News at SEVEn

Energy efficiency news from the Czech Republic and EU

volume 24 number 1/17 June 2017

New Training Centre for nZEB

A training centre for nearly zero energy buildings (nZEB) was ceremonially opened on March 2017 in the premises of the American Bar Foundation (ABF) at a conference held with foreign participants, who toured the centre and its unique equipment. The centre will be available to all training course participants.

Opening conference

EU Member States have committed to building only nZEB from 2021 onwards. This has had a major influence on the construction industry and people working in the sector, who need to acquire new knowledge and skills. The increase in the number of nZEB and their share in the building fund should improve energy efficiency while reducing the impact of buildings on the environment.

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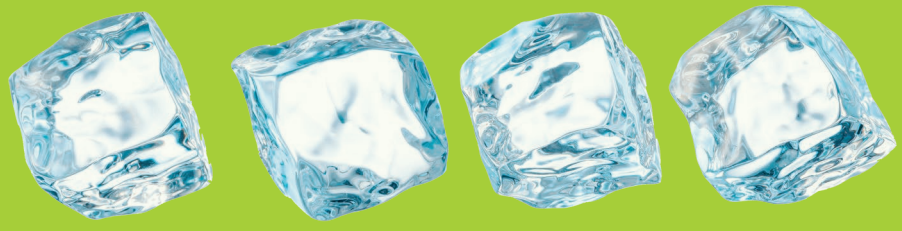

European Regulation of Refrigerants for Commercial Refrigerators

The European project ProCold promotes energy efficient commercial refrigerating appliances as well as products dealing solely with climate-friendly refrigerants. EU Member States have committed themselves to a gradual regulation of substances essential for cooling. From 2022 onwards, climate-friendly refrigerants with low global warming potential will be available for use.

Twenty years ago almost all countries in the world committed themselves to restrict the use of ozone depletion substances. By virtue of its scope and

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Wind Energy Development Would Employ Thousands of Workers

In recent decades there have been huge efforts to increase the use of renewable energy sources (RES) for electric power generation, as these are believed to be an environmentally friendly alternative to nuclear and thermal power plants. RES also includes wind energy, which seems to have great potential for use in the Czech Republic and offers new opportunities, especially for industrial companies and job creation.

There used to be a state subsidy for the operation of wind power plants in the Czech Republic, but this was scrapped. By 2016, 184 wind power plants had been built

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Sheep Wool Building Insulation

SEVEn participated in a project aiming to introduce sheep wool as insulation material for buildings in Mongolia. SEVEn's main tasks and activities included model energy audits of particular building types, organising a study trip of Mongolian experts to the Czech Republic and Austria, and training of Mongolian energy auditors.

The project called „Turning Sheep Wool into Environmentally Friendly Building Material – Integrated Approach for Supply Chain Development" was financed by the European Commission under the SWITCH programme – Asia, Promoting Sustainable Consumption and Production. The project was led by the Czech non-profit organisation People in Need through its Mongolian branch and other Mongolian partners – the National Association of Mongolian Agricultural Cooperatives (NAMAC) and the Mongolian Nature and Environment Consortium (MNEC).

The initial situation

The heating season in Mongolia lasts for eight months (from mid-September to mid-May). In the winter months (from December to February) average temperatures range between -20 °C and -40 °C; there are around 6 200 degree days. The energy demand needed for heating the buildings is very high due to climatic conditions and insufficient thermal insulation. Calculations have shown that the annual energy consumption is more than 600 kWh/m^2 for panel buildings, more than 400 kWh/m^2 for brick residential houses, and more than 300 kWh/m^2 for family houses (including new buildings). In most cases, thermal renovation is based on imported polystyrene or mineral wool. However, sheep wool might function as an effective, sustainable, environmentally friendly and domestically produced substitute.

Apart from houses, improved thermal insulation can also be used in traditional dwellings called yurts (ger in Mongolian). In Ulaanbaatar alone there are around 100,000 yurts and their energy performance is very poor – one layer of felt means approximately 670 kWh/m^2, two layers of felt make around 490 kWh/m^2. The yurt still remains the most affordable type of dwelling used predominantly by migrants coming from the country to towns. Although most of these people plan to build a house within five years, these houses are typically very simple constructions designed and built with the help of relatives or friends from the cheapest materials and with minimum insulation. They are typically heated by ovens using solid fuels, which causes heavy pollution in yurt villages as well as in the whole city.

Thermal renovation of a family house in an Ulaanbaatar suburb and a traditional yurt at the same place

Model energy audits

In order to quantify the benefits of thermal renovation when using sheep wool, model energy audits were elaborated by the end of 2013 for selected building types. In cooperation with the local branche of People in Need, the following five typical buildings types were chosen which have a significant presence in Mongolia: a pre-cast concrete (panel) apartment building; a brick apartment building; a brick school building; a single family wooden house and a single family house with a combined wooden and brick structure.

Energy balances were based on calculated energy consumption both for the designed renovation as well as for the existing state, as data on real historic consumption were missing (consumption is often not measured at all).

Designs of the outer wall insulation and roof (attic) insulation were carried out for all assessed buildings and cellar ceiling insulation and replacement of windows were designed for both apartment buildings, too. The costs of these measures as well as energy prices for heating were considered on the level corresponding to current Mongolian conditions. Thanks to a significant reduction of heat consumption to less than half of the current level for family houses and to a mere quarter of the current consumption for apartment buildings, the measures can be paid back within 5–13 years despite relatively low heat prices. At the same time, current subsidised energy prices will continue to rise.

Given the high number of Mongolian buildings of the same type, thermal renovation with the use of sheep wool has a vast potential for energy savings. This potential can be fulfilled by using locally produced building materials. Four pilot cases were carried out under this project: thermal renovation of an existing small family house, insulation of new and bigger family houses in Ulaanbaatar and Erdenet, and thermal renovation of a nursery school in Darkhan.

