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B O S N A I H E R C E G O V I N A
FEDERACIJA BOSNE I HERCEGOVINE
FEDERALNI ZAVOD ZA STATISTIKU

B O S N I A A N D H E R Z E G O V I N A
FEDERATION OF BOSNIA AND HERZEGOVINA
INSTITUTE FOR STATISTICS OF FB&H

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ANKETA O POTROŠNJI ENERGIJE U DOMAĆINSTVIMA/KUĆANSTVIMA 2015 Konačni rezultati

SURVEY ON ENERGY CONSUMPTION IN HOUSEHOLDS 2015
Final results

Statističko istraživanje Anketa o potrošnji energije u domaćinstvima provedena je prvi put u 2015. godini na teritoriji cijele Bosne i Hercegovine.

Cilj ankete o potrošnji energije u domaćinstvima je poboljšanje statističkih podataka o krajnjoj energetske potrošnji u domaćinstvima sa posebnim osvrtom na korištenje obnovljivih izvora energije.

Anketom o potrošnji energije u domaćinstvima prikupljeni su podaci o potrošnji svih energenata za grijanje, kuhanje, pripremu tople vode, za hlađenje, upotrebu kućanskih aparata i ličnih automobila u domaćinstvu.

Statistical survey on Household Energy Consumption was conducted in 2015 for the first time on the complete territory of Bosnia and Herzegovina.

The purpose of survey of Household Energy Consumption is to improve the data of final consumption of energy commodities in households, with special emphasis on renewable energy.

Statistical survey on Household Energy Consumption refers to the collection of data on consumption of energy commodities for heating, cooking, preparation of hot water, cooling, using appliances and private cars in the household.

Tabela 1. Prosječan broj članova domaćinstva

Table 1. Average number of households

	Broj članova domaćinstva Number of households	
Federacija BiH	3,2	Federation B&H
Gradsko	2,9	Urban
Ostalo	3,3	Rural

Tabela 2. Domaćinstva prema vrsti stambene jedinice

Table 2. Households by type housing units

	Porodične kuće Family houses	Stan u zgradi Dwelling in buildings	%
Federacija BiH	81,4	18,6	Federation B&H
Gradsko	61,4	38,6	Urban
Ostalo	98,3	1,7	Rural

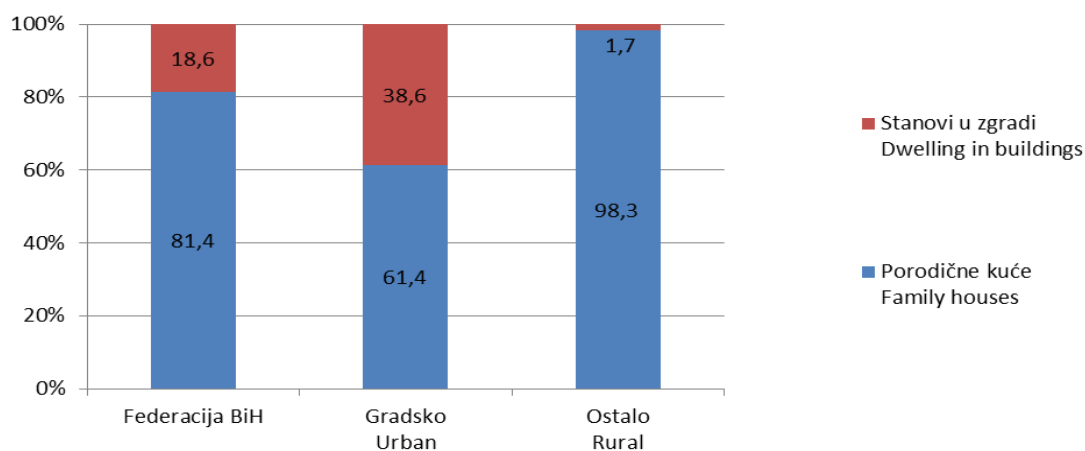


Tabela 3. Prosječna površina stambene jedinice

Table 3. Average floor area of the dwelling

	Prosječna površina Average floor area	Površina koja se grije Heated floor area	Površina koja se hladi Cooled floor area	m ²
Federacija BiH	90,0	55,8	39,1	<i>Federation B&H</i>
Gradsko	80,9	56,2	36,7	<i>Urban</i>
Ostalo	97,6	55,4	42,7	<i>Rural</i>

