCOs in the Czech Republic

Directive No. 2012/27/EU of the European Parliament and Council includes a recommendation to Member States that they should implement systems of qualification, accreditation and certification in the areas of energy services provision, energy management and installation of energy related building elements. The certification system relating to companies providing energy services in the Czech Republic is being prepared and its implementation is expected in late 2015 or 2016.



The main goal of the certification system for companies providing energy services is to support and develop energy service companies (ESCOs) and to standardise the level at which these services are provided. In addition, the certification system aims to link the system to the regulation of public tenders and thus support the public sector and increase energy efficiency.

In 2014, the Chamber of Deputies submitted a draft to amend Energy Mana-

gement Act No. 406/2000 Coll. The draft assumes that according to Section 10 (f) of the aforementioned Act, the Ministry of Industry and Trade will establish and maintain a list of energy services providers and will define basic terms and conditions for registration and erasure from the list. It is assumed that the draft of the Energy Management Act will be approved prior to the publication of this article. It will be the first partial step leading to the establishment of a certification system for energy services providers. Establishing such a system will require further legislative changes which will help embed the system institutionally. The system should be established by late 2015 or 2016.

The Ministry of Industry and Trade already has a basic draft of the certification

system relating to ESCOs. Apart from that, a certifying authority will be established which will, under certain circumstances, issue or withhold certifications. An administrator of the certification system will be appointed to provide and ensure formal and organisational issues of certification as well as training in energy services.

Another activity of this area is the report "Recommendation for certifying the quality of EPC services." The report is being prepared under the European project Transparense. At the time of publishing this article the final version can be found at www. transparense.eu.





Half of products do not have the correct energy label, as proven by the inspection of shops offering electric appliances

Half the products in European shops offering electrical devices do not have the correct energy label, as proven by the wide ranging inspection of shops conducted in the first half of the year by the consortium of partners for the MarketWatch project. Our partners visited 20 shops in the Czech Republic and 243 shops in 11 EU countries to check the presence of energy labels on more than 30,000 products.

"One in five demonstrated products did not have an energy label at all, a further two in five products had a damaged or incorrectly located label while 3% had the label for another model," revealed Juraj Krivošík, Director of SEVEn, Střediska pro efektivní využívání energie, o.p.s., which within the MarketWatch project is the main organiser of the programme for monitoring shops.

At the same time, approximately 500

products were found in shops that European legislation considers are energy inefficient. "These were mainly obsolete vacuum cleaners, ordinary light bulbs, inefficient dryers and air conditioning," stated Juraj Krivošík, who pointed out: "Even bigger offenders were found in online shops where only one -third of the products were correctly labelled with the energy label or other required information".

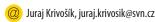
The consortium of partners visited specialized electrical shops, hypermarkets, kitchen studios, etc. each shop was informed of the results of the survey as well as the national supervision bodies.

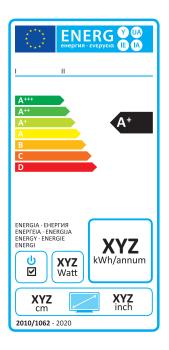
Part of the MarketWatch project includes the testing of 120 product models where energy consumption and other operating properties are measured in selected laboratories. The test results will be available on the project website 39 www.market-watch.eu.



A summary of the results of the visits to shops is available in English at:

www.market-watch.eu/2015/07/23/2rr/





640 hours of watching TV: The results of testing & verification by the ComplianTV project



On 3 September 2015, the ComplianTV project will present the results of its TV testing and energy label display monitoring activities.

The ComplianTV project was designed to organise large-scale TV testing for the EU Energy Label and Ecodesign Directives compliance and retailer monitoring of the energy label display for televisions

Ten partners from around the EU, including three testing laboratories, have teamed up to verify the compliance of TVs with energy efficiency requirements and manufacturer claims, and to monitor information availability at points of sale. It is now possible to learn more about the results of the 160 TV model tests, the results of visits to 100 brick and mortar stores and 100 e-shops for the label display monitoring, and the overall project lessons learned and recommendations towards the proper implementation of the legislative requirements for televisions.

If interested, please register for the project's final event to be held in Brussels: >> http://tiny.cc/

- >>> More information about the project: www.compliantv.eu
- Juraj Krivošík, juraj.krivosik@svn.cz



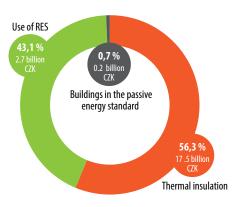
Green Savings 2009—2012: Results and conclusions

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Green Savings Programme. The calculation method was validated in spring 2010 by an external independent entity, Det Norske Veritas. According to the Annual Report of the Green Savings Programme in 2013, the total number of applications registered under the programme was 74,117. In total, 80,696 projects were registered by the end of 2013 and the overall disbursed subsidy of applications registered by 31 December 2013 exceeded CZK 20.29 billion. The figure below shows the distribution of subsidies in particular regions.

