SERBIAN – GERMAN DEVELOPMENT COOPERATION PROJECTS ON ENERGY EFFICIENCY IN BUILDINGS

Implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Residential buildings

Objective: The implementation of the energy-efficient measures within the private households has been improved.

Phase II: Advisory in Energy Efficiency (01/2011 – 03/2014)
Objective: The pre-conditions for implementation of the national program of Energy Efficiency in building sector are established.

Phase III: Advisory in Energy Efficiency (04/2014 – 03/2017)
Objective: Implementation of the national energy efficiency action plan (NEEAP) in the building sector is improved.

Partner(s): Ministry responsible for energy / construction
(Ministry of Mining and Energy and Ministry of Construction, Transport and Infrastructure)

Public buildings

Objective: Preconditions for the reduction of the emission of greenhouse gases through increased energy efficiency (EE) in public buildings are improved
Political partner: Ministry of Mining and Energy
AREAS OF INTERVENTION

- Legislation framework
- Tools and Instruments
- Capacity development
- Awareness raising
• Support in transposition of EU directives: EPBD and EED
• Introduction of system of building certification
• Support in drafting of legal / regulatory documents on EE in buildings
• Broad consultation processes (inter-sectoral WGs, Parliament, City Councils, etc.), CSOs and private sector
• Local energy efficiency action plans for residential buildings
BUILDING TYPOLOGIES AS INPUTS TO POLICY DEVELOPMENT AND EPBD IMPLEMENTATION

- National typology of residential buildings
  (Belgrade Faculty of Architecture, 2013)

- National typology of residential buildings in Serbia constructed since 20013 (Belgrade Faculty of Architecture, 2017)

- National typology of schools (University of Belgrade, 2018)

- National typology of kindergartens (University of Belgrade, 2018)
PHASE 1

- **EU Project TABULA** Project co-funded by the Intelligent Energy Europe program of the EU (2009-2012)
- Typology Approach for Building Stock Energy Assessment.
- Serbia - associated partner

PHASE 2

- **EU Project EPISCOPE** (2013-2016)

  [http://www.episcope.eu/building-typology/country/rs/]
STEPS IN CREATION OF BUILDING TYPOLOGIES

- DATA COLLECTION: Survey of building stock
- DATA PROCESSING
  - Assessment of construction and energy data (representative sample)
    - 23,000 residential buildings
    - Approx. 2,000 schools
    - 563 kindergartens
  - Statistical analysis
  - Clustering
  - Definition of model building and real representative of model building
  - Calculations
  - A complete overview of energy needed for heating, lightening and HWP
  - Definition of improvement levels 1 and 2 (+3)
  - Assessment of potential savings of energy and CO2 emission reduction
LOCAL RESIDENTIAL BUILDING TYPOLOGIES IN SERBIA

- PILOT PROJECT - LEEAP: Vršac
- LEEAPS: Vrbas, Pirot, Ivanjica and Soko Banja

STEPS:
- Survey of residential building stock;
- Creation of local typology building matrix;
- Calculation of potential savings in residential building sector;
- Drafting of LEEAP;
- LEEAP adoption and implementation.
SOFTWARE FOR EE ESTIMATION IN RESIDENTIAL BUILDINGS
NATIONAL TYPOLOGY OF SCHOOLS

Distribution of building types: according to the size and age class (number of buildings)
NATIONAL TYPOLOGY OF SCHOOLS

A great diversity in energy performance
A great diversity in energy performance
NATIONAL TYPOLOGY OF KINDERGARTENS

Distribution of building types according to the size and age class (number of buildings)
BENEFITS

- an overview of existing building stock in Serbia (residential buildings, schools, kindergartens)
- A complete overview of energy needed for heating, lightening and HWP
- Assessment of potential of energy and CO2 saving
- Bases for assessment of macro-economic benefits of implementation of EE measures
- Key inputs for creation of national and local EE strategies and action plans
- Inputs for policy development and implementation
Thank you for your attention!

As a federally owned enterprise, GIZ supports the German Government in achieving its objectives in the field of international cooperation for sustainable development.

Published by
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Energy Efficiency in Public Buildings in Serbia

Author
Svjetlana Djokic
GIZ Senior Project Manager

T +381 63 413 841
E svjetlana.djokic@giz.de

23 Terazije St.
11000 Belgrade
Serbia

T/F +381 113690 650
E ee-project@giz.de
I www.giz.de