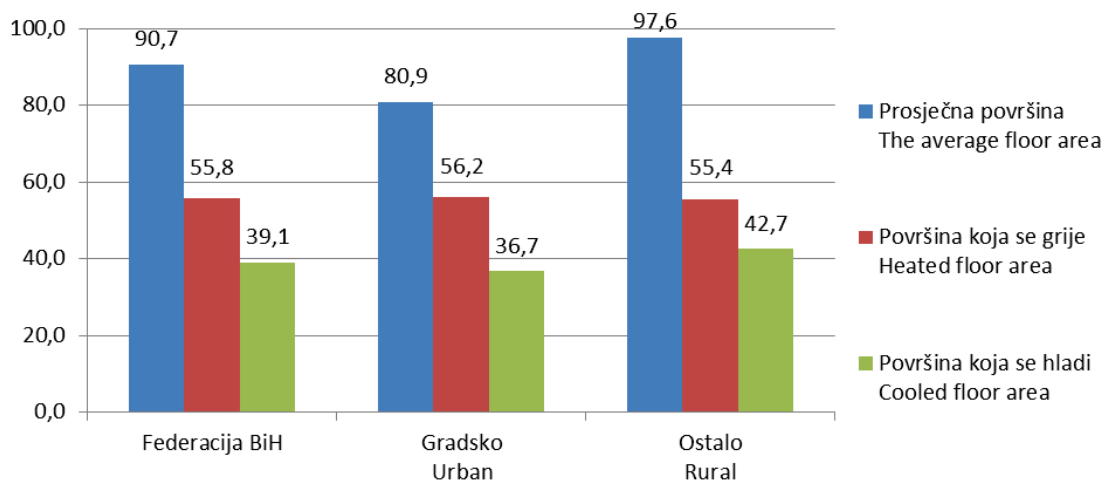
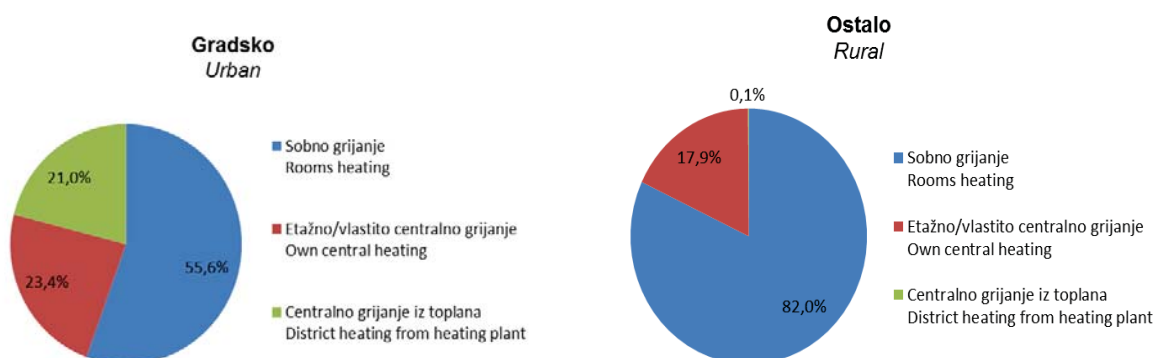


Tabela 4. Domaćinstva prema načinu zagrijavanja stambene jedinice

Table 4. Households by type of heating of the dwelling

	Ne grije se Non heated	Sobno grijanje Rooms heating	Etažno/vlastito centralno grijanje Own central heating	Centralno grijanje iz toplana District heating from heating plans	%
Federacija BiH	0,1*	69,8	20,4	9,6	<i>Federation B&H</i>
Gradsko	0,2*	55,5	23,4	21	<i>Urban</i>
Ostalo	0,1*	81,9	17,9	0,1	<i>Rural</i>



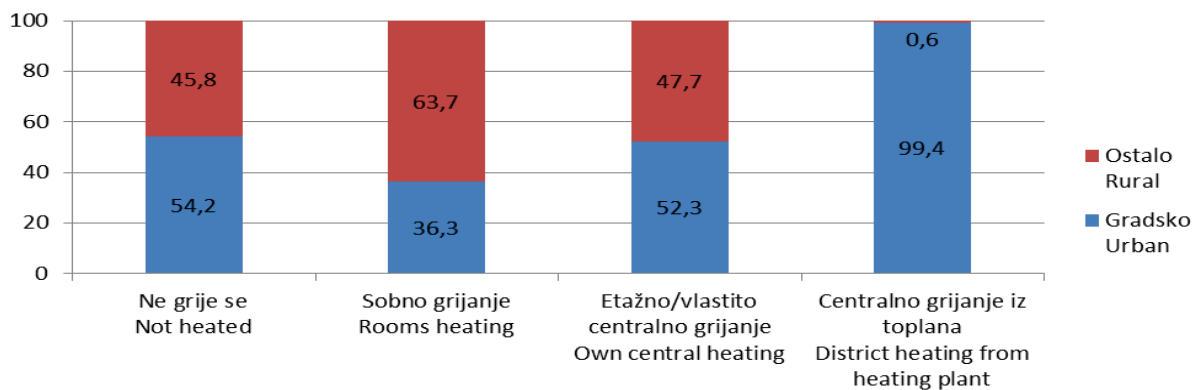


Tabela 5. Domaćinstva prema vrsti energenta koji se uglavnom koriste za sobno grijanje

Table 5. Households by energy commodities which are mainly used for rooms heating

	Električna energija Electricity	Prirodni plin Natural gas	Lož ulje Fuel oil	Ugalj Coal	Drvo Wood	%
Federacija BiH	5,9	1,4	0,1*	8,6	84,0	Federation B&H
Gradsko	13,7	3,9	0,0	5,7	76,7	Urban
Ostalo	1,4	0,0	0,1	10,2	88,2	Rural

