



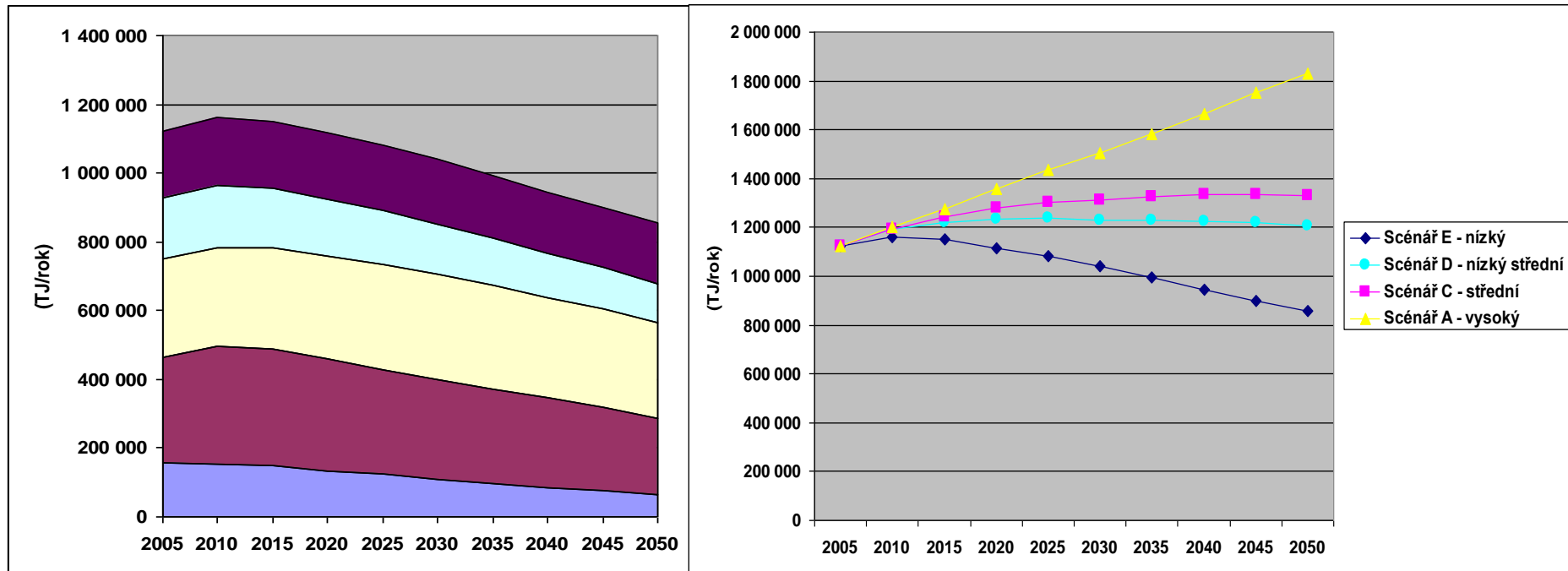
Ministry of the Environment of the Czech Republic

Czech Republic: Concrete measures to utilize Energy Efficiency and Renewable Energy potential

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Potential of EE in Czech Republic: which way do we choose



Potential of EE by sectors

- total end-use energy consumption: 1120 PJ
- potential in residential buildings: 142 PJ (60% of current consumption, space heating is a significant part)
- investment of 800 mil. euro annually for next 30 years is needed to utilize one half of the potential
- tertiary sector buildings: 33 PJ (45%)
- industry: 94 PJ (23 %)



Energy Efficiency funded from EU Structural Funds (1)

- Operational Programme Environment, 2007-2013, administered by State Environmental Fund (managed by MoE)
- Priority Axis 3.2: allocation of appr. 420 mil. euro for energy efficiency in schools, hospitals, city halls, other public buildings
- more than 1500 objects to be modernised
- the most successful support area of the Programme



Energy Efficiency funded by EU Structural Funds (2)

- acceptability criteria: reconstruction leading to low energy standard (certain average U-value of the building's shell)
- 1st call in 2007: applicants did ask for 8-times more funds than were allocated => no worry that criteria are too strict
- subsidies don't solve the entire problem but give an important signal to the market



Green Investment Scheme (1)

