



Data Collection on Building Stock for Czech Renovation Roadmap

Six steps to learn a volume of an opportunity

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Zakládající partneři



Významný partner



Partner



Step 1: Collecting what is known

- Estimates from 2001 census on residential buildings
- Very rough estimates of non-residential (public, commercial) building stock
- Several studies assessing energy saving potential, including international surveys like **World Energy Outlook 2012 by IEA**
- No reliable data on investment needed

Step 2: Getting actors motivated

- An obligation to develop renovation roadmaps accordingly to **Art. 4 of EED by April 2014 is a crucial motivation** to get more detailed and reliable data on building stock
- Ministry of Industry and Trade (MIT) assigns Chance for Buildings to develop draft renovation roadmap

Step 3: Sorting data on residential buildings

- In 2011 a state-wide census took place, organized by Czech Statistical Office
- However aggregation of data didn't help our purposes, so under mandate of the ministry, **Chance for Buildings communicates with Czech Statistical Office to sort their data in a way we need**
- As a result we have very detailed and reliable data on all residential building stock in Czech Republic
- Number of buildings, number of floors, number of flats, floor area, regional division, seven age bands

Step 4: Estimating current energy performance

- Research of several studies on development of U-values and other features to be assigned for seven age bands
 - TABULA study very helpful !
- **Modelling typical energy performance for 28 non-renovated building categories** (7 age bands x 4 building sizes)
- Research on share of already renovated buildings (volume of ETICS sales, outcomes of support programmes, estimates)
- Modelling typical energy performance for 8 renovated building categories
- **Adjusting calculated data to data on end-use energy consumption in residential sector** (data from the ministry)

Step 5: Calculating volume of opportunity

- Modelling hypothetical energy consumption for all building categories if they get renovated
 - to low energy standard (45 % savings on space heating)
 - to passive (or NZEB) energy standard (81 % savings on space heating)
- Model outcomes include
 - area of renovated building parts (outer walls, windows, roofs etc.)
 - number of installed technologies (boilers, ventilation units etc.)
- Thus we can estimate **needed investment costs** (extrapolating for EU, 100 bln. euro/year is good estimate)
- We also know needed capacity for energy efficient construction industry (volume of materials, construction works etc.)

Step 6: Struggling with non-residential buildings

- Reliability of available data questioned
- Better data on state-owned buildings to be available by end of 2013 (deadline for sending inventory for Art. 5 of EED to Brussels), though registry fills up very slowly
- Number, size and age of regional and municipal public buildings (administrative and public service – schools, hospitals..) yet to be estimated
- Commercial buildings not to be left out..
- Then we run similar modelling for tertiary sector buildings
- It is believed they involve about 25 % of floor area of all building stock in Czech Republic



Thank you for your attention

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Chance for Buildings is an alliance by leading trade associations that support energy efficient construction. It brings together the Czech Green Building Council, Passive House Center, Mineral Insulation Manufacturer's Association and the EPS Association. It represents over 200 companies across the entire value chain of building construction and renovation. Chance for Buildings aspires to reap the crucial societal benefits of energy efficient buildings. We advocate for favourable policy and economic incentives, including proper implementation of relevant EU directives in the Czech Republic.

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