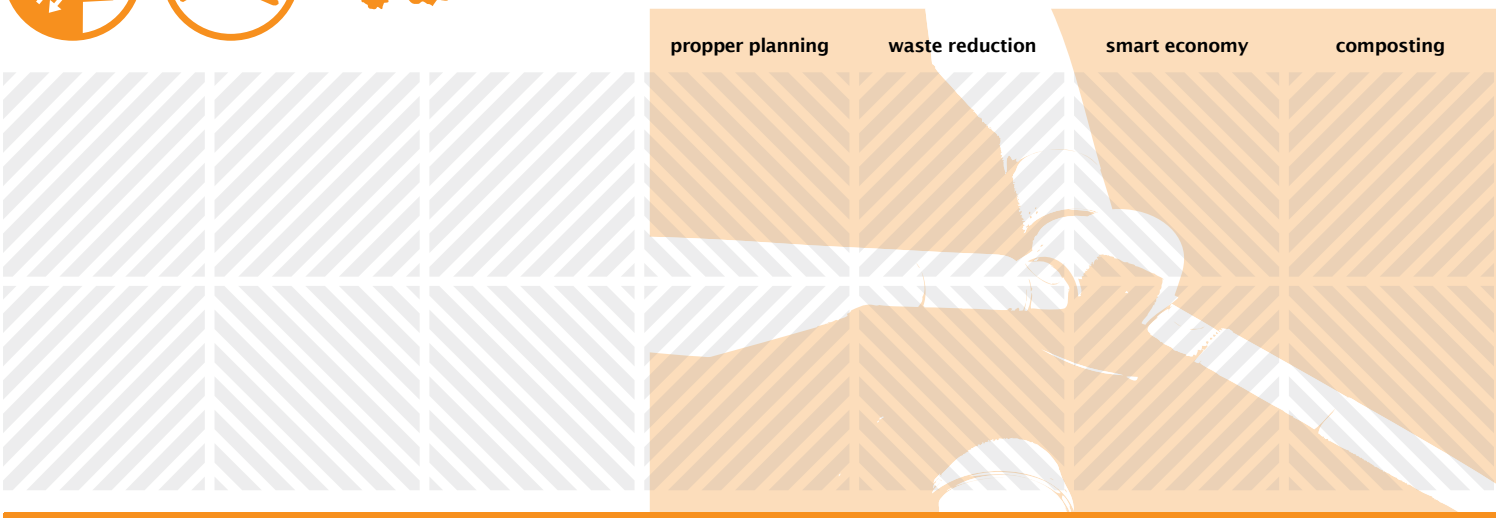

Czech Republic: Energy Efficiency and Renewable Sources

Position of CEE Bankwatch Network and the Zelený Kruh association of environmental non-governmental organizations

Recommendations

CEE Bankwatch Network and Zelený Kruh propose to:

- make energy efficiency one of the main thematic priorities for drawing EU Structural and Cohesion Funds (SCF) in the 2014 – 2020 period;
- invest at least CZK 10 billion[33] (EUR 40 million) per from EU Structural and Cohesion Funds into energy efficiency measures in private and public buildings, in tertiary sector buildings and in small and medium enterprises, as well as in use of renewable resources in buildings;
- support research, development and implementation of buildings technologies to achieve ambitious efficiency criteria before 2018, as a preparation of the Czech building industry for fulfilling the demands of the EPBD II Directive;
- set a horizontal principle for any new buildings funded from the SCF to achieve nearly zero-energy or higher standard, and all buildings reconstructed from EU funds to reach low-energy or higher standard. The projects that reach a better standard and involve the use of renewable resources in buildings should get priority support;
- create a portfolio of financial instruments, such as subsidies, soft loans, guarantees or risk insurance in order to support renewable energy production and energy savings in buildings and make them suitable and available to a wide range of beneficiaries, including local communities, cooperatives, small municipalities etc.

Problem outline

20 years after the start of economic transformation, the Czech Republic remains the fourth most energy intensive economy in the EU, even after recalculations on GDP by purchasing power parity[34]. Czech greenhouse gas emissions per capita also remain the fourth highest in the EU[35]. Two reasons for this can be traced: the strong orientation of the Czech economy towards industrial production, and traditionally low energy efficiency in buildings, industry and transport. Both households and public institutions face growing costs of fuels and energy – and this tendency can hardly be expected to change. High energy use together with the growing cost of energy is becoming a threat for Czech economic competitiveness.