Training courses for energy auditors

A three-day training seminar designed for Mongolian experts in the field of energy audits was organised in June 2015 in Ulaanbaatar by the Mongolian branch of People in Need in cooperation with the Mongolian Construction Development Centre. SEVEn and two of its employees were responsible for the training programme. The lectures covered energy regulations for buildings and the main topic was how to conduct an energy audit and prepare an energy performance certificate. A specific building was chosen as an example to demonstrate various solutions.

By the end of 2015 the Act on Energy Efficiency was adopted. As a consequence, the Department of Energy established a commission for energy savings, which is responsible for training energy auditors. At the beginning, the commission focused on larger companies whose annual energy consumption exceeds a certain limit. Energy savings should be achieved with the help of energy auditors who will be trained and will receive a certification. Two kinds of specialisation will be established: energy auditors for companies (energy systems in plants) and for buildings.

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Participants of the energy auditor training

Energy Poor Households and Measures to Reduce Their Number

The issue of energy poverty is now frequently discussed in the Czech Republic and in all of Europe. A recent study defines energy poverty as a situation when households are not able to adequately heat their homes or meet other required household energy services at an affordable cost.[1] Energy poverty is caused by far more factors in comparison with general poverty. Therefore, energy poverty is not easy to monitor and eliminate.

If no solutions are sought, energy poverty can have a serious impact on inhabitants and their state of health and living standard. A household often falls into the energy poor category even though it is not a low-income household or a household of extraordinarily high energy expenditures. In addition, members of a household are often ignorant of the term „energy poverty“ and lack information about their potential entitlement to aid. There is also hidden energy poverty, where a household is not heated to an adequate level or does not use other energy services, and thus tries to artificially reduce energy expenditures.

On the one hand, energy poverty is caused by high energy costs, which are dependent on many indicators: the thermal-technical parameters of buildings, energy prices, etc. On the other hand, energy poverty largely depends on household income. As can be seen, energy poverty brings together several different spheres of the State. As a result, it is highly demanding to work out a single supporting programme that would effectively eliminate energy poverty.

So far, only a few countries in Western Europe (e.g. Great Britain and France) have tackled the issue of energy poverty. For some time, the European Commission has been trying to motivate the Member States to implement a state policy to address energy poverty. An information portal is being established to provide information relating to energy poverty. The portal will be created under the EU project Energy Poverty Observatory and will involve a functional network of experts and programme measures against energy poverty implemented in each EU country.

The study called Measures Against Energy Poverty in the Czech Republic (carried out by SEVEn for the Ministry of Industry and Trade) has come to the conclusion that 16% of households in the Czech Republic are energy poor, i.e. some 650,000 households. The most vulnerable are low-income households: single-person households, elderly households, single-income households, etc. Direct financial benefits covering at least part of energy expenditures seems to be the most effective solution. At the same time, improving the building stock would be much more effective in the long term. All in all, a combination of various support measures will be needed in order to reduce energy poverty.

The study offers the following programmes: subsidy programme for households in crisis, a loan programme to implement the measures, an individual approach programme, and a programme that motivates owners to improve the thermal-technical parameters of their homes.

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[1] Selecting Indicators to Measure Energy Poverty. Final Report. K. Rademaekers et al, 2016.

How to Choose an Energy Efficient Household Appliance?

An energy label is a simple indicator of energy consumption when choosing a household appliance. It is a label with colour classes referring to the energy efficiency of an appliance. An energy class is a simple (but not the only) indicator of energy efficiency. However, other criteria relevant for making a choice should be considered as well.

Energy labelling has been established by the EU to indicate energy consumption of household as well as professional appliances. At present, energy labels are going through certain changes of both content and graphic layout.

In fact, energy labelling forces producers to develop more efficient appliances. As a consequence of gradual development, some categories of appliances have reached the higher end of the scale and only classes A+ to A+++ are available. When choosing an appliance, customers must look at the infographics to avoid buying the least efficient appliance by mistake.

Energy efficiency indicated on energy labels is relative to the size of the appliance, which can be both an advantage and a disadvantage. In fact, an energy class indicates the energy efficiency of appliances varying in size or capacity, meaning that a larger refrigerator has higher consumption than a smaller one, but both appliances can fall into energy class A+++. It follows that size and capacity have to be considered first when choosing an appliance. The customer should choose a television that fits in his or her flat, the size of a refrigerator, dishwasher and washing machine should be chosen analogously depending on the number of household members, etc.

There are many evaluation parameters of household appliances and they keep changing. If you are looking for a really energy efficient appliance that will reduce your energy bills you may find the following site useful: » www.uspornespotrebice.cz. There you can find a list of the most energy efficient appliances available on the Czech market, listed according to transparent and non-commercial technical criteria. The list is updated at regular intervals and apart from common appliance categories (refrigerators, freezers, washing machines, dishwashers) you can also find range hoods, vacuum cleaners, printers and lamps.