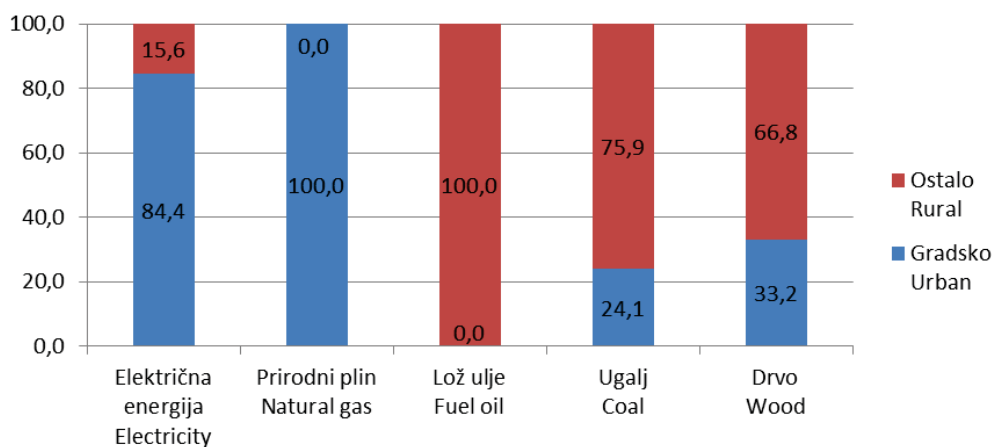
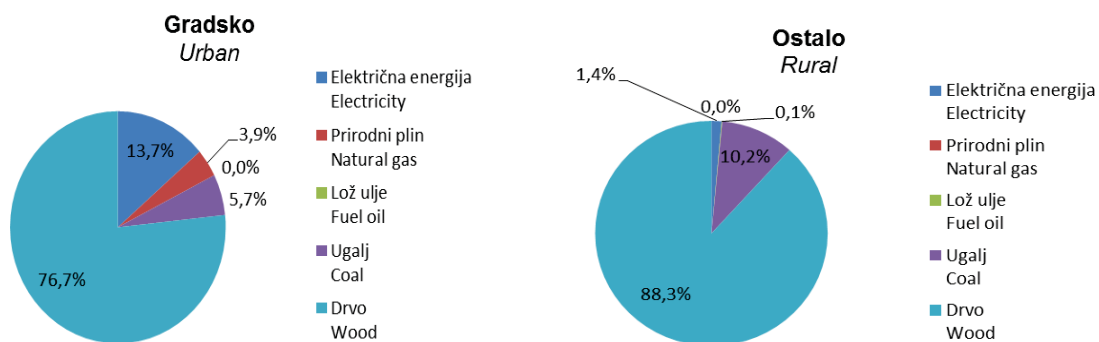


Tabela 6. Domaćinstva prema vrsti energenta koji se uglavnom koriste za etažno/vlastito grijanje

Table 6. Households by energy commodities which are mainly used for own central heating

	Električna energija Electricity	Prirodni plin Natural gas	Lož ulje Fuel oil	Ugalj Coal	Drvo Wood	
Federacija BiH	1,2*	13,4	1,4*	38,8	45,1	Federation B&H
Gradsko	1,7	25,1	1,0	31,5	40,7	Urban
Ostalo	0,6	0,6	1,9	46,9	50	Rural

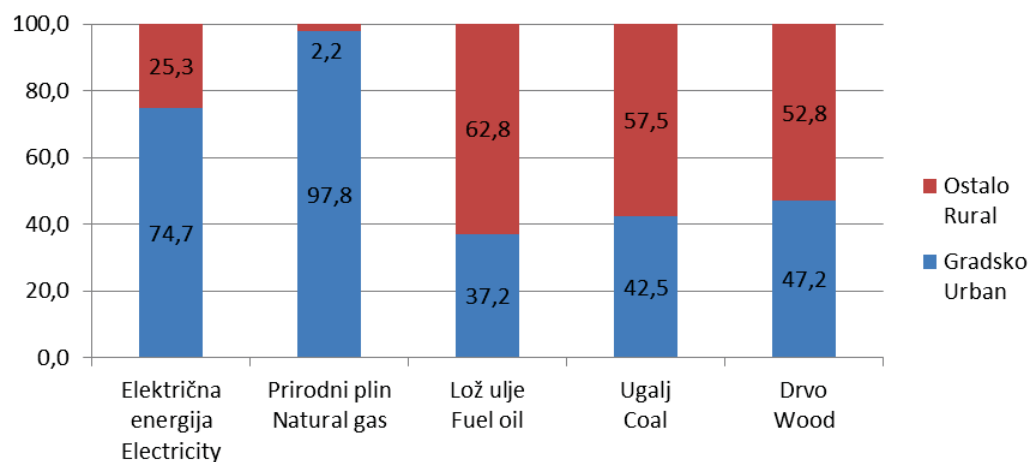
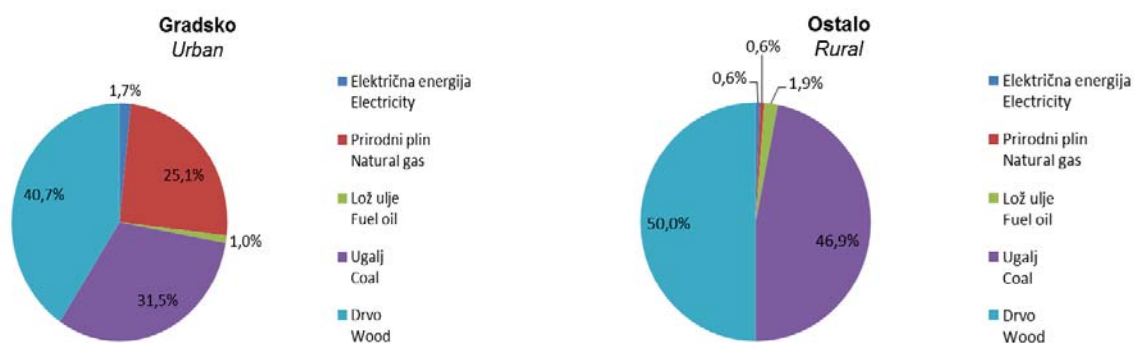