Energy savings in the sector of buildings, including housing as well as public buildings, offers a great opportunity to lower both the energy intensity and energy dependency of the Czech Republic.

High energy efficiency criteria in public buildings can bring not only energy savings, but also air-quality improvements like in this case of reconstruction of elementary school in Praha-Slivenec where forced ventilation with recuperation improved conditions for pupils.

Photo: Aleš Brotánek

33 This figure is based on calculations of absorption capacity in energy efficiency retrofits under the current OP Environment and the Green Investment Scheme programme in 2009 – 2011. It corresponds to an estimate published by the industry association Šance pro budovy: (http://www.realit.cz/aktualita/sance-pro-budovy-nova-zelena-usporam-si-zaslouzi-vice-penez) as well as an estimate of absorption capacity by the Ministry of Environment (CZK 8 billion/year according to an oral presentation of Vice-Minister Tomáš Podivínský).

34 Eurostat: Energy intensity of the economy; http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tsdec360&language=en

35 European Environmental Agency: Greenhouse gas emissions as tonnes CO_2-equivalent per person http://www.eea.europa.eu/data-and-maps/figures/greenhouse-gas-emissions-as-tonnes

According to the Czech Energy Efficiency Action Plan[36], the main potential for energy savings lies in the housing sector, followed by industry and transport. A study by Porsenna[37] consulting company shows that 60 percent of energy in residential buildings can be saved. The highest energy efficiency potential lies in energy efficient retrofits of buildings to save energy on heating and hot water.

In the residential sector, both high energy losses and the poor state of the housing stock are a key problem. According to the Panel Scan 2009[38] study, 45 percent of the stock of pre-fab "panel" apartment buildings has been neglected; in other kinds of apartment buildings it is almost 88 percent. Reconstructions have not usually used the full potential for energy savings. In the case of panel buildings, only 34 percent of them have high quality new windows. A reconstruction can prolong the life-time of this sort of building from the originally projected 40 years up to an assumed 100 years.

Renewables have passed through turbulent periods in the Czech Republic, with feed-in tariffs, legislation, taxes and permitting processes changing rapidly. The current proposal in the State Energy Strategy,[39] still to be finalised by the government at the time of writing, neglects the development of the RES sector and suggests that from 2015, there should be no opperating financial support for RES. At the same time, the Czech Republic with a vibrant manufacturing industry of biomass boilers and wind and hydro turbines has very good potential for competitive innovations in RES technologies. Lack of national demand in this area strongly undermines the companies' possibilities to further develop their businesses.

European funds, an opportunity for the Czech economy

The thematic orientation of support from European Cohesion and Structural Funds in 2014-2020 will be driven by the Europe 2020 strategy,[40] with the draft EU funds regulation emphasising the common priorities and targets set by this policy. Choosing energy efficiency and renewables as one of the top priorities would open up a unique opportunity for the Czech Republic to fulfil several targets set in these strategies. Earmarking a substantial amount of finances from both the Cohesion Fund and ERDF for energy efficiency will bring jobs dispersed throughout the regions and net profit to the budget.[41]

High energy intensity in buildings goes hand in hand with the push to open new areas for carbon intensive lignite mining and for waste incineration instead of prevention.[42] Energy efficiency and renewables are the most prominent measures to be financed to achieve real decarbonisattion of the Czech economy.

Benefits of financing energy savings in the Czech Republic

Experience with the current Operational Programme Environment, priority axis 3 – Sustainable Use of Energy, the New Panel Programme and the Green Investment Scheme (GIS) shows that there is enormous interest in public financial support for energy efficiency measures in both private and public buildings. For example, the most recent call for projects distributing the last available resources in axis 3 of the OP Environment was opened in February 2012 and within only 2 days, the financial allocation for this call was oversubscribed. The total allocation has been used up almost two years before the end of the budget period, and the number of applications was significantly higher than financial possibilities of the programme. This success by the Ministry of the Environment is in great contrast with the utilisation of other operational programmes and axes.