The total presumed reduction of CO_2 in 2013 reached almost 800,000 tons per year. In total, 73,916 applications were paid by the end of the year.

Distribution of subsidies (in CZK and in %) with registered applications for particular regions



Source: Annual Report of the Green Savings Programme in 2013

By 31 December 2014, most of the projects under the Green Savings Programme 2009–2012 already had been provided with the subsidy. The only projects discussed in 2014 (a few hundred projects still remaining) were those which showed some technical or administrative defects. According to the information provided by the SEF, all these projects were completed in 2014.



Our experience with the implementation of the Green Savings Programme has shown that this programme was a new impetus for the development of further energy efficiency projects in the field of residential buildings. The Programme led to an immediate CO₂ reduction and kick-started a long-term trend of sustainable construction. It was also a crucially important and effective instrument for achieving national energy efficiency targets, according to the respective EU directives, e.g. Directive on Energy Efficiency 2012/27/EU.

Miroslav Honzík and Jiří Karásek jiri.karasek@svn.cz



Energy efficient ice cream

Professional cooling products, such as the ones that cool, refrigerate or freeze food and beverages in professional premises, from public and office buildings, to hotels, restaurants, retailers and canteens, are not yet subject to the EU energy label and ecodesign regulations. It is therefore difficult for procurers to select and demand models which are energy efficient.

This is why the ProCold project was initiated (in association with the Topten programme) to help identify professional cold products based on their energy efficiency performance.

The ProCold project will help to ensure that consumers can enjoy ice cream and other food and beverages being kept cold or frozen in an energy efficient and environmentally friendly way.

>>> More information: www.topten.eu

Juraj Krivošík, juraj.krivosik@svn.cz

Directive on Energy Efficiency: Introduction of an alternative scheme across Europe

Pursuant to Directive No. 2012/27/EU of the European Parliament on energy efficiency (EED), a requirement has been laid down to generate savings in the final consumption of 1.5% per year. The Czech Republic has chosen an alternative scheme that aims to generate the required energy savings through programmes that promote energy efficiency. In contrast to other European countries, the portfolio of policy measures is rather narrow. What other ways are there to widen the scope of policy measures to promote energy efficiency and fulfil

In comparison with other European countries, the Czech Republic has chosen an alternative scheme and a portfolio of policy measures focused primarily on measures concerning subsidies in the building sector. The current delay in energy savings generated by new operational programmes, a lower achieved allocation of programmes and modifications in the project structure within particular programmes are responsible for the assumption that the savings achieved in their final energy consumption will be lower than expected. The savings might be increased by jump-starting programmes that promote the subsidies defined in the National Action Plan on Energy Efficiency. Another way would be to widen the portfolio of policy measures and possibly greater involvement of energy suppliers.

the objectives of the Directive by 2020?

A range of issues needs to be considered while choosing possible solutions defined by Article 7 of the Directive:

- Choosing a scheme for the period starting in 2017 – involvement of the state and energy suppliers
- Choosing policy measures, e.g. subsidies, training, information campaigns, etc.
- The importance of support for training towards nearly zero-energy buildings or towards "deep renovation"
- Setting of new national targets relating to energy savings pursuant to Article 7 EED
- Methodological questions, assessment of the issue regarding double counting of savings as well as the additionality and materiality of such measures

A study on the alternative scheme across Europe will be carried out under the EFEKT

programme (Ministry of Industry and Trade) in 2015. The main objective of the study is to introduce other possibilities of the alternative scheme as stated in recitals a – f of Article 7 for the next period, which will start in 2017. This can lead to an increase in the impact and diversification of policy measures.

The results of the study will be reflected in an analysis of the alternative scheme across European countries and particularly in the proposals for reinforcing the role of the alternative scheme in the Czech Republic by means of widened measures for the period starting in 2017. Examples from other countries could have a positive impact on areas where reporting of savings in final energy consumption (FEC) is neglected, e.g. in employee training or possibly labelling of appliances.

Jiří Karásek, jiri.karasek@svn.cz

The latest publication of SEVEn







Combining subsidies for insulation of buildings in the state administration with FPC



How to choose the best lighting for hotels and restaurants



MarketWatch brochure



Publication within the European RE-CO project



ATLETE II: Verification of energy consumption in automatic washing machines



Energy labels for TVs: What information should consumers know when buying?

News at SEVEn

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