For more information go to:
» www.uspornespotrebice.cz

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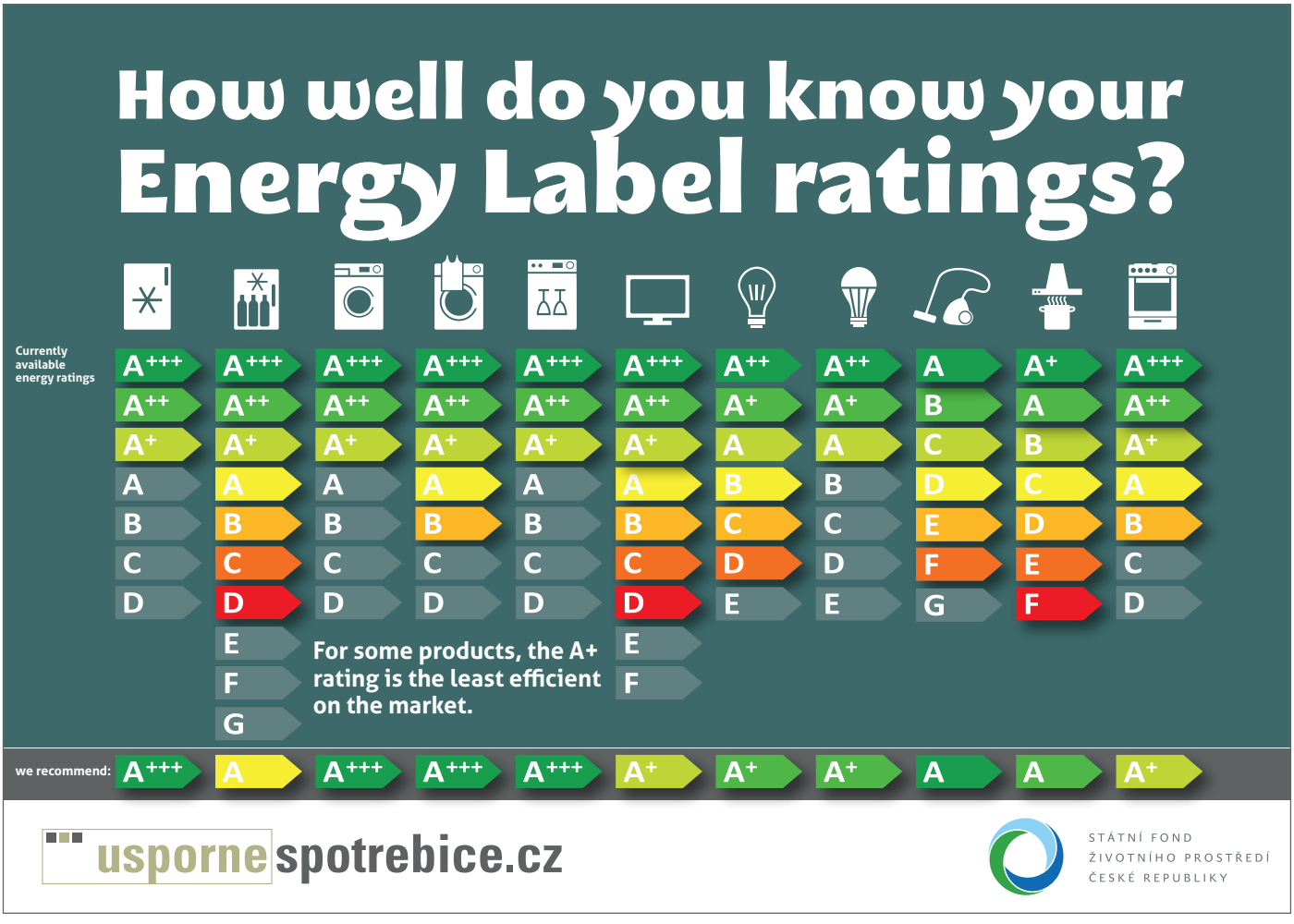

Wind Energy Development Would Employ Thousands of Workers

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here. The first wind power plants were built as early as 1993. The total installed capacity of wind power plants is 282.91 MW. The capacities of various power plants range from 0.1 to 3.0 MW. In 2015, wind power plants generated 572 GWh of electricity, accounting for approximately 1% of the electricity consumed in the Czech Republic. Total electricity consumption in the Czech Republic was 58.16 TWh in 2015.

Employment in the wind energy sector

Using a conservative method, SEVEn has carried out a study which defines the approximate number of jobs in the wind power sector. The study focuses on component manufacturing, the preparation phase of the building and installation of wind power plants, and operation of wind power plants.

Seven industrial companies clearly active in the field of wind power plant component manufacturing were identified. The calculation revealed that 629 employees work in this field. However, the real number of employees in this area in the Czech Republic is probably higher.

Employment in the preparation phase of the building and installation of wind power plants (WPP) is largely dependent on the number of WPP installations that have actually been carried out, also as regards architectural and structural design and building preparation. According to a rough estimate from 2015, the preparation phase of the building of new WPP included only 20 jobs.

The information obtained reveals that supervising one WPP operation creates approximately 1.6 direct jobs. About 294 full-time employees work in the current operation of all 184 WPP in the Czech Republic.

In total, the wind power plant sector employed approximately 943 employees in 2015.

The number of jobs has been modelled on three different scenarios of WPP development (labelled 1–3). An overview of scenarios for calculation and their parameters are given in the table below.

Two waves of repowering were taken into consideration when the number of jobs was identified. Repowering means gradual replacement of existing wind power plants (when their lifetime comes to an end) with new ones. The assumed lifetime is 25 years. The first wave of repowering will replace all 184 existing power plants while the second wave will commence in 2041 and will replace all WPP built after 2015.

If scenario 1 were fulfilled, 1,503 new jobs would be created in the Czech Republic. In total, the field of WPP would embrace 2,446 jobs in the Czech Republic.

The implementation of scenario 2 would create 2,441 new jobs in the Czech Republic, including those created as a consequence of both repowering waves. In total, the area of WPP would create 3,384 jobs in the Czech Republic.

Scenario 3 and its implementation would create 4,660 new jobs in the Czech Republic, including those created as a consequence of both repowering waves. In total, the area of WPP in the Czech Republic would create 5,603 jobs.

Conclusions

The increasing trend in the WPP sector can be seen in the size of the installed capacity in Europe and elsewhere in the world. The Czech Republic has great potential for the use of wind energy. However, this potential has not been fully exploited yet. The greatest obstacles are administrative barriers regarding the installation of WPP, obstacles resulting from regional energy policy as well as from the reluctance of regions to improve the WPP sector. There are also barriers deriving from poor public awareness, which undermines further development in the area of wind energy in the Czech Republic.

