Achievements and challenges in improving energy efficiency in housing and public buildings in the Czech Republic

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Development of energy consumption

Development of final energy

Development of energy intensity of economy

Graph showing the development of final energy consumption and energy intensity of the economy from 2010 to 2017.
Comparison of the relative share of sectors in total final consumption

**Year 2010**
- Industry: 31.03%
- Transport: 29.26%
- Services and public sector: 13.60%
- Households: 26.11%

Total final consumption: 1,025,084 PJ

**Year 2017**
- Industry: 30.80%
- Transport: 28.06%
- Services and public sector: 13.39%
- Households: 27.75%

Total final consumption: 1,028,132 PJ
Tools to meet energy efficiency targets

- **legislative instruments** (Act No. 406/2000 Coll., on energy management with relevant implementing regulations)

- **investment grants** (OPEIC, OPE, IROP, OPPPG, NGSP, EFEKT)

- **non-investment grants** (EFEKT program)
  - support for education: counseling centers, seminars, publications
  - introduction of energy management
  - supporting the preparation of energy-saving projects using the Energy Performance Contracting (EPC) method

- **financial instruments** (soft loans, guarantee mechanisms)
Implementation of EED content in Czech environment

- Act No. 406/2000 Coll., on energy management
  - amendments to related decrees - examples:
    - Decree 78/2013 on the energy efficiency of buildings
      - in preparation of an amendment to the Decree
    - Decree 118/2013 on energy specialists
      - in preparation of an amendment to the Decree
    - Decree 480/2012 on energy audit and energy assessment
      - in preparation of an amendment to the Decree
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<tr>
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</thead>
<tbody>
<tr>
<td>Operational Program Enterprise and Innovation for Competitiveness (OP EIC)</td>
<td>20,0</td>
<td>17,3</td>
<td>20,0</td>
<td>7,6</td>
</tr>
<tr>
<td>Operational Program Environment (OPE)</td>
<td>24,6</td>
<td>23,6</td>
<td>5,0</td>
<td>5,0</td>
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<tr>
<td>Integrated Regional Operational Program (IROP)</td>
<td>16,9</td>
<td>9,6</td>
<td>2,0</td>
<td>3,5</td>
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<tr>
<td>New Green Savings Program (NGSP)</td>
<td>27,0</td>
<td>22,9</td>
<td>14,3</td>
<td>10,3</td>
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<td>Operational program Prague – pole of Growth</td>
<td>1,0</td>
<td>1,9</td>
<td>0,01</td>
<td>0,01</td>
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<tr>
<td>Program EFEKT</td>
<td>0,7</td>
<td>0,8</td>
<td>0,4</td>
<td>1,6</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>90,2</strong></td>
<td><strong>76,1</strong></td>
<td><strong>41,7</strong></td>
<td><strong>28,0</strong></td>
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Main objectives of the OPE

- reducing the energy performance of public buildings and increasing the use of renewable energy sources
- for public buildings subsidy is also set at a flat rate per m² of insulated area in 3 levels depending on the saved energy (ranging between 30% and 50% of the eligible costs)
- for single family houses („boiler subsidies“) – through regional authorities

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Percentage</th>
<th>Funding Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector buildings</td>
<td>64%</td>
<td>600.0 Mio EUR</td>
</tr>
<tr>
<td>Single-family houses</td>
<td>36%</td>
<td>340.0 Mio EUR</td>
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</table>
New Green Savings Program (NGS)

Main objectives of the NGS program

- increasing the energy efficiency of buildings (energy savings, exchange of heat sources and support application of renewable energy sources), reducing greenhouse gas emissions and improving of a quality of housing
- subsidy is set at a flat rate per m² of insulated area in 3 levels depending on the saved energy and ranging between 30% and 50% of the eligible costs

<table>
<thead>
<tr>
<th>Type</th>
<th>Subsidy</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-family houses</td>
<td>49%</td>
<td>340.0 Mio EUR</td>
</tr>
<tr>
<td>Multi-family houses</td>
<td>21%</td>
<td>160.0 Mio EUR</td>
</tr>
<tr>
<td>Public sector buildings</td>
<td>30%</td>
<td>210.0 Mio EUR</td>
</tr>
</tbody>
</table>
Current state of application of financial instruments

Operational programs

- **Operational Program Enterprise and Innovation for Competitiveness**
  - start in September 2017 – allocation approx. 0,5 bil. CZK

- **Integrated Regional Operational Program**
  - still under preparation – allocation up to 2 bil. CZK

- **Operational program of Environment**
  - bad experience from the previous call - preparation of a financial instrument?