- EU doesn't fund efficiency in households (no support to so called housing)
- July 2008: Parliament says that revenues from AAU trading is an income of State Environmental Fund (managed by MoE)
- Czech Republic can sell >100 mil. AAUs (=100 mil. tons CO2 of Kyoto credits)
- so far 68.5 mil. AAUs sold, in its majority to Japanese buyers



Green Investment Scheme (2)

- three areas of support to residential (family and apartment) buildings:
 - A. Thermal modernisation to a defined (low energy) standard – complete (A.1) and partial (A.2) insulation
 - B. Construction of new passive buildings
 - C.1 Replacement of coal, oil or electricity heaters for new efficient biomass sources or heat pumps
 - C.2 Installation of these technologies to new residential buildings
 - C.3 Installation of thermal-solar panels



Green Investment Scheme (3)

- semi-mandatory and continuous support from 2009 to 2012 (or until funds finish)
- 150,000 to 200,000 projects expected
- bonus (D.) for combination of measures
- in August 2009 GIS modified and opened to a wider spectrum of applicants
 - lower investment costs needed for A.2
 - concrete-slab blocs and heat pumps to apartment buildings included
 - project documentation and energy performance assessment supported



Green Investment Scheme (4)

- initial barriers overcome (high-level of investment and proper documentation requirement + communication)
- appr. 1500 projects applied to the date
- benefits of GIS and OP Environment:
 - 1.2-1.5 mil. tons CO₂ as expected annual emission reduction (~1 % of Czech emissions)
 - up to 30,000 jobs to be sustained or created
 - 140 mil. euro annually expected to be saved by households and municipalities on energy bills



Green Investment Scheme

A. Complete and partial insulation

- 20, or 30 % savings required in A.2, achieved by quality measures (defined by certain U-value or reconstructed parts)
- 40 % savings and 70 kWh/m² (family houses) or 55 kWh/m² (apartment buildings) required for higher subsidy in A.1
- subsidy as fixed amount per m² of floor area – avoids risk of overpricing of projects
- easy to calculate, easy to understand



Green Investment Scheme

B. New passive residential houses

- 20 kWh/m² (family houses) or 15 kWh/m² (apartment buildings) required
- subsidy as fixed amount per family house or flat – avoids construction of large mansions
- subsidy in a level to promote higher energy standard of planned buildings, not to initiate new construction



Green Investment Scheme

C. Renewables in buildings

- biomass heaters (boilers, stoves) with low local-pollutant emission and high efficiency standards
- heat pumps of certain Coefficient of Performance – to ensure sufficient greening
- solar collectors of certain solar gains
- subsidy as fixed (diversified) amount per installation of renewable energy source



Potential of RE in Czech Republic: how do we utilize it

- 448 PJ on primary energy input by 2050
- biomass (solid, biogas and biofuels) being the largest opportunity
- but wind, solar (PV and thermal), small hydro and geothermal being important
- subsidies (OP Environment, 3.1) and GIS help renewables on building and municipal level, and mainly for heat production



Feed-in tariffs for RES-E

- Act No. 180/2005 Coll. gives preferential and diversified by technology feed-in tariffs to renewables for electricity production
- 15+ years guarantee creates investors' confidence in the market
- permission process being difficult but measures for its streamlining have been identified and partly adopted (by MoE)
- information campaign for civil servants follows



What do EE and RE bring

- higher energy security through lower import dependence and decentralisation
- local and regional financial flows serving to a community development
- lower energy bills, higher living comfort
- new jobs, new opportunity to small and medium enterprises (incl. agriculture)
- reduction of local pollution
- and mitigation of climate change



Tasovice case

Thermal insulation of a school building in
Tasovice by Znojmo

- **Expenditure 14.388.987,- Kč**
- **Subsidy 10.957.423,50 Kč**
- **Assets:**
- Reduction of energy consumption **1128 GJ/year**
- Whole insulated space **6193,40 m²**
- Emission CO₂ reduction **62,68 t/year**





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Lukavec case

Installation of heat pumps and solar collectors on a school building in Lukavec

Expenditure 11.681.048,- Kč

Subsidy 8.013.557,70 Kč

Assets:

Reduction of energy consumption **869,2 GJ/year**

Increase of power capacity from RES **171 kW**

Increase of heat production from RES **687 GJ/year**

Emission CO₂ reduction **36,66 t/year**





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Thank you for your attention

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