Tabela 7. Domaćinstava prema broju korištenih energenata za kuhanje

Table 7. Households by number of energy commodities used for cooking

				%
	Domaćinstva koja koriste jedan energent Households using only one energy commodity	Domaćinstva koja koriste dva energenta Households using two or more energy commodity		
Federacija BiH	37,9	62,1	Federation B&H	
Gradsko	48,7	51,3	Urban	
Ostalo	28,8	71,2	Rural	

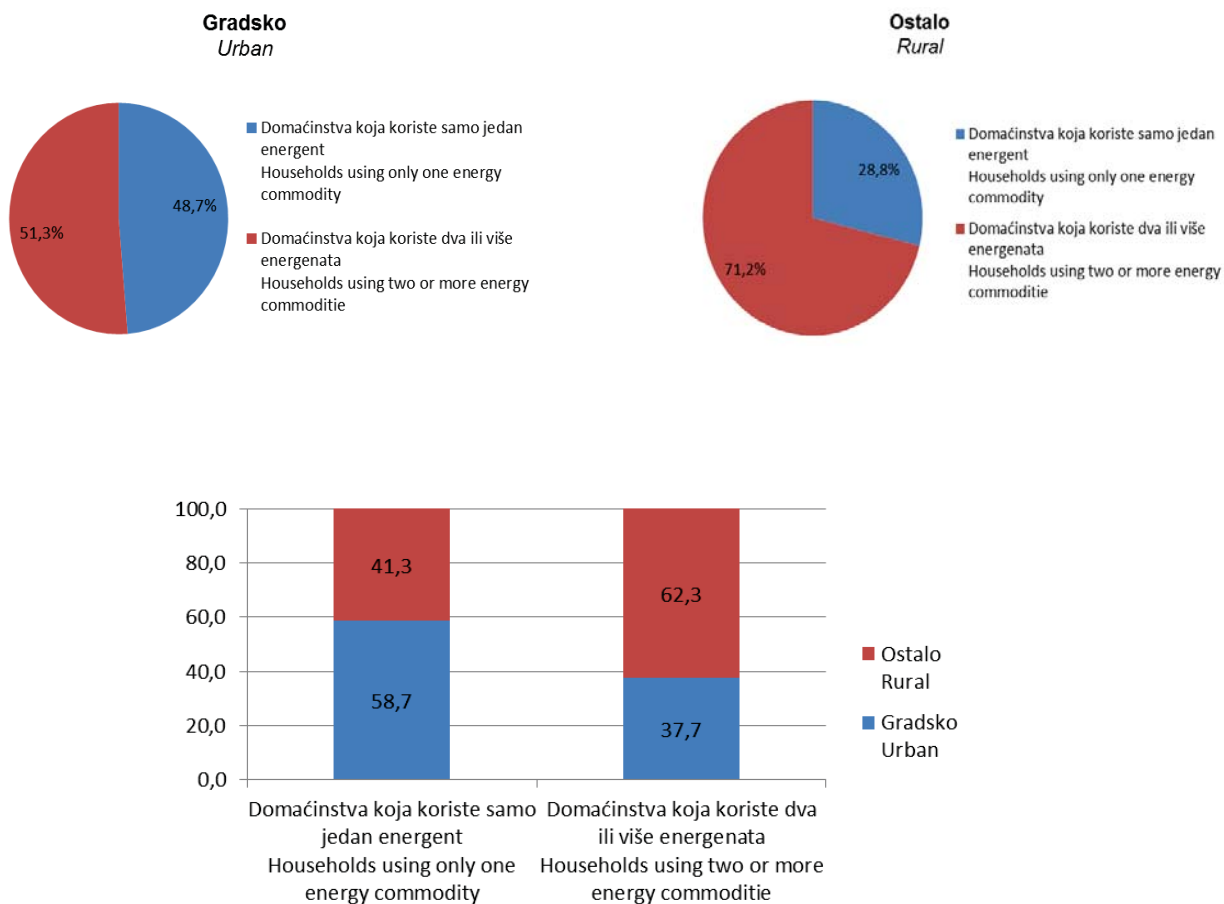


Tabela 8. Domaćinstva koja koriste jedan energent za kuhanje, prema vrsti energenta

Table 8. Households using one commodity for cooking, by type of commodities

	Električna energija Electricity	Prirodni plin Natural gas	Lož ulje Fuel oil	Drvo Wood	%
Federacija BiH	76,4	3,6**	3,0**	17,0	<i>Federation B&H</i>
Gradsko	89,4	5,7	2,3**	2,6	<i>Urban</i>
Ostalo	57,9	0,6*	4,1	37,4	<i>Rural</i>