Financing energy efficiency in buildings is also a very good measure to tackle the consequences of the financial crisis, namely in the building industry, which has recently faced a significant downturn. Due to public financial support, it is possible to mobilise private savings from households and use them to restart growth in the building sector and eco-innovation market. Miroslav Zámečník, a member of the Independent Governmental Committee on Economy, said about the Green Investment Scheme: "I dare to say, that from the perspective of multiplication effect, the effect of one invested crown for the whole of the national economy, we could hardly find a better proposal for anti-crisis measures."[43]

36 Národní akční plán energetické účinnosti do roku 2011 http://ec.europa.eu/ceskarepublika/pdf/press/ks6_cr_akcni_plan.pdf
37 Porsenna: Study on potential of energy savings in residential buildings by 2050. (in Czech) http://hnutiduha.cz/sites/default/files/publikace/typo3/uspory_obytne_budovy_final_v3.pdf
38 PanelScan 2009: Studie stavu bytového fondu panelové zástavby v ČR http://www.sfrb.cz/o-sfrb/pro-media.html?no_cache=1&cid=262&did=63&sechash=2e05d27b
39 Ministry of Industry and Trade: Aktualizace Státní energetické koncepce České republiky, 2012 http://download.mpo.cz/get/46568/52524/591180/priloha003.pdf
40 COM(2010) 2020 final: EUROPE 2020 - A strategy for smart, sustainable and inclusive growth http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF
41 Zámečník M., Lhoták, T.: Analýza ekonomického dopadu akcelerovaného zavádění kvalitních energetických standardů ve výstavbě rezidenčních budov v České republice, http://www.sanceprobudovy.cz/images/docs/miroslav_zamecnik-makroekonomicka_analyza_dopadu.pdf
42 City of Plzeň, for example, is currently considering a construction of Chotíkov waste incinerator as one of sources of heat in the city to cover a cut of supply from a heat plant turned to power generator.
43 Ekonom Miroslav Zámečník: Program Zelená úsporám prospěl zaměstnanosti, http://www.novinky.cz/kariera/222867-ekonom-miroslav-zamecnik-program-zelena-usporam-prospel-zamestnanosti.html

Miroslav Zámečník is also one of the authors of a study[44] which proved that the New Panel Programme helped within 9 years of its existence to keep 6500 jobs. According to the study, the GIS provided within its one and half years of existence 19 000 annual job equivalents. Most of these working places were created in small and medium-sized construction companies based in the Czech Republic. These jobs were evenly distributed within the regions, and were not concentrated in the big cities only.

The Czech Republic also lists energy savings as a goal of its energy policy in its official documents. The Second Energy Efficiency National Action Plan reads: "Maximising heat savings: high priority goal, aiming towards maximisation of the heat savings in buildings in the business, public, municipal and household sectors. The buildings sector is an area with the biggest potential for energy savings, achievable for an acceptable cost.[45]" The Independent Energy Commission, led by the then chairman of the Academy of Science Václav Pačes stated: "The financial resources of the European Structural Funds should be used to lower the energy intensity of Czech public and business buildings. These measures should be conditioned by reaching at least a low-energy standard.[46]"

Specific measures

Savings in household and public sector: energy retrofits of buildings

The Czech Republic shows a high absorption capacity in investments into energy retrofit of buildings. Revenues from the auctions of ETS allowances, planned to be used to support energy savings in buildings as well, will, according to an estimate by the Ministry of the Environment, reach EUR 96 million per year.[47] Compared with the amount requested in applications for the Green Investment Scheme by 31 December 2012 – EUR 1.08 billion (EUR 430 million per year on average), it is clear that the financial resources gained in auctions will not be able to cover the absorption potential of the energy efficiency measures in residential buildings. Our calculations of public funds invested into energy efficiency from the GIS and operational programmes show that the absorption capacity of energy retrofits of public and residential buildings to high efficiency standards including installations of small RES reaches EUR 400 million annually.

