POTROŠNJA TOPLOTNE ENERGIJE GREJANOG STANA PRI NEGREJANJU JEDNOG ILI VIŠE SUSEDNIH STANOVA STAMBENE ZGRADE U KRAGUJEVCU

HEATING CONSUMPTION OF A HEATED APARTMENT DURING UNHEATING OF ONE OR MORE NEIGHBORING APARTMENTS OF A RESIDENTIAL BUILDING IN KRAGUJEVAC

Nebojša LUKIĆ,
Fakultet inženjerskih nauka Univerziteta u Kragujevcu, Kragujevac, lukic@kg.ac.rs
Novak NIKOLIĆ,
Fakultet inženjerskih nauka Univerziteta u Kragujevcu, Kragujevac, novak.nikolic@kg.ac.rs
Srđan TASIĆ
Fakultet inženjerskih nauka Univerziteta u Kragujevcu, Kragujevac

Zakonom o efikasnom korišćenju energije (Sl.gl. 25/13), predviđeno je da od početka grejne sezone 2014/15. svi sistemi centralnog grejanja u Srbiji pređu na tarifni sistem naplate po utrošku. Upotrebom mernih i regulacionih uređaja potrošači su motivisani da smanje temperaturu vazduha u svojim stanovima. Najveću motivaciju imaju potrošači koji žive u stanovima koji imaju najmanje spoljašnjih (slobodnih) površina. Negativna strana toga je da potrošači koji žive u susednim stanovima imaju veću potrošnju energije za grejanje. Cilj ovog rada je da ukaže na to kako se menja potrošnja energije grajanog stana, tokom grejne sezone i 15 najhladnijih dana u grejnoj sezoni, pri isključivanju grejnih tela u jednom ili više susednih stanova jedne stambene zgrade u Kragujevcu. Za pomenutu analizu odabran je stan koji ima najmanji broj spoljašnjih površina (stan 8). Analiza je uključivala 4 slučaja negrejanja stanova (negrejanje jednog, dva, tri i četiri stana susedna stanu 8). Dobijeni rezultati ukazuju da potrošnja toplotne energije drastično raste sa brojem negrejanih stanova. Procentualno povećanje potrošnje energije, tokom grejne sezone, u okviru stana 8 prema broju negrejanih stanova iznosi, respektivno: 8,77%, 23,59%, 40,31% i 52,33%. Takođe, analizirana je potrošnja toplotne energije stana 8 tokom 15 najhladnijih dana u sezoni. Vrednosti procentualnog povećanja potrošnje toplotne energije za ovaj stan i scenario, prema broju negrejanih stanova iznose, respektivno: 5,47%, 18,81%, 34,30% i 43,09%.

Ključne reči: *potrošnja toplotne energije; simulacija; stambena zgrada;*

Abstract in English. The Law on Efficient Use of Energy (Official Gazette 25/13) provides that from the beginning of the heating season of 2014/2015 all central heating systems in Serbia should switch to the tariff system based on consumption. By using measuring and regulating devices the consumers are motivated to reduce the air temperature in their apartments. The highest motivation have consumers who live in apartments that have minimum outdoor (free) surfaces. The downside of this is that consumers who live in neighboring apartments have a higher heating consumption. The aim of this paper is to indicate how heating consumption of heated apartment changes during the heating season and the 15 coldest days in the heating season, when the heaters in one or more neighboring apartments of a residential building in Kragujevac are turned off. For the mentioned analysis the apartment that has the lowest number of outdoor surfaces (apartment 8) is selected. The analysis includes 4 cases of unheating of apartments (unheating of one, two, three and four apartments adjacent to apartment 8). The results indicate that heating consumption dramatically increases with the number of unheating apartments. Percentage increase of heating consumption during the heating season for the apartment 8 in relation to the number of unheating apartments is, respectively: 8.77%, 23.59%, 40.31% and 52.33%. Also, the heating consumption of the apartment