





CONFERENCE PROGRAM

12th International Conference of Young Scientists on Energy Issues CYSENI-2015

27-28 May 2015

The Conference is held at the Lithuanian Energy Institute Breslaujos str. 3, Kaunas, Lithuania



ACHIEVING ENERGY EFFICIENCY IN THE BUILDING SECTOR IN SELECTED CEE COUNTRIES: POLICY BASED ENERGY DEMAND SCENARIOS UNTIL 2030

Agne Toleikyte¹, Lukas Kranzl, Andreas Müller

Vienna University of Technology Gusshausstraße 25-29, A-1040 Vienna, Austria Phone: +43 (0) 1 58801 370337 Email: toleikyte@eeg.tuwien.ac.at, kranzl@eeg.tuwien.ac.at, mueller@eeg.tuwien.ac.at

ABSTRACT

The most significant instrument to achieve energy savings in the European building sector is the Energy Performance Building Directive 2010/31/EU (EPBD, recast of 2002/91/EC). The directive has to be implemented on the national level setting up policy instruments to trigger investments in energy efficiency measures.

In this paper, policy instruments to achieve energy efficiency in the building sector will be analysed in Bulgaria, Czech Republic and Romania. Moreover, the impact of the existing policy instruments on the final energy demand until 2030 is modelled.

The following steps are carried out: (I) data on the building stock, renovation solutions, prices and policies are collected (II) current energy demand for space heating and hot water in the whole building sector are calculated (III) scenarios until 2030 are modelled implementing existing national policy instruments. The scenarios are modelled by using a bottom-up, techno-socio-economic approach in Invert/EE-Lab model. Invert/EE-Lab is a dynamic building simulation tool that evaluates effects of economic and regulatory incentives on the energy demand in the whole building sector in a country.

The final energy demand for space heating and hot water in the residential and service buildings in 2008 is 27 TWh in Bulgaria, 89 TWh in Czech Republic and 82 TWh in Romania. The implementation of existing policy measures shows energy demand reduction of 9%, 14% and 17% from 2008 to 2030 in Bulgaria, Czech Republic and Romania respectively. The results show different energy saving potentials among the countries. These differences are due to different policy instruments, different climate conditions, energy prices and costs of investments which have an impact on the effectiveness of renovation measures and the corresponding renovation rate of the building stock, which is often considered as the main indicator for an effective policy. The full paper will also include an economic comparison of renovation activities in the selected countries which will form the basis regarding conclusions for economic incentives of policy making.

Keywords: Energy efficiency, building sector, energy modelling, EPBD, policy instruments