If any of the above-mentioned scenarios of wind energy development were put into practice, more than a thousand jobs would be created in the Czech Republic, approximately twice as many as the current number of WPP employees. The number of local jobs created should be an argument in support of the implementation of wind energy in cities, towns, municipalities or regions.

More information can be found in the following study » www.hnutiduha.cz/sites/default/files/publikace/2016/08/studie_pracovni_mista_z_vetrnych_elektraren_final.pdf.

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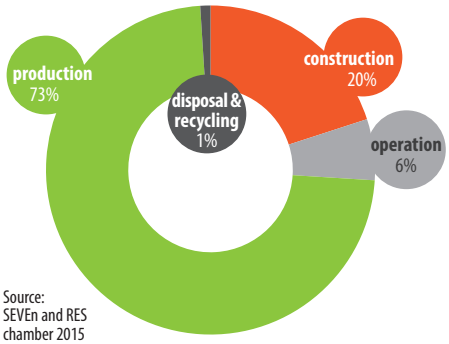
Proportion of lifecycle costs

of wind power plants – Production, construction, operation, disposal and recycling



Source: SEVEn and RES chamber 2015

Employment development

according to the WPP development scenarios

An overview of scenarios for alternative development of the number of jobs

Label	Scenario	Number of wind power plants VtE	Installed capacity MW	Electricity generation TWh	Target year
0	Current state	184	283	0.57	2015
1	Conservative scenario – possibly can be fulfilled within 10 years	500	1,500	4.73	2030
2	Conservative scenario	1,033	3,100	9.78	2050
3	Optimistic scenario	1,933	5,800	18.29	2050

Source: Study of the Department of Atmospheric Physics, Academy of Sciences in the Czech Republic, 2012 and study of the RES chamber, 2015

Frequently Asked Questions about the alleged LED Health Related Issues

The following questions and answers focus on the safety of light-emitting diodes (LED) and their blue components, which is a frequently discussed topic these days. The questions below are an abridged version of a document created by the LightingEurope association.

Is LED light dangerous because of the excessive production of blue light?

For given colour temperature LEDs do not produce more blue light than other kinds of lamps. The idea that blue light is dangerous is a sheer misunderstanding. When LED was first introduced, most products had cooler colour temperatures which were considered a constant and unalterable characteristic of LED. Nowadays LEDs are available in colours ranging from „warm white" to „daylight white" and are quite safe for the given scope of use. In terms of photobiological safety, light-emitting diodes do not differ from other light sources when compared with common lightbulbs or fluorescent lamps.

Additional information:

The optical safety of commonly used light sources is very important and is related to several safety standards and regulations: Directive 2001/95/EC of the European Parliament and of the Council on product safety and Directive 2014/35/EU of the European Parliament and of the Council on harmonisation of the laws of the Member States relating to electrical equipment and their availability on the market (within certain voltage limits). Another standard pertaining to this area is EN 62471 Photobiological safety of lamps and lighting systems. This standard divides lamps into risk levels 0, 1, 2 and 3 (0 = no risk, 3 = high risk). Common products for consumers are at level 0. The risk levels are determined according to evaluation criteria taking into account various exposure scenarios. The intensity of general lighting has been evaluated at 500 lx, which is a value common for offices, school buildings or industry. Other lamps are evaluated from a distance of 20 cm (e.g. professional lamps for projectors, solariums, industry, etc.).

After a thorough evaluation, a lamp is assigned its risk level, which entails certain requirements for labelling. Levels 0 and 1 do not require any special labels or other evaluation, while levels 2 and 3 require labels and information relevant for consumers.

Is it possible that after some time in service light-emitting diodes may become dangerous because of phosphor ageing processes?

The level of photobiological risk does not increase over a product's lifetime. A commonly used phosphor degrades in the course of time, but in practice the share of blue light is not increased.

Does blue light influence children more than adults?

A child's eye is generally more sensitive than an adult eye. Nevertheless, luminaires and lamps used in households, offices, shops and schools do not produce blue light levels that are intense and hazardous. This also holds for other kinds of lamps, e.g. linear or compact fluorescent lamps, halogen lightbulbs, etc.

Additional information:

A child's eye lens filters blue light less efficiently than an adult lens, which accounts for the fact that children are more sensitive to blue light. On the other hand, it is not necessary for children to avoid LED or blue light in general as the light intensity is quite low. It follows that even pure blue light is quite harmless regardless of the kind of lamp (LED, a fluorescent lamp or day light). For instance, blue light coming from an LED on a Christmas tree is not more hazardous than light radiating from any common blue lightbulb. However, children's perception of blue light is more intense and the light can be irritating. That should be taken into consideration when using high brightness blue LEDs.

What advice should be given to people who are highly sensitive to blue light?

LEDs do not produce more blue light for the given colour temperature than any other lamps. People sensitive to blue light should consult specialists.

Should there be any health concern when it comes to looking directly in an LED?

According to the Product Safety Directive, common lamps meant for consumers fall into the lowest risk category. Therefore these lamps do not involve any risk in normal use, regardless of the lamp used.

Additional information:

When evaluating photobiological risks, it is necessary to consider the most serious cases caused by looking directly in a lamp. In everyday life these situations are very rare. Nevertheless, respective standards were established in order to protect workers employed in the lighting industry, who may look into a lamp a few times a day, increasing the total exposure to several seconds. In such cases, blue light may play an essential role and can cause potential visual impairment.

Can the flickering and stroboscopic effect of an LED cause discomfort?

Lamps with a higher flicker rate or with stroboscopic effects are not considered quality lamps. Current standards do not define maximum permitted levels.

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Phase-out of Two-pin Compact Fluorescent Lamps

In April 2017 a new phase-out came into force regarding the placement of two-pin compact fluorescent lamps on the EU market, mainly as these lamps cannot be used with energy efficient electronic ballasts. The phase-out concerns only compact fluorescent lamps without integrated ballast and does not relate to compact fluorescent lamps designed for households.