**besides Operational programs** - **program ENERG**
Change of motivation for energy saving projects

- motivation for energy saving projects
  - possibility of obtaining a subsidy - every investment subsidy distorts the market
  - offer from different companies for individual technologies - partial solutions

- motivation must be in the availability of information on complex solutions and their benefits
  - opportunity for the customer to choose a solution that delivers an acceptable rate of return
    - for entrepreneurs – acceptable payback period of the project is no longer than 5-6 years
    - for the public and residential sectors – acceptable payback period of up to 25 years
New type of approach to the customer

- business opportunity - provision of energy services

- new type of energy services – project must bring some benefit to customer (examples of good practice)

- provide the customer with comprehensive solution for energy saving solutions (feasibility study in the form of an energy assessment)

- energy service provider, following the offer of a feasibility study in the form of energy assessment, can also offer the implementation of proposed measures, funding models and also subsequent monitoring (it may even propose to take over energy supplies)

- small subsidy possible for elaboration of “feasibility study” (EFEKT program)
State Program to Support Energy Savings – EFEKT

- actual program is announced for the five-year period 2017 – 2021
- budget for the entire program period of 750 million CZK (i.e. 60 million EUR and 12 million EUR per year)
- individual calls for subsidies in annual period
- program contains two subprograms:
  - P1 – support of investment projects
  - P2 – support of non-investment projects
- increasingly important program with soft measures to support energy savings
Non-investment grant support from EFEKT program (1)

emphasis on non-investment forms of energy saving support

- **Energy consultation and information centers (EKIS)**
  - entrepreneurs, municipalities, associations, etc.
  - max. subsidy 300,000 CZK (advance payment of CZK 80 thousand, supplement or refund at the end of the year depending on the center's performance)
  - 100% of eligible expenditure

- **energy saving courses, seminars**
  - entrepreneurs, associations, etc.
  - courses with a fee (grant 40,000 CZK / day, 50% of eligible costs)
  - courses without a fee (max. CZK 80,000 per day, 90% of eligible costs)
Non-investment grant support from EFEKT program (2)

- publications, documents and tools for disseminating information in the field of energy savings
  - entrepreneurs, associations, etc.
  - subsidy max. 200,000 CZK, 70% of eligible expenses

- assessment of the suitability of energy-saving EPC projects and preparation of tender documentation for a public contract for a project solved by the EPC method
  - public sector, state sector and business sector
  - subsidies max. 200,000 CZK, 70% of eligible expenditure
Non-investment grant support from EFEKT program (3)

- **introduction of an energy management system**
  - regions, towns and city districts with a population of over 5,000, business entities
  - subsidies up to 500,000 CZK and max. 70% of eligible costs

- **preparation of realization of quality saving projects with good practice principles**
  - homeowners, public sector and business owners
  - subsidies for the preparation of a feasibility study in the form of an energy assessment of up to 200,000 CZK and max. 70% of eligible costs
  - form of ex post subsidy, i.e. after the study was elaborated
  - for the year 2019 call announced and submission of applications by 18 October 2019
Support for cost-effective projects with good practice principles

breakdown of support by object ownership

- family houses
  - subsidies for document processing up to 30,000 CZK and max. 70% of eligible costs

- block of flats
  - subsidies for document processing up to 50,000 CZK and max. 70% of eligible costs

- objects in the public sector
  - subsidies for document processing up to 100,000 CZK and max. 70% of eligible costs

- objects for business purposes
  - subsidies for document processing up to 200,000 CZK and max. 70% of eligible costs
Additional energy efficiency instruments

- the introduction of a broad and functional spectrum of financial instruments in combination with grant programs

- introduction of functional technical assistance for the preparation of high-quality energy-saving projects (especially in the field of housing, small and medium-sized enterprises and municipal and regional projects)

- introducing a system of voluntary agreements with selected entities

- a thorough system of wide-ranging promotion of ways to reduce energy consumption aimed at achieving a change in awareness of energy savings
Energy saving awareness survey

- Survey carried out for **all basic sectors**
  - family houses, apartment buildings, public sector, business sector

- **Survey results vary slightly across sectors**, but often match
  - subsidies are an incentive to implement energy-saving projects, but **only 10-40% of all projects are subsidized**
  - **the motivation is not so often energy savings**, but rather the improvement of the technical condition of the building, the appreciation of the building and the comfort of use
  - there is rarely a building renovation plan, and **ad hoc matters are usually dealt with low awareness of energy savings** – positive impact on costs with appropriate combination of measures
Links to interesting websites

- TZB info: www.tzb-info.cz
- Renovate the house: www.renovujdum.cz
- Catalog of efficiency measures: www.kataloguspor.cz
- Energy saving building: www.uspornabudova.cz
- Healthy building: www.zdravabudova.cz
- Energy literacy: www.energeticka-gramotnost.cz
Thanks for your attention

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