Considering the obligation of the Czech Republic to fulfil the Directive on the Energy Performance of Buildings (EPBD II) by 2018, and considering the importance of public buildings for their potential to set an example for their visitors, it is highly recommended to set the financial criteria so that any building, newly constructed from the Structural and Cohesion Funds, reaches at least nearly zero-energy standards already in 2014.

Public financial support for energy efficiency must be linked to ambitious efficiency criteria. As the nearly zero-energy standard is, according to EPBD II, to be defined by the Member States based on cost-optimal levels of minimum energy performance requirements, it may stay well below achievable ambitious efficiency criteria such as the passive standard. Efficiency criteria for EU funded buildings should go beyond the nearly zero-energy standard if it is not defined in an ambitious way in the Czech Republic. Setting insufficient efficiency criteria for public buildings may lead to ineffective use of SCF, as European Court of Auditors recently highlighted in the case of the Czech Republic.[48]

For reconstructions, the principle should be that any building reconstructed from the SCF must achieve at least low-energy standards. The higher the standard achieved, the higher should be the financial support with a grant component. The possibility of financing energy efficiency in housing and public buildings opens up an opportunity for higher financial support for top technologies in the building industry. Use of such technologies requires good preparation and experienced building companies and employees, increasing their competitiveness. It is necessary to use financial resources from the European Social Funds to support especially the capacity building of individuals, SMEs, small municipalities and micro-regions to apply for and implement both energy efficiency measures and renewables, as well as to support behavioural changes and proper usage practices.

Energy security and independence: support for renewable resources

An opportunity widely unused so far is the area of heat production from renewable sources, ranging from installation of small solar thermal panels for heating and hot water to utilising geothermal resources and biomass. The new Act on Renewable Resources deals with operating support for heat production from renewable resources in installations over

44 Zámečník M., Hlaváč J.: Home is where the heat is. http://bankwatch.org/sites/default/files/Home-is-where-the-heat-is.pdf
45 Ministry of Industry and Trade: Second National Energy Efficiency Action Plan (in Czech): http://download.mpo.cz/get/45106/50714/583777/priloha002.pdf
46 Independent Energy Committee for assessment of long-term energy needs of the Czech Republic: Final Report. http://www.vlada.cz/assets/media-centrum/aktualne/Pracovni-verze-k-oponenture.pdf
47 Source: Ministry of Environment: Roundtable discussion on using revenues from auctions of ETS allowances in 2013 - 2020
48 European Court of Auditors: Cost-effectiveness of Cohesion Policy investments in energy efficiency - http://eca.europa.eu/portal/pls/portal/docs/1/19610748.PDF

200 kW. Investment support from SCF should be used to support small scale renewables as well as systematic solutions stretching along the whole production chain e.g. local production and distribution chain of pellets from agricultural crops (farmer – local production of pellets – installation of pellet furnaces in the municipality). Another area is support for increased efficiency of the networks for heat distribution or micro-heating – small sources for individual blocks of buildings.

Strict conditions have to be set on financing boiler replacements and pollutant filters, currently planned in the draft proposal of OP Environment. Investment into the prolonging life-time or increasing capacity of coal burning installations, isolated efficiency measures or measures aimed at fulfilling minimum legal limits for air pollution must not be financed. Financing must be limited only to boiler replacements for RES. In order to use the full synergy of energy efficiency and air quality improvements, it is necessary to set up the support programmes so that they simultaneously target investments int energy efficiency of the heated buildings, efficiency in the distribution grid and RES heat sources (including solar, geothermal, biomass etc.) as well as capacity decrease, as the efficiency measures in buildings and grid will decrease the demand.

Renewable sources of electricity need a balanced system of support without discrimination against any type. The Czech Republic may not be able to fulfil its 2020 RES target (13%). The National Renewable Energy Action Plan[49] sets annual thresholds for installed output of each type of RES technology. The current law on supported energy sources[50] states that in case the annual threshold for a given technology is reached in the year, no feed-in tariff support will be provided for installations of that technology in the following two years. As the thresholds in the NREAP are set to bring the RES electricity production just slightly over the target (to 13.5%), this limitation of support as well as the uncertainty about the support will severely limit the willingness of investors to develop electricity-generating RES.