On 4 April 2017, the ban started to apply to the placement of two-pin compact fluorescent lamps without integrated ballast on the EU market. The ban is a result of EU Regulation No. 245/2009 and supplemented with regulation 347/2010. In fact, the phase-out reacts to a requirement of the third phase of the regulation regarding the efficiency desired for compact fluorescent lamp ballasts. The energy efficiency of ballasts for compact fluorescent lamps must achieve at least A2 class. This condition is fulfilled only by electronic ballasts, which are not compatible with two-pin compact fluorescent lamps.

Two-pin compact fluorescent lamps without integrated ballast are typically used in downlights and in wall-mounted or flooded wall luminaires. However, the affected compact fluorescent lamps are normally not used in households. They should not be confused with common „energy saving bulbs“ with E27 or E14 sockets, which are not covered by this Regulation.

The ban on compact fluorescent lamps will gradually change the lighting systems or, at least, will replace individual luminaires. It can be assumed that wholesale stores will be frontloaded so the process of change will be gradual.

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Information on Energy Efficiency of Products Available for Customers in Shops

In order to choose the right product, customers have gotten used to checking energy labels on appliances. However, an energy label does not always offer exhaustive information on energy performance. For instance, not all energy classes displayed on a label are available on the market. In addition, more and more customers are using their smart phones and the internet in order to compare various models.

In order to increase customers‘ awareness, the Digi-Label project was launched. The project‘s goal is to help sellers provide customers with relevant information about appliances, to help them choose the most energy efficient products available on the market, reduce their energy bills, and protect the environment.

While existing energy labels provide information on the energy efficiency of products, the Digi-Label project offers additional information through an electronic tool. Sellers can thus support the sale of energy efficient products and can also send information about the real energy efficiency of products to customers‘ smartphones by using a QR code for appliances.

The Digi-Label tool enables customers to buy better products either in shops or online and these products will save them money for electricity. Obviously, if customers gain more information about products they will buy more appliances directly in shops.

Retailers participating in the pilot project organised in the Czech Republic, Germany, Italy, Spain and Great Britain will get an opportunity to actively support the development of a new tool that could complement the mandatory energy label and information sheet. The role of retailers would lie in giving feedback and recommendations on possible improvements of the tool. Current research clearly indicates that when choosing appliances in shops, customers tend to prefer energy efficient appliances. At the same time, however, they seem to have problems obtaining relevant information from current energy labels.

For more information go to:

» www.digi-label.com.

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European Regulation of Refrigerants for Commercial Refrigerators

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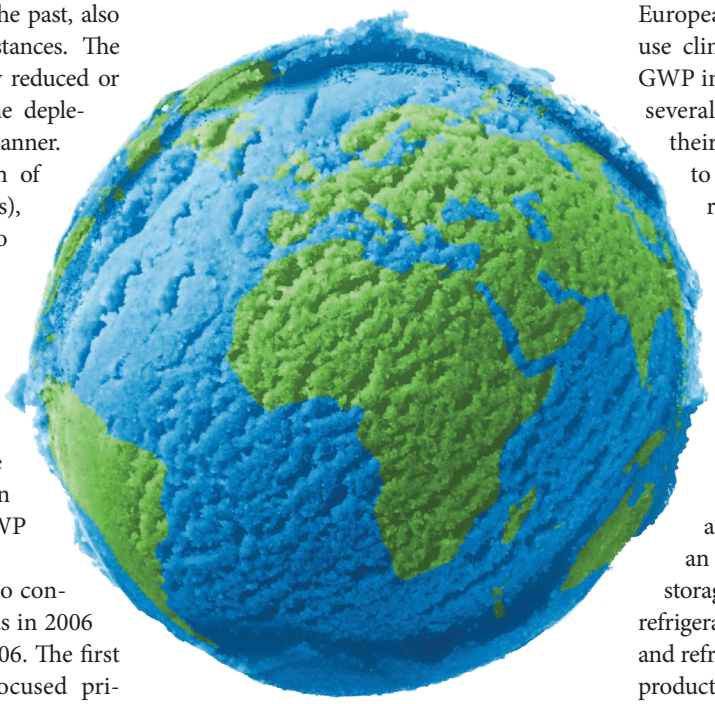
implementation, the Montreal Protocol is considered a unique example of international collaboration. Freons, which were used as refrigerants and solvents in the past, also belong among controlled substances. The Czech Republic has successfully reduced or even stopped using these ozone depleting substances in a significant manner. Another challenge is regulation of substances (e.g. perfluorocarbons), which significantly contribute to the global climate change caused by global warming. Perfluorocarbons belong among greenhouse gasses and their potential of global warming (PGW) is very high. These substances are also called F-gasses and involve the following substances often used as refrigerants: R134a (GWP 1300), R404A (GWP 3300).

EU Member States agreed to control perfluorocarbons as early as in 2006 by adopting Regulation 842/2006. The first perfluorocarbons regulation focused primarily on gas leakage and recycling. Today two regulations exist under the EU, one focusing on mobile air conditioning in cars (2006/40/ES) and the other pertaining to other areas of greenhouse gasses use (517/2014). The first regulation involves prohibition to use gases whose GWP is higher than 150. The second regulation is rather complex and entails a significant change in the field of industrial and commercial cooling. The crucial changes concern strict leakage checking, record-keeping and prohibition on the use of high GWP refrigerants.

