The State and Perspective of Belgrade District Heating System Development

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District heating (DH) system in Belgrade provides energy for heating of more than 21 million m2 in households (app. 50% of all households), public, commercial and industry sectors. Public Utility Company "Beogradske elektrane" is responsible for all segments of the DH system operation. The system is fueled mostly by natural gas. The share of renewables is negligible. The research analyzes effects of implementation of two main projects proposed in the Development Strategy of the PUC - the introduction of heat energy produced in Thermal power plant "Nikola Tesla A" (600 MW) and in CHP waste incineration plant in Vinča (56.5 MW). These projects are analyzed from energy and environmental aspects. Projections of fuel mix in Belgrade DH system for the period until 2030 are presented supported with appropriate indicators (P/F ratio, import dependency, primary/final energy consumption, GHG and pollutants emissions). Projections are given and indicators are calculated for 4 different scenarios, analyzing different demand of consumers (BAU, energy efficiency measures, measurement of delivered heat, and payment based on the measured value, etc.) Although obtained results show different levels of reduction in energy consumption and emission, the production of heat energy remains based on combustion processes. Therefore, some other, non-combustible energy sources should be considered in order to make the Belgrade DH system more sustainable.

Keywords: district heating, Belgrade, development