Status of ESCO Development in Croatia

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Total primary energy supply (TPES)

Energy data for 2011:
- Primary energy production: 187.42 PJ
- Total primary energy supply: 383.65 PJ
- Primary energy self supply: 48.9%
- TPES/capita: 2,081 kg_{oe} (41% lower than EU27)
Energy data for 2011:
- TPES intensity: 129 kg\text{oe}/1000 USD\text{2005}_{\text{PPP}}
- 1.2% above EU27
Slika | Figure 2.10.1. Struktura ukupno utrošene energije | Total primary energy supply by sectors
Izvor | Source: EIHP
Energy efficiency index

Households
Total index
Transport
Man. industry

Slika | Figure 9.1.1. Indeks poboljšanja energetske učinkovitosti ODEX za sve sektore potrošnje | Energy efficiency index ODEX for all sectors – Izvor | Source: EIHP
The Act on Efficient Utilization of Energy in Final Consumption (OG 152/08, 55/12)

Regulation on the Methodology for Calculation of Energy Savings in the Final Consumption (OG 40/10)
Regulation on the Methodology for Monitoring, Measurement and Verification of Energy Savings (OG 77/12)
Regulation on Energy Audits of Structures and Energy Certification of Buildings (OG 81/12, 29/13)
Regulation on the Requirements and Criteria to be Met by Energy Auditors and Energy Certifiers (OG 05/11)
Regulation on Control of Energy Certification of Buildings and Energy Audits Reports (OG 81/12)
Ordinance on Contracting and Implementation of Energy Services in Public Sector (OG 69/12)
Regulation on Determining Ecodesign Requirements for Energy-Related Products (OG 97/09)
Regulation on Energy Efficiency Requirements for Ballasts of Fluororcent Lightning (OG 32/09)

Ordinance on information system for energy efficiency

Recent policy developments
Recent policy developments

The Act on Efficient Utilization of Energy in Final Consumption (OG 152/08, 55/12) was adopted, based on:

- EU Directives (2010/31/EU) on the energy performance of buildings (EPBD)
- EU Directive (2006/32/EC) on energy end use efficiency and energy services (ESD)
- Defines energy services (energy audits and energy certification of buildings) and obligations of the public sector, energy companies and large consumers

Ordinance on Contracting and Implementation of Energy Services in Public Sector (OG 69/12) creates preconditions for ESCO model implementation

- Energy savings are recognized (reduction of costs for energy bills belong to owner of building)
- Project implementation risks lie on ESCO companies (investments in energy renovations are coming back from the energy savings)
- Current consumption is calculated on the basis of energy invoices for the past 3 years → reference consumption for determination of future savings
Overview of the Programme

- **Retrofitting programme for public sector buildings (04/2012 – 12/2013)**

- **Partners of the Programme:**
  - Ministry of Construction and Physical Planning,
  - Centre for Monitoring Business Activities in the Energy Sector and Investments,
  - Croatian Bank for Reconstruction and Development,
  - United Nation Development Programme (UNDP),
  - Croatian Fund for Environmental Protection and Energy Efficiency,
  - National, regional and local authorities and other public sector actors

- **Budget (2012):** around 675,000 EUR (initial budget of Ministry for development of ToRs for public buildings)

- **Main beneficiaries:** owners, users and managers of public buildings, service providers (consultants, engineering companies, ESCO companies), financial institutions, architects and constructors, as well as household sector.
Goals of the Programme

- Overall objective of the Programme is implementation of economically feasible, EE and RES technologies and measures in the public buildings.

- Financing through ESCO model
  - When volume of the investment in building, for chosen set of energy saving measures, is smaller than expected benefits of measures in future period (payment plans period shall not exceed 14 years)

- Goals:
  - Reduction of total energy costs by 30-60%, for every reconstructed building
  - Implementation of energy efficiency measures and renewable energy sources in buildings
  - Implementation of advanced methods of energy consumption measuring, via information system for continuous monitoring of energy and water consumption
  - Contribution to achieving sustainable development goals (GHG and other pollutant emission reduction)
  - Local economic development by creating new jobs
Phase I - Inclusion of buildings in the Programme

Owners/users of the public buildings (local self-government units, central governments units and public companies throughout Croatia) propose to the Ministry buildings which should undergo energy renovation, in line with this Programme.