The market offering commercial refrigerators and freezers lags behind household refrigerating appliances in the area of natural refrigerants use. Refrigerants with relatively low impact on the climate (GWP has to be less than 150 since 2015) are used for household refrigerators and freezers. Most often the refrigerants R600a or R290 are used. However, for commercial refrigerators this will not be required until 2022 and by 2020 all commercial refrigerating appliances must have refrigerants with GWP less than 2,500. Commercial refrigerating appliances with climate-friendly refrigerants are available in most sizes (except large open refrigerating chests and freezers). At present, neither Czech nor other European producers of refrigerating chests use climate-friendly refrigerants with low GWP in most cases. Nevertheless, there are several producers who gradually extend their range of products and are starting to use products with climate-friendly refrigerants. These producers should serve as a positive example.



The European project ProCold promotes energy efficient commercial refrigerating appliances using climate-friendly refrigerants which will be obligatory from 2022. One of the major tasks of this project is regular updating of the list of energy efficient commercial refrigerators and freezers available on the European market. The main categories include storage refrigerators and freezers, beverage refrigerators, minibars, wine refrigerators and refrigerator showcases. Any refrigerating product satisfying the transparency criteria can be added to the list of energy efficient commercial refrigerators and freezers.

The list of products is available at

» www.uspornespotrebice.cz/komercni-chladnicky

Information in English:

» www.topten.eu/english/pro-cold.html

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An Extensive Database of EU Countries Housing Fund

An extensive database of the building stock EU 28 was launched in November 2016. The database includes information and data on building envelope, certification, project funding, energy poverty and energy market. This database is no random or short-lived enterprise. On the contrary, it is planned to become a long-term activity of DG Energy, and the number of indicators (currently 250) will increase. While the database was being developed SEVEn was responsible for energy poverty and social issues.

More information can be found at » https://ec.europa.eu/energy/en/eubuildings

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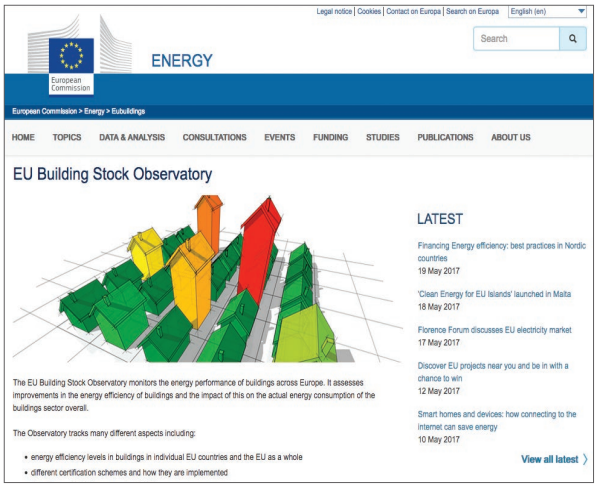

New Training Centre for nZEB

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Renowned Czech and foreign experts were invited to a conference entitled The Way Towards Nearly Zero Energy Buildings to present their ideas about nZEB. **Petr Kalaš**, the vice-president of the Czech Business Council for Sustainable Development, had a presentation on the influence of energy performance of buildings on the environment and also talked about the strategy of CO_2 reduction in accordance with the conclusions made at the Paris conference. The chairman of the ABF, **Jan Fibiger**, highlighted a programme called Building Industry 4.0 and its involvement in the Fourth Industrial Revolution, which also includes usage of innovative technologies in the building industry.

Horia Petran, a Romanian guest and an expert from URBAN-INCERC, discussed nZEB development in Romania, the national calculation of cost optimum, and presented training centres in Bucharest and Brasov. **Camille Sifferlen**, an education expert from the Passivhaus Institut in Germany, described five principles of passive houses. „The concept of a nearly zero energy building can be understood as a passive house with installed renewable energy sources," she said.

Jiří Karásek, a representative of SEVEn, introduced the plans and goals of the training centre as well as other activities of the Train-to-NZEB project in the Czech Republic. „In order to achieve real energy savings, the knowledge and skills of construction workers have to improve," Karásek said.

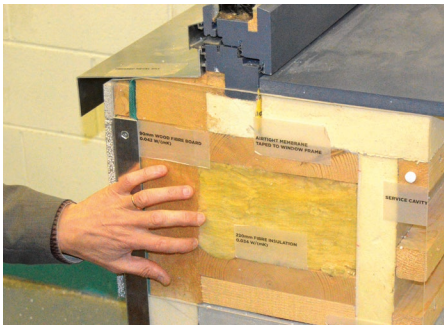
František Doktor from the Slovak company ViaEuropa presented nZEB as a significant business opportunity and explained the economic potential of nZEB for the building sector. The Chairman of the Board of Directors of SEVEn, **Jaroslav Maroušek**, held a presentation on the European as well as national definition of nZEB and explained the cost optimum principles. „Nearly zero energy buildings correspond to the cost optimum in the Czech Republic," he said.

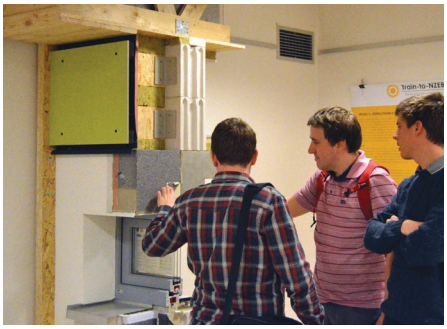
Training centre

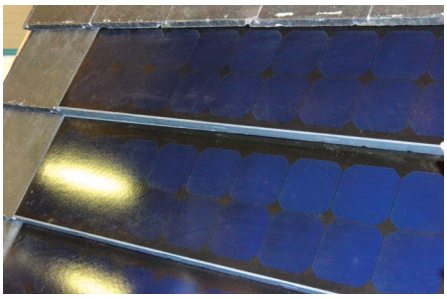
SEVEn, a company focusing on energy efficiency, has established a training centre in Prague designed for seminars, excursions and training courses. The centre is located on Wenceslas Square in the premises of the ABF and is part of an international network developed under the European project Train-to-NZEB.