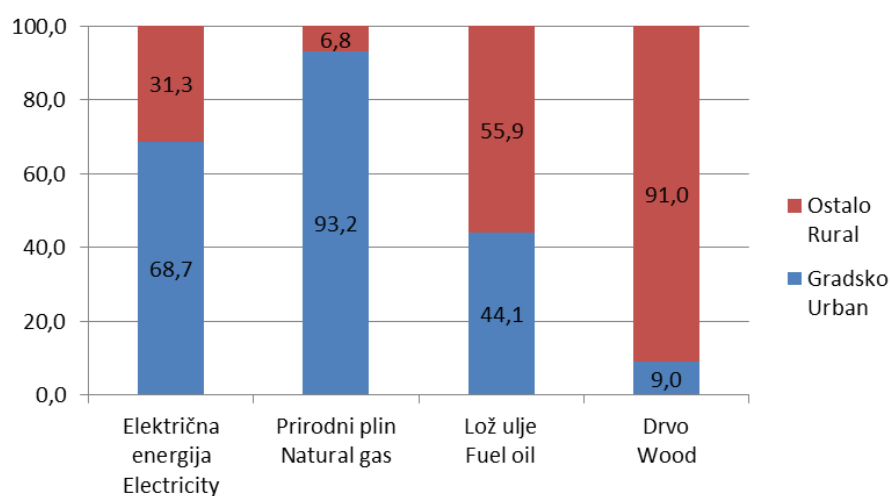
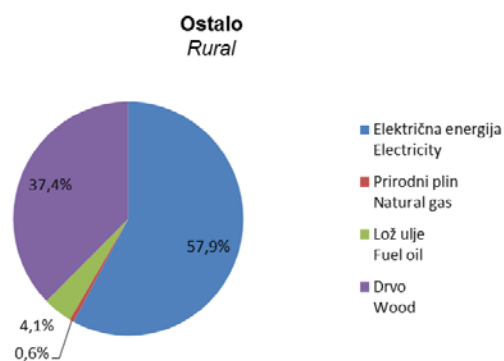
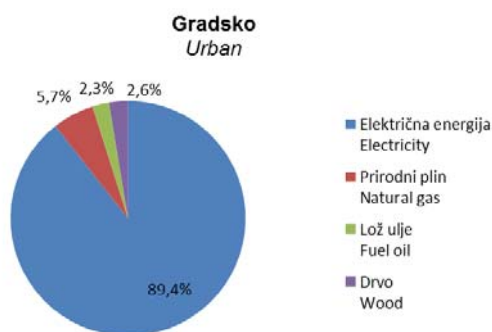


Tabela9. Domaćinstva prema vrsti instalacija/opreme za pripremu tople vode

Table 9. Households by type of installation / equipment for hot water

				%
	Elektricni bojler <i>Electric water heater</i>	Kombinacija električnog bojlera i druge instalacije <i>Combination of electric water heaters and other installations</i>	Ostalo <i>Other</i>	
Federacija BiH	89,7	1,2**	9,0	<i>Federation B&H</i>
Gradsko	88,9	1,3**	9,8	<i>Urban</i>
Ostalo	90,3	1,2**	8,4	<i>Rural</i>

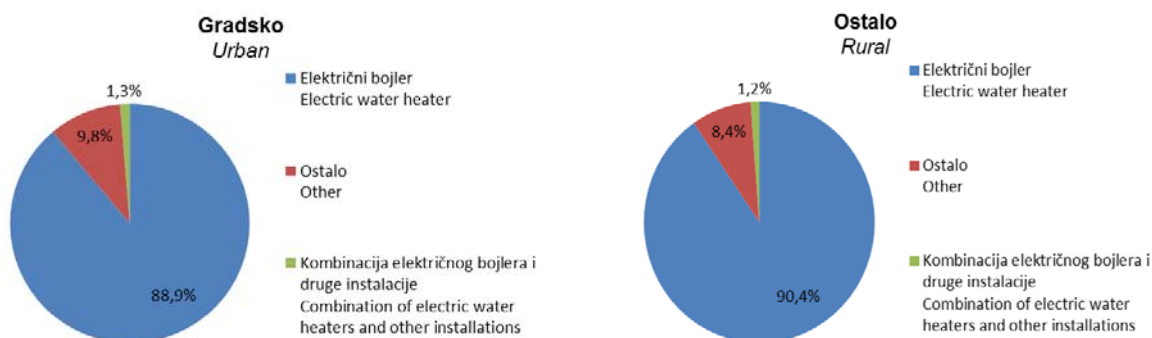
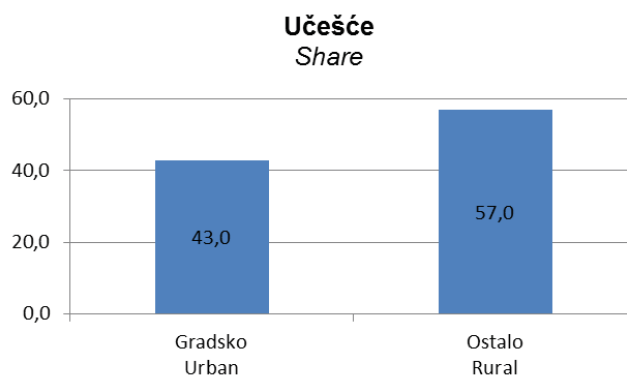


Tabela 10. Domaćinstva prema posjedovanju automobila

Table 10. Households by availability of a car

	Domaćinstva koja posjeduju automobil <i>Households that own a car</i>	Broj automobila <i>Number of car</i>			
		jedan <i>one</i>	dva <i>two</i>	tri <i>three</i>	
Federacija BiH	53,9	89,8	8,8	1,4***	<i>Federation B&H</i>
Gradsko	50,7	90,2	9,2	0,6**	<i>Urban</i>
Ostalo	56,6	89,6	8,5	2,0***	<i>Rural</i>