Investment support for RES from the Structural and Cohesion Funds should bring the necessary stability and predictability in this field. With well-set criteria on environmental impacts and a focus on the contribution of RES projects to furthering the goals of the Cohesion Policy, such as support for disadvantaged regions and communities, local energy security and innovation, SCF support is in a unique position to set a new standard for meaningful RES development. As a first step, it is necessary to include support of all kinds of RES technologies, able to fulfil these criteria, in the areas of support in the OP proposal. It is also necessary to ensure that environmentally harmful technologies such as waste incineration are not re-branded as RES in the Czech Republic.

For small scale renewables mounted on buildings, stable financing with a grant component must be established, as the complicated and ever-changing feed-in tariff regulation and low willingness of distributors (most of them owned by power giant ČEZ) to connect them discourage small economic actors from these investments. Setting environmental criteria should avoid the SCF support for sources with harmful environmental impacts such as fertile land occupation or unsustainable sources of biomass. The monitoring of environmental impacts of RES planned under OP Environment should be used to define and apply these criteria.

For Czech competitiveness: innovation in the energy sector, smart grids

In the area of energy efficiency it is necessary to avoid support to projects with low efficiency criteria, where quick absorption of the funds is ensured but the efficiency potential is not fully used. In order to achieve a high level of energy savings it is necessary to create a motivational framework that will reward those who exceed the minimum requirements of the technical norms and introduce innovations, etc. At the same time the requirements must be coordinated and harmonised among the areas of support (residential, public buildings etc.) to achieve synergies. Ambitious requirements applicable to all sectors create sufficient demand for innovation and economies of scale.

In the field of integration of renewable resources, this refers primarily to the use of smart-gird elements allowing the regulation of supply and demand. In order to allow integration of the necessary proportion of electricity from RES, both consumer and distribution networks must be prepared. It is necessary to invest in technical equipment on the grid level and in changes in network management. SCF are well positioned to pilot smart-grid development in the Czech Republic through financing their integrated development together with RES sources and demand management in pilot regions. For effective use of biogas, biogas stations must be hooked up to the gas network and distribution and use of biogas must be implemented as a fuel for city vehicles, for example in public transport or garbage collection (with a positive impact on air pollution as well).

49 National Renewable Energy Action Plan of the Czech Republic, http://ec.europa.eu/energy/renewables/transparency_platform/doc/dir_2009_0028_action_plan_czechrepublic.zip

50 Zákon 165/2012 Sb. o podporovaných zdrojích energie a o změně některých zákonů, http://aplikace.mvcr.cz/sbirka-zakonu/ViewFile.aspx?type=z&id=24254

Indicators and targets

In order to fulfil the targets anchored in the Europe 2020 strategy we suggest that the Czech Republic set the following goals, specifically in the field of energy savings and renewable energy.

Energy efficiency in buildings

- Total energy consumption of households: 257 PJ in 2020, decrease by 13.7 % compared to 2010.
- Buildings reaching almost zero-energy standard: All new public buildings and 10 % of new housing buildings (1400-2200 buildings per year), will be built to nearly zero-energy standard or higher between 2014-2020.
- Speed of energy renovations of buildings: At least 3 percent of housing stock will undergo energy efficiency retrofit per year, reaching low-energy or better standards.

Renewable sources

Energy manufactured from renewable sources in the Czech Republic in 2020:[51]

- biomass: 215 PJ
- solar-thermal sources: 12 PJ per year
- geothermal sources: 12 PJ per year
- total share of renewable resources in primary sources of energy: 215 PJ, 15 %

Total installed output of renewable resources for energy production in the Czech Republic 2020

- Solar: 10 000 roof installations on family houses, apartment buildings and public buildings annually
- Wind: 1500 MW of installed output by 2020
- Geothermal: 25 MWe of installed output in geothermal combined heat and power sources

Further goals:

Renewable sources: Ten micro-regions to implement a strategy of maximum use of local renewable resources and achieve 50 % coverage of energy consumption from renewable sources.

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51 The RES targets are based on the "consistent and smart" scenario for the development of the Czech energy sector commissioned from the Wuppertal Institute. Karel Polanecký et al: Chytrá energie, http://www.chytraenergie.info/images/stories/chytra_energie.pdf