The training centre is equipped with four unique detail models of building structures, representing construction details (from the bottom to the roof) carried out in high energy standard. The structure and materials used are very progressive and indicate the future direction of modern construction. Other equipment includes an air-conditioner with heat recovery, a blower-door test, two multi-purpose infrared cameras and a CO_2, temperature and humidity logger.

The training centre will serve as a venue for the practical part of educational courses complementing the theoretical preparation.







Course participants will broaden their theoretical knowledge as well as practical skills. The courses started in April 2017.

For more information about the project and programme go to:
www.train-to-nzeb.com and
www.buildup.eu/en/skills/about-build-skills

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Livestock Farming Contributes more than 14% to Global Greenhouse Gas Emissions

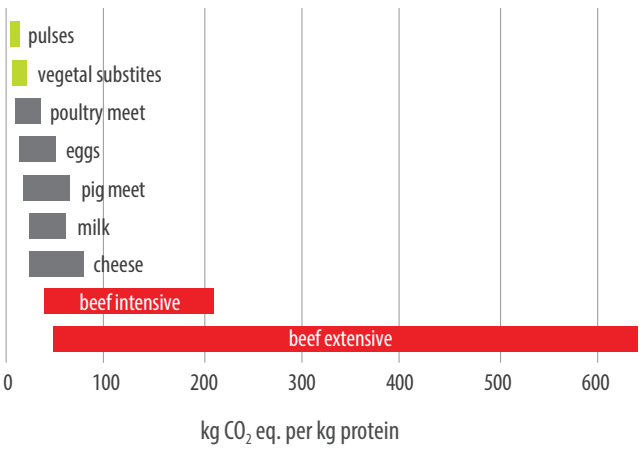
According to the Food and Agriculture Organisation (FAO) of the United Nations, livestock sector is responsible for 14.5% of global human-induced greenhouse gas emissions. Annually it accounts for 7.1 billion tons of CO_2 eq., which is roughly the same figure as transport emissions as calculated by the Intergovernmental Panel on Climate Change (IPCC) in 2014. While transport emissions continue to be a matter of keen political discussion and policy measures, initiatives supporting actions to reduce emissions from livestock are few and far between.

Detailed model calculations carried out by the FAO indicate significant differences in various categories of livestock in terms of their contribution to global emissions. Beef production accounts for 41% of global emissions from livestock farming, cow milk production accounts for 20%, while pork production contributes a „mere" 9% and poultry meat and egg production make up 8%. The good news is that despite its large share of greenhouse gas emissions, the livestock sector has great potential to reduce these emissions. This potential lies both in production and consumption. If the practices of 25% producers with lowest emission intensity were applied by all producers, the sector's total greenhouse gas emissions would be reduced by 18% (FAO 2013). Improving energy efficiency, feed quality and optimisation of the use of manure by methane capture and better husbandry and health management are among the most successful strategies.

The IPCC report (5th Assessment Report, IPCC 2014) states that possible demand-side measures regarding livestock products have a great potential to reduce greenhouse gas emissions. The results of several studies estimate that in 2050 this potential can be between 0.76–8.6 billion tCO_2 eq. per year. The picture shows that emissions can be reduced chiefly by replacing „high-emission" beef proteins with plant proteins and „low-emission" animals like poultry. The IPCC claims that this change would also positively influence people's health in countries with high consumption of animal proteins. However, social and cultural resistance is a barrier to changing consumer behaviour. Therefore, some pioneering initiatives have been launched whose goal is to introduce measures motivating people to consume low-emission products. For example, the Danish Council on Ethics, which advises the Danish government and public authorities on ethical issues, proposed to impose a beef tax (Danish Council on Ethics, 2016). Similarly, the Swedish Board of Agriculture proposed a differentiated tax on meat to be set up at the EU level. Naturally, a higher tax rate would be imposed on high-emission products.

These proposals were not approved and measures of a purely informational nature were adopted in several countries. In the future, however, increasing pressure to reduce greenhouse gas emissions and raise breeding standards for livestock can gradually increase the cost of eating meat and thus encourage consumers to switch to low-emission diets.

Carbon footprints per kilogram of protein



Source: The results of studies on lifecycle costs summed up in the study by Nijdam D., Rood T., Westhoek H. (2012) The price of protein: Review of land use and carbon footprints from lifecycle assessments of animal food products and their substitutes. Food Policy 37 (2012) 760–770

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Impacts of the New Public Procurement Act on the EPC Projects

A new Public Procurement Act No. 134/2016 Coll. came into effect on 1 October 2016, replacing the previous Act on Public Procurement No. 137/2006, Coll., which had been amended more than 20 times. While the new Public Procurement Act is hardly revolutionary, it introduces many partial novelties that can contribute to greater comfort in the area of public procurement and EPC project implementation.

The new Public Procurement Act **extends the possibilities of a negotiated procedure with prior notice** and amends its conditions in Sections 60–62. It is assumed that the concept of a negotiated procedure with prior notice will continue to be widely used due to the complexity of selecting providers of EPC projects within a public procurement procedure. A negotiated procedure with prior publication of a contract notice will allow investors to verify the supplier's experience, the quality of the services offered, the feasibility of proposed measures, the public procurement procedure, etc. At the same time, it is a transparent type of procurement procedure and final offers are submitted at the end.

In addition, the new Public Procurement Act enables greater flexibility to amend public procurement contracts for the duration of an EPC project under the conditions defined in the Act. Possible changes in concluded contracts have been transposed up to Section 100 (change of an obligation), Section 222 (change of an obligation from a contract to public procurement), and Section 66 (option right in the negotiated procedure without prior notice).

A model contract for EPC projects considering the new legislation and other information and educational material can be found on the webpage of the European project EPC+ (» http://czech.epcplus.org).

