Energy Saving Measures in Buildings and Combinations in Realization and Financing

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Energy Efficiency in Buildings

EU – Energy Performance of Building Directive

- **EPBD Nr. 2002/91/EC**
- **new buildings – energy efficiency requirements**
- **existing buildings – requirements for reconstructions**
- **building certification (labeling)**

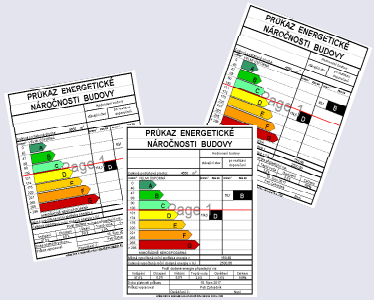
Czech legal conditions

- **amendment of Act (406/2000 on energy management)**

Energy Performance Certification

- **in Czech Republic from 1st of January 2009 – obligation to prepare Energy Performance Certificate all new buildings over 1000m2 of floor space (as part of project documentation) or reconstructions of existing buildings***

- **acceptable classification – „C“ (range A – G)**



** reconstructions over 25% of building surface or also reconstruction of technological equipments*

Documentation

in the process of preparation energy saving measures

- **energy audits**
- **energy certificates**
- **various studies** **(from simple analyses to feasibility studies)**
- **project documentation** **(for realization)**

Types of Energy Savings Measures

in buildings – basically two types of measures

- **constructional measures** **(insulation and exchange of windows)**
- **technological measures** **(reconstruction of energy systems)**

for constructional measures – very important structure of project financing

technological measures – implemented with the help of future energy savings

Local Energy Projects

division of local energy projects

- **projects for lowering of energy consumption**
  (insulation, exchange of windows, modernization of technology etc.)

- **projects for effective production of energy**
  (reconstruction of boiler rooms, RES applications etc.)

- **complex projects (combination of above-mentioned)**
  (projects for effective production of energy and savings)

Project Financing

possibilities of financing of projects in local energy

- **own sources** (usually unreal)
- **bank credit**
- **subsidies**
- **energy service provision**

Subsidies for Energy Saving Projects

Czech programs

- **State Fund for Housing Development**
  - program PANEL
  - Loans for municipalities (modernization of flats)
- **programs of Ministry of Industry and Trade**
  Program EFEKT – energy savings and RES applications
- **State Fund of Environment**
  actual program „Green for Savings “

Subsidies for Energy Saving Projects

Foreign programs – structural funds

- **Operational Program Enterprise a Innovation**
  (EKO-ENERGIE – by Ministry of Industry and Trade)
- **Operational Program of Environment**
  (by Ministry of Environment) – several parts (esp. air protection)
- **Regional Operational Programs (NUTS)**
  - Development of municipalities (over 10 thousand of inhab.)
  - integrated support of local development
- **other forms of subsidies**

Subsidies for Energy Saving Projects

Foreign support – other forms of programs

- **„Norway funds“**
  - in CR in 2004 - 2009
- **program of INTERREG initiative**
  - cross-border cooperation – regional development
- **program Intelligent Energy Europe**

good example - project ClearSupport

Clearinghouse Support

Subsidies for Energy Saving Projects

Operational Program of Environment

- **support in public sector – about 570 projects** (till this time) **(schools, hospitals etc.) by thermo-modernization**
  insulation of building surface, exchange of windows and insulation of roof
- **financial support about 240 MIO EUR** (till this time)
- **possibility of energy savings increasing**
  additional energy services provision in technology equipment renovation

Combination of Financial Sources

- **technology equipment renovation**
  - payback period 3-6 years
  - the best solution by energy services provision (EPC)

- **constructional measures**
  - payback period minimally 15 years
  - convenient using of subsidies (for example structural funds)

combination of both forms

owner of the buildings have to co-finance in range 20-40% of total investment

Project Example

Secondary School in Prague

- **reconstruction of technology equipment by EPC + boiler room operation**

  investment 312 thousand EUR
  (financing from future energy saving operational costs)

- **insulation of building + exchange of windows**

  investment 520 thousand EUR
  (co-financing by subsidy from OPE)

co-financing by owner of the school only up to 36,4 %

Project Example

15 schools in one part of Prague

- **reconstruction of technology equipment by EPC**
  investment 1,6 – 2,4 MIO EUR (financing from future energy saving operational costs)

- **insulation of building + exchange of windows**
  investment 10 MIO EUR (co-financing by subsidy from OPE)

co-financing by owner of the schools only up to 28 %

Thank you for your kind attention

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