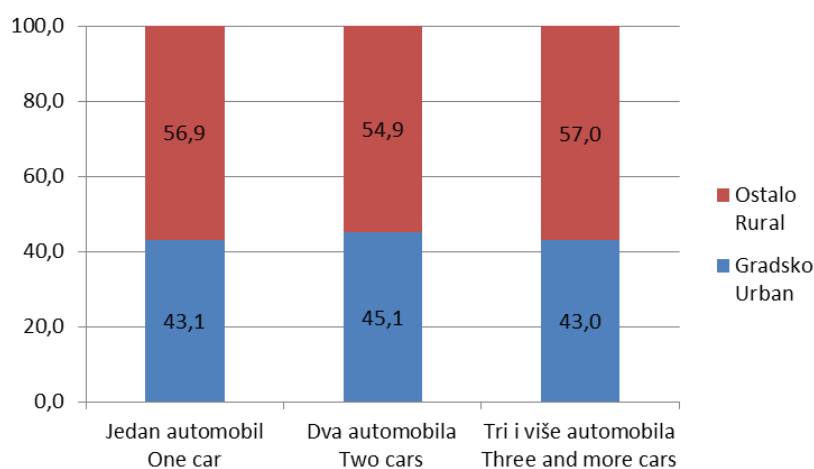
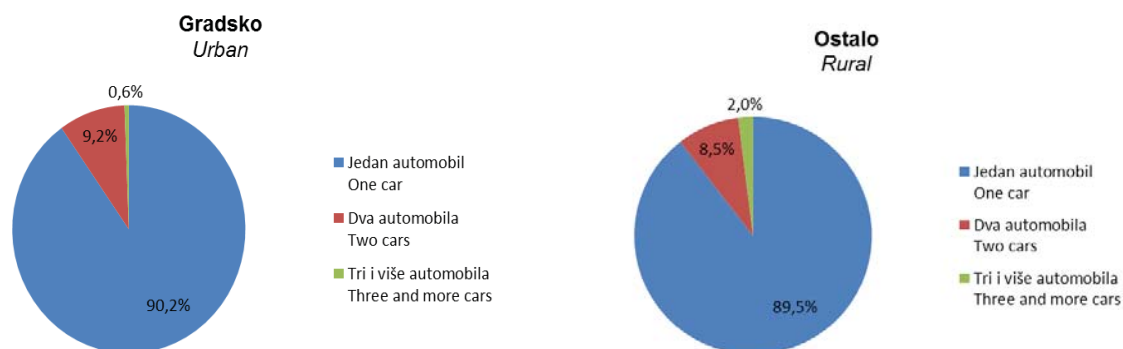


Tabela 11. Domaćinstva prema posjedovanju aparata/opreme

Table 11. Households by availability of appliances/equipment

Aparati/oprema	Federacija <i>Federation B&H</i>	Gradsko <i>Urban</i>	Ostalo <i>Rural</i>	Appliances/ equipment
Frižider bez zamrzivača	35,7	23,6	45,8	Refrigerator
Frižider sa zamrzivačem	68,2	79,6	58,6	Fridge freezer
Zamrzivač	44,4	29,4	57,0	Freezer
Mašina za veš	95,3	96,5	94,2	Washing machine
Sušilica za veš	4,8	6,3	3,4	Tumble dryer
Mašina i sušilica za veš	1,6	2,9	0,6	Washer/tumble-dryer
Mašina za pranje suđa	23,6	30,5	17,8	Dishwasher
Mikrovalna pećnica	41,0	51,8	31,9	Microwave
Kuhalo za vodu	46,0	47,5	44,7	Kettle
TV	98,8	98,9	98,7	TV
Računar/laptop	52,8	59,4	47,4	Computer/laptop
Printer/šampač	7,6	10,8	5,0	Printer

