Energy Saving Measures in Buildings and Combinations in Realization and Financing

Vladimir Sochor – Czech Republic

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Energy Efficiency in Buildings

- 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
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

<table>
<thead>
<tr>
<th>Description</th>
<th>Investment</th>
<th>Co-financing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reconstruction of technology equipment by EPC + boiler room operation</td>
<td>312 thousand EUR</td>
<td>(financing from future energy saving operational costs)</td>
</tr>
<tr>
<td>Insulation of building + exchange of windows</td>
<td>520 thousand EUR</td>
<td>(co-financing by subsidy from OPE)</td>
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<tr>
<td>Co-financing by owner of the school only up to 36.4%</td>
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<td></td>
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</tbody>
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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

Vladimir Sochor
Gdansk, 8th of July 2009
vladimir.sochor@svn.cz