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New Website of the Premiumlight Pro Project

The international Premiumlight Pro project is aimed at promoting quality and energy efficient professional lighting (interior as well as street lighting) both in the private and public sector. The new web presentation offers the latest news in the area of lighting, invitations to various events in the Czech Republic and elsewhere in Europe, and all noteworthy project outputs, including criteria for choosing quality lighting, a manual for quality and energy efficient lighting, and a list of current educational events.

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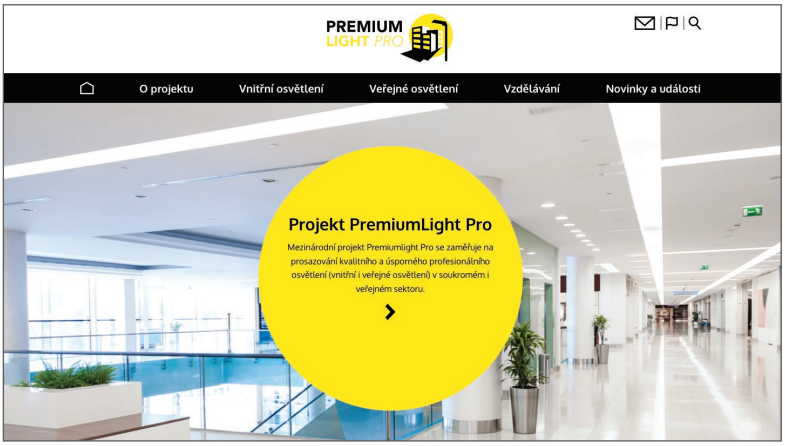

Number of Energy Performance projects increasing in the Czech Republic

Energy Performance Contracting (EPC) is an energy services model allowing the client to save energy without upfront capital expenditure, as the investments are repaid directly from the saved energy costs. EPC is one of the methods of improving energy efficiency included in the Energy Efficiency Directive (EED 2012/27/EU) and is considered one of the measures of the National Energy Efficiency Action Plan of the Czech Republic.

Energy Performance Contracting Plus

According to the Association of Energy Service Providers (APES), the year 2016 was very successful as far as using EPC in the Czech Republic is concerned. Although some obstacles occurred, nine new energy efficient projects using the EPC method were commissioned for CZK 259 million, thanks to which building owners will save CZK 41 million on energy every year. In total, savings of all active EPC projects in 2016 were CZK 300 million (calculated by APES), i.e. 12% more than in 2015.

The first EPC project in the Czech Republic was carried out as early as in 1993. In the last 24 years more than CZK 3 billion has been invested in energy efficient measures when implementing 220 EPC projects leading to energy savings of almost CZK 3.3 billion.

More information on EPC and its development on the Czech market can be found on the websites of the European EPC+ project (» http://czech.epcplus.org) and the APES Association (» www.apes.cz), which brings together the 27 most active providers of energy services in the Czech Republic.

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Checking on Energy Efficiency of Transformers and Fans

According to policies and legislation, verification of actual energy efficiency is one of the main conditions of real energy performance improvement. However, checks and tests carried out by surveillance authorities within EU countries focus mostly on products designed for household use, not for the industrial and service sectors.

Therefore, in 2016 the INTAS project was launched to ensure technical support and cooperation in organising the activities of market surveillance authorities and producers and suppliers of large appliances in the area of energy efficiency. INTAS will also focus on large industrial products and the monitoring of their compliance with energy efficiency requirements according to the European Ecodesign Directive. INTAS shall focus primarily on transformers and industrial fans.

The project is aimed at:

- support of market surveillance authorities in the field of regulatory compliance for large products;
- support of industrial companies and ensuring that they are aware of all their obligations according to the Ecodesign Directive and ensuring that industrial companies fulfil such obligations in a way accepted by market surveillance authorities;
- support of a common European approach to regulations and monitoring of regulatory compliance for certain products.

The organisers of the INTAS project have been analysing European and worldwide experiences of transformer and fan testing. The analyses focus on technical standards, procedures and measurement methods. At the same time, a process and methodology are laid down so the market surveillance authorities will be able to identify, select and verify the output of large industrial transformers and fans. The project partners will also promote cooperation between various national authorities in the area of market surveillance. They will also promote exchange of information between market participants, i.e. producers, distributors, customers and organisations responsible for market surveillance.

For more go to » www.intas-testing.eu.

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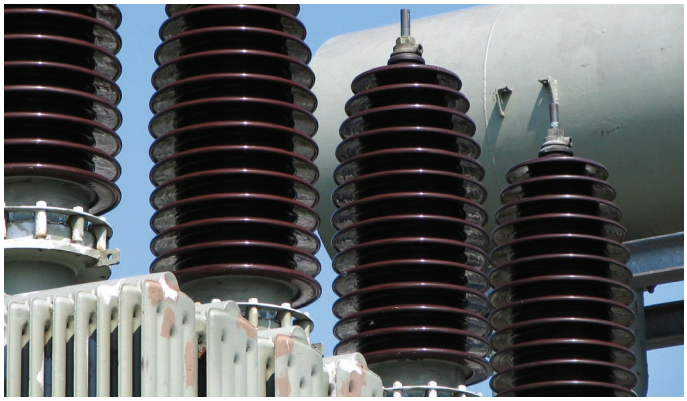

SEVEn and Changes of the Company's Legal Form

SEVEn was founded in the autumn of 1990 and has functioned ever since as an advisory organisation seeking and supporting opportunities for efficient energy use – promoting energy efficiency as a tool of environmental protection and economic development. Over its lifetime, SEVEn has changed its legal status several times in response to developments in national legislation. In 1999 the company began to function as a non-profit publicly beneficial organisation (o. p. s.) and in 2007 the limited liability company SEVEn Energy s.r.o. was established as well.

As the current legislation does not allow any further development or organisational changes of „o.p.s." organisations, SEVEn has changed its legal form and name to SEVEn, The Energy Efficiency Center, a registered institute. This change has not affected any of the organisation's contact information, staff or thematic focus of individual projects.

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