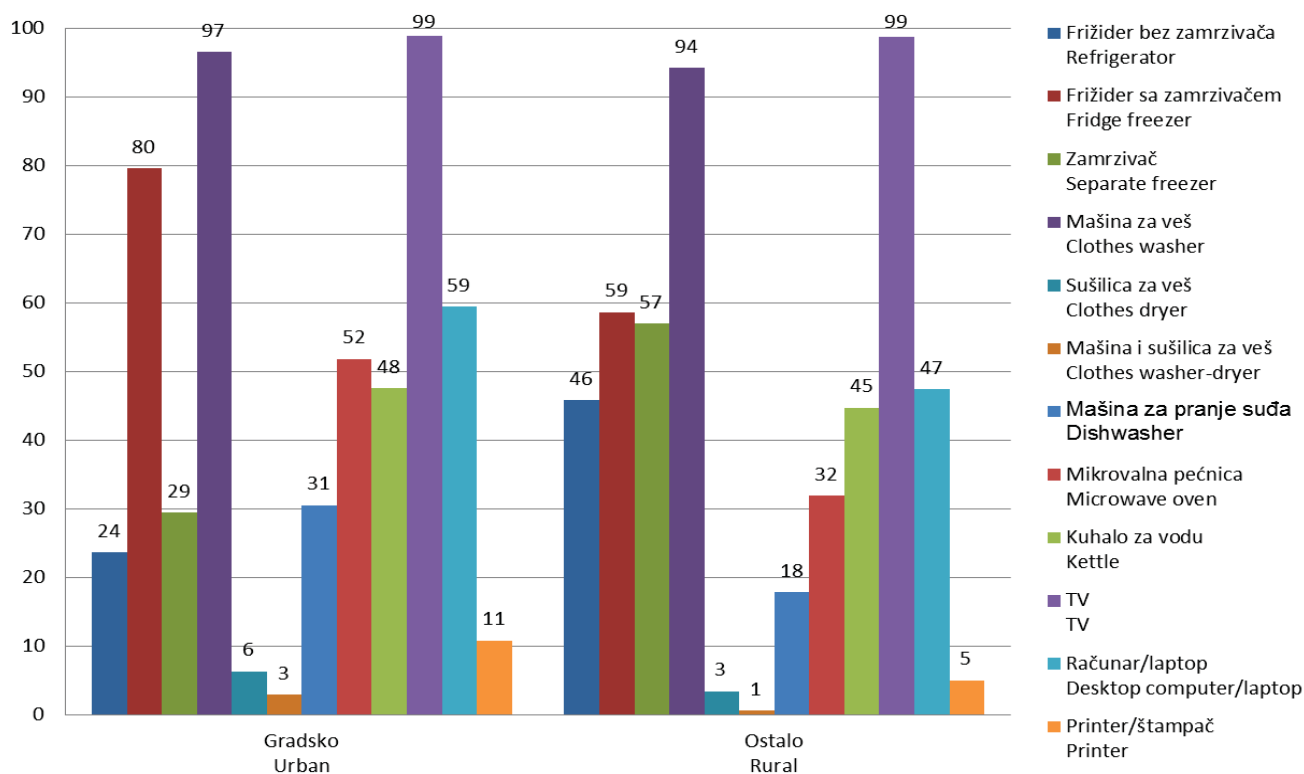


Tabela 12. Prosječna godišnja potrošnja energenata, po domaćinstvu

Table 12. The average annual commodities consumption in households

Vrsta energenta	Jedinica mjere Unit	Federacija BiH Federation B&H	Gradsko Urban	Ostalo Rural	Type of nenergy
Električna energija	kWh	4.483	4.617	4.371	Electricity
Prirodni plin	Sm³	872	892	503	Natural gas
Tečni naftni plin	kg	64	61	66	LGP
Ogrijevno drvo	prm	9,5	8,6	9,9	Wood
Drvni sortimenti i poljop.otpad	kg	3.685	3.510	4.061	Wood and agricultural waste
Ugalj	tona/tones	3,8	4,2	3,7	Coal
Toplota	kWh	7.863	7.816	-	Heat

Uvod

Federalni zavod za statistiku BiH, u saradnji sa Agencijom za statistiku Bosne i Hercegovine i Republičkim zavodom za statistiku RS, proveo je statističko istraživanje Anketa o potrošnji energije u domaćinstvima - APED 2015.

Anketa je provedena u sklopu projekta „Implementacija evropske legistlative u Energetskoj zajednici“ u saradnji sa Energetskim institutom „Hrvoje Požar“ iz Zagreba, a uz tehničku i finansijsku podršku Sekretarijata Energetske zajednice.

Anketom su prikupljeni podaci o potrošnji svih energenata koji se koriste za grijanje/hladjenje stambenih jedinica, za kuhanje, za pripremu tople vode i o upotrebi kućanskih aparata. Podaci se odnose na potrošnju energije u posljednjih 12 mjeseci do dana anketiranja domaćinstva. Prikazani podaci prikupljeni su u skladu sa Regulativom Energetske zajednice 1099/2008 o energetskoj statistici.

Uzorak

Anketa je provedena na teritoriji Bosne i Hercegovine na uzorku od 7.083 domaćinstava (u Federaciji Bosne i Hercegovine 3.554, Republici Srpskoj 2.369 i Brčko Distriktu BiH 1.160 domaćinstava).

Dizajn uzorka domaćinstava za ovu Anketu rađen je na Master okviru za uzorak iz 2009. godine.

Uzorak za APED 2015 je dizajniran kao stratifikovani dvoetafni slučajni uzorak, sa popisnim krugovima kao primarnim i domaćinstvima kao sekundarnim jedinicama izbora. Ponderi su izračunati u dva koraka. U prvom koraku svakom domaćinstvu izabranom u uzorak dodijeljen je ponder uzorka. U drugom koraku izvršeno je prilagođavanje na osnovu neodgovora. Stopa neodgovora u APED 2015 iznosila je 14,5%.

Prva grupa rezultata Ankete pokazuje osnovne karakteristike domaćinstava kao što su broj članova domaćinstava i karakteristike stambenih objekata.

Druga grupa rezultata pokazuje karakteristike potrošnje energije za grijanje, pripremu tople vode, kuhanje i hlađenje prostora; površine grijanog i hlađenog prostora.

Treća grupa prikazuje potrošnju pojedinih energenata u 2015. godini: električne energije, prirodnog plina, toplinske energije, drveta, uglja, te derivate nafte.

ZNAKOVI

- * podatak je izuzetno statistički nesiguran
- ** podatak je statistički nesiguran
- *** podatak je statistički manje siguran
- nema pojave

Podatak je izuzetno statistički nesiguran ako je broj pojava u uzorku manji od 20.

Podatak je statistički nesiguran ako se broj pojava u uzorku kreće između 20-39.

Podatak je statistički manje siguran ako se broj pojava u uzorku kreće između 40-49.

Introduction

Federal Office of Statistics in cooperation with the Agency for Statistics of Bosnia and Herzegovina and the Institute of Statistics RS, conducted Survey on Energy Consumption in households - APED 2015.

The survey was carried out as part of the „Implementation of the European Legislation in the Energy Community“ project in cooperation with the „Energy Institute Hrvoje Požar“ from Zagreb. The Energy Community Secretariat provided technical and financial support.

The Survey served to collect data on consumption of all energy commodities used for heating/cooling of dwellings, for cooking and for production of domestic hot water, as data on the use of household appliances. The data refer to the consumption of energy in the 12 months preceeding the interviews in households. Presented data were collected in accordance with the Energy Community to the totals provided.

