



# PRIOPĆENJE

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GODINA/ YEAR I

SARAJEVO, 26.12.2023.

BROJ/ NUMBER 1

## OKOLIŠ - FIZIČKI RAČUNI OKOLIŠA

### ENVIRONMENT- PHYSICAL ENVIRONMENTAL ACCOUNTS

#### Računi emisija u zrak

##### *Air emissions accounts*

U priopćenju su prikazane emisije stakleničkih plinova i zagađujućih materija za Bosnu i Hercegovinu za vremensko razdoblje od 2017. do 2021. godine.

*The emissions of greenhouse gases and air pollutants are presented for the period from 2017 to 2021 for the Bosnia and Herzegovina*

Ukupno ispuštene emisije stakleničkih plinova u zrak u 2021. su se povećale u odnosu na 2020. za 2,1%.

*The total emissions of greenhouse gases into the air in 2021 increased compared to 2020 by 2.1%.*

Ukupno ispuštene emisije stakleničkih plinova u zrak u 2021. su smanjene za 6,5% u odnosu na 2017. godinu.

*The total emissions of greenhouse gases into the air in 2021 were reduced by 6.5% compared to 2017.*

U 2021. godini najveće količine ispuštenih stakleničkih plinova bile su emisije CO<sub>2</sub>, 25 361 tisuća tona (Gg) (bez emisija iz biomase kao goriva), i CH<sub>4</sub> Metan 15 864 tona (Mg).

*In 2021, the highest greenhouse gas emissions were CO<sub>2</sub> emissions (excluding biomass emissions as fuel), 25 361 thousand t (Gg) and CH<sub>4</sub>, 15 864 t (Mg).*

Od svih zagađujućih materija u 2021. godini, ugljen monoksid (CO) je imao najveću emisiju (237 968 t (Mg)), što je neznatno smanjenje u odnosu na 2020. godinu za 0,1%.

*Out of all pollutants in 2021, carbon monoxide CO recorded the highest emissions, 237,968 t (Mg), which is a slight decrease compared to 2020 by 0.1%.*

Zabilježeno je blago smanjenje emisija čvrstih čestica PM<sub>10</sub> i PM<sub>2.5</sub> u 2021 godini u odnosu na prethodnu godinu i to za 0,7% (PM<sub>10</sub>) i 1,0% (PM<sub>2.5</sub>).

*There was a slight reduction in emissions in 2021 particulate matter PM<sub>10</sub> and PM<sub>2.5</sub> compared to previous year, 0.7% (PM<sub>10</sub>) and 1.0% (PM<sub>2.5</sub>)*

#### Ukupne emisije stakleničkih plinova, Bosna i Hercegovina, 2017.-2021. Gg CO<sub>2</sub>-eq

*Total emissions of greenhouse gases, Bosnia and Herzegovina, 2017-2021, Gg CO<sub>2</sub>-eq*

Ukupno / Total	2017.	2018.	2019.	2020.	2021.
(Gg CO <sub>2</sub> -eq)	27.744	28.228	28.173	25.430	25.966

## Emisije u zrak, Bosna i Hercegovina, 2017.-2021.

Air emissions, Bosnia and Herzegovina, 2017-2021

	2017.	2018.	2019.	2020.	2021.	
<b>CO<sub>2</sub> (bez emisija iz biomase kao goriva) '000 tona (Gg)</b>	27.431	27.649	27.579	24.814	25.361	<i>CO<sub>2</sub> (without emissions from biomass as a fuel) '000 tonnes(Gg)</i>
<b>CO<sub>2</sub> iz biomase '000 tona (Gg)</b>	415	382	538	407	472	<i>Biomass CO<sub>2</sub>, '000 tonnes(Gg)</i>
<b>N<sub>2</sub>O, tona (Mg)</b>	560	687	693	691	699	<i>N<sub>2</sub>O, tonnes(Mg)</i>
<b>CH<sub>4</sub>, tona (Mg)</b>	5.821*	14.987	15.520	16.377	15.864	<i>CH<sub>4</sub>, tonnes(Mg) <sup>1</sup></i>
<b>NO<sub>x</sub>, tona (Mg) NO<sub>2</sub>-ekvivalenata</b>	60.358	61.335	58.415	57.953	59.577	<i>NO<sub>x</sub>, tonnes (Mg) NO<sub>2</sub>-equivalents</i>
<b>SO<sub>x</sub>, tone (Mg) SO<sub>2</sub>-ekvivalenata</b>	257.237	252.416	227.350	236.890	225.654	<i>SO<sub>x</sub>, tonnes (Mg) SO<sub>2</sub>-equivalents</i>
<b>NH<sub>3</sub>, tona (Mg)</b>	3.505	3.504	3.568	3.747	3.599	<i>NH<sub>3</sub>, tonnes (Mg)</i>
<b>NM VOC, tona (Mg)</b>	16.295*	34.284	33.875	35.667	35.210	<i>NM VOC, tonnes (Mg)</i>
<b>CO, tona(Mg)</b>	116.049*	232.900	226.909	238.191	237.968	<i>CO, tonnes (Mg)</i>
<b>PM<sub>10</sub>, tone (Mg)</b>	18.849*	42.031	41.672	43.853	43.542	<i>PM<sub>10</sub>, tonnes (Mg)</i>
<b>PM 2.5, tone (Mg)</b>	16.959*	39.493	39.197	41.355	40.953	<i>PM<sub>2.5</sub>, tonnes (Mg)</i>

\* Smanjenje emisija uzrokovano je smanjenjem potrošnje energije u 2017. godini koji su prikazani u Energetskom bilansu za Bosnu i Hercegovinu. Najveće odstupanje je zabilježeno u sektoru kućanstava kod potrošnje "Primarna čvrsta biogoriva"

\* The decrease in emissions is caused by the decrease in energy consumption in 2017, which is shown in the Energy Balance for Bosnia and Herzegovina. The biggest deviation was recorded in the household sector in the consumption of "Primary solid biofuel"