Phase II – Drafting ToRs

Ministry selects and incorporates buildings in the Programme based on the received proposals.

Ministry finances and initiates development of ToR for selected buildings owned by local self-government units and central government units or

Ministry initiates development of ToR for selected building owned by public companies.

- Exclusion from the Programme: if the operational lifetime of building is less than 15 years or an essential change in the use of the building is intended.
- Limitations: necessary lighting standard, ventilation, respect of architects’ copyrights, various forms of protecting the external appearance etc.

Finalized ToR should be signed and verified by the owner/user of the building.
Phase III – Public tendering procedure

- Centre for Monitoring Business Activities in the Energy Sector and Investments carries out public tendering procedure for the selection of bidders (energy service providers – ESCO companies). Centre prepares necessary documentation and initiates the public tendering procedure.

- Tendering commission, jointly established by the Centre, the Ministry and the owner/user of the building, selects appropriate energy service providers.

- Energy service providers are natural or legal persons providing energy services or other energy efficiency improvement measures to owners/users of public buildings → may offer various methods for achieving energy savings, but must ensure energy saving guarantees.

- Chosen energy services providers design and carry out services for the energy efficiency improvement measures. Energy service providers are signing with owners/users of the public building Energy performance contract.

- Banks, if needed, approve “soft” loans necessary for the execution of investments through a special credit line (Croatian Bank for Reconstruction and Development).
Phase IV – Monitoring of the Programme results

- Owners of the buildings provide Centre with data of proved savings and energy consumption in buildings which are undergoing energy renovation.
  - Energy saving is proved by submitting of the energy building certificate and by applying accepted methods.
  - Determining achieved savings is carried out in compliance with the International Performance Measurement and Verification Protocol (IPMVP).

- Ministry collects and analyses data on the implemented measures and achieved savings.

Criteria for bid selection

- Main criteria:
  - NPV (net present value) of energy savings must exceed NPV of the bid price (70%)

- Bonuses:
  - Larger share of renewable energy generation on the location of the building (10%)
  - Less designed consumption of thermal energy (10%)
  - Local energy service provider (5%)
  - Fully automated consumption records (5%)
Results of the Programme

- **Target:** 2,166 public buildings

- **Economically feasible:** 400 public buildings (energy savings: 0.54 PJ per year; CO₂ emission reduction: 40.5 kt)

- **General results should be:**
  - Development of energy service market (ESCO market)
  - Introduction of energy efficiency principles into public procurement
  - Implementation of energy management information system (tool for monitoring and management of energy and water consumption in public buildings)

- **Current specific results (March 2013):**
  - 85 buildings in the process (19.7 mill. EUR):
    - Ready for tendering: 17 buildings
    - In tendering process: 22 buildings (4.9 mill. EUR)
    - Reviewing process: 7 buildings
    - Without interest of energy service providers: 2 buildings
    - Waiting of approval: 25 buildings (5.8 mill. EUR)
    - Ready for contracting: 7 buildings (1.4 mill. EUR)
    - Contracted (energy performance contracts): 5 buildings (1.8 mill. EUR)
Main problems:

- Lack of well prepared projects
  - The database of public buildings is incomplete
- Problems with property rights and ownership issues with public buildings
- Insufficient number of energy service providers (current situation is better than situation 1 year before)
  - Problem: energy service providers must ensure energy saving guarantees
  - Energy service providers don’t like to take over the risks for behaviour of consumers
- Financing of the project is on the owner/user of buildings through project financing (establishment of SPV)
  - Problem: project financing is not developed in Croatia
- Verification of energy savings is not solved
THANK YOU FOR YOUR ATTENTION!

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