Sample

The Survey was carried out on the territory of Bosnia and Herzegovina with a sample consisting of 7,083 households (3,554 in the Federation of Bosnia and Herzegovina, 2,369 households in Republika Srpska and 1,160 in Brčko District).

The design of the sample of households for this Survey was carried out in the framework of the 2009 Master sample.

The sample for HECS 2015 was designed as a stratified two-stage random sample, with enumeration areas as primary selection units and households as secondary ones. Weights were calculated through two steps. In the first step, each sampled household is assigned a sample weight. In the second step, non-response-based adjustments are made. The non-response rate in HECS 2015 was 14,5%.

The first set of survey results show the basic characteristics of households such as the number of household members and characteristics of the housing units.

The second group of results shows characteristics of energy consumption for heating, hot water and cooking and cooling; the size of heated and cooled space.

The third group of results shows the consumption of energy commodities in 2015 electricity, natural gas, heat energy, wood, coal and oil products.

SIGNS

- * the information is extremely statistically not reliable
- ** the information is statistically not reliable
- *** the data was statistically less reliable
- no appearance

The data is extremely statistically uncertain if the number of occurrences in the sample is less than the 20.

The data is statistically uncertain if the number of occurrences in the sample is between 20-39.

The data is statistically less reliable if the number of occurrences in the sample is between 40-49.

DEFINICIJE

Domaćinstvom se smatra svaka porodična ili druga zajednica osoba koje se izjasne da zajedno stanuju i zajednički troše svoje prihode za podmirivanje osnovnih životnih potreba.

Jedinica za stanovanje se definiše kao građevinski povezana cjelina namijenjena za stanovanje, koja se sastoji od jedne ili više soba s odgovarajućim pomoćnim prostorijama (kuhinjom, ostavom, predsobljem, kupatilom, toaletom i sl.) ili bez pomoćnih prostorija, te ima svoj zasebni ulaz.

Ukupna površina stambene jedinice je podna površina mjerena unutar zidova stana, i predstavlja zbir površina soba, kuhinje, kupatila, toaleta, ostave, hodnika, te ostalih pomoćnih prostorija u sastavu stambene jedinice.

Etažno/vlastito centralno grijanje je vrsta grijanja u kućama i zgradama gdje se toplota proizvodi na jednom centralnom mjestu, te se ta toplota raznosi koristeći vodu ili zrak kroz cijevnu mrežu do ispušnih izlaza (zrak), ili preko radijatora (voda).

Toplinske pumpe su sistemi jeftinog i ekološki čistog načina grijanja. One mogu crpiti toplotu iz vode, zemlje ili zraka. Rade na principu sličnom kao i rashladni uređaji. Najjednostavniji oblici toplinskih pumpi su klima uređaji koji griju i hlade, tzv. inverteri.

Centralno grijanje iz toplana je infrastruktura koja omogućuje da se toplota proizvedena na centralnoj lokaciji prenosi do stambenih i poslovnih zgrada na širem području.

Loživa ulja su svi tekući naftni proizvodi koji izgaraju u pećima i kotlovima za proizvodnju toplote.

Količina drveta se najčešće obračunava u **prostornim metrima** (prostor od 1 metra kubnog u kojem su složena drva; jedan prostorni metar drva je jednak oko 0,7 kubnih metara drveta).

Drvni peleti su standardno oblikovani štapići proizvedeni od biomase.

Drvni briketi predstavljaju kompaktne forme drvnih goriva koji se dobijaju fizičkim sabijanjem usitnjenog drvnog materijala u odgovarajućim presama (mehaničkim i hidrauličkim).

Poljoprivredni otpad je biogorivo koje predstavljaju ostaci iz poljoprivrede: kukuruzovina, stabljike suncokreta, slama, ljuske od povrća, orahova ljuska, pruće, komina od maslina i drugi otpad nastao pri održavanju, rezanju i preradi biljaka.

DEFINITIONS

Household is every family or other community of persons who declare themselves to live together and spend their income on basic necessities.

Housing unit is defined as a construction, consisting of one or more rooms and auxiliary rooms (kitchen, pantry, hallway, bathroom, toilet, etc.) or without them, and has its own entrance.

The **total area of the housing unit** is a floor area measured inside the walls of the dwellings, and is the sum of surface room, kitchen, bathroom, toilet, utility room, hallway other utility rooms in the dwellings.

Central heating is a type of heating in homes and buildings where the heat is produced in one central location, and the heat is spread by using water or air through the pipe network to the exhaust outlet (air), or via the radiator (water).

Heat pumps systems are cheap and ecologically clean heating methods, draw heat from the water, land or air. Heat pumps work on a principle similar of cooling equipment. The simplest forms of heat pumps are air conditioners that are heated and cooled, so-called inverter.

Central district heating is infrastructure, which allows that heat generated at the central location is transferred to residential and commercial buildings in the wider area.

Fuel oils are all liquid petroleum products that are pronounced in furnaces and boilers to produce heat.

The amount of wood is usually calculated in **spatial meters** (an area of 1 cubic meter in which there are of wood (one spatial meter of wood is equivalent to about 0.7 cubic meters of wood)).

Wood pellets are a standard shaped sticks produced from biomass.

Wood briquettes are compact form of wood which are obtained by physical compression of crushed wood material in appropriate presses (mechanical and hydraulic).

Agricultural waste is a biofuel which are residues from agriculture: corn stalks, sunflower stalks, straw, vegetable peelings, nutshell, twigs and other waste generated during maintenance, cutting and processing plants.

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