

Energy Saving Measures in Buildings and Combinations in Realization and Financing

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Gdansk, 8th of July 2009

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)**

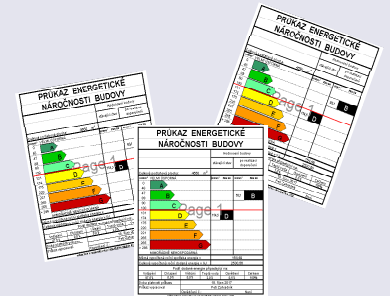
Czech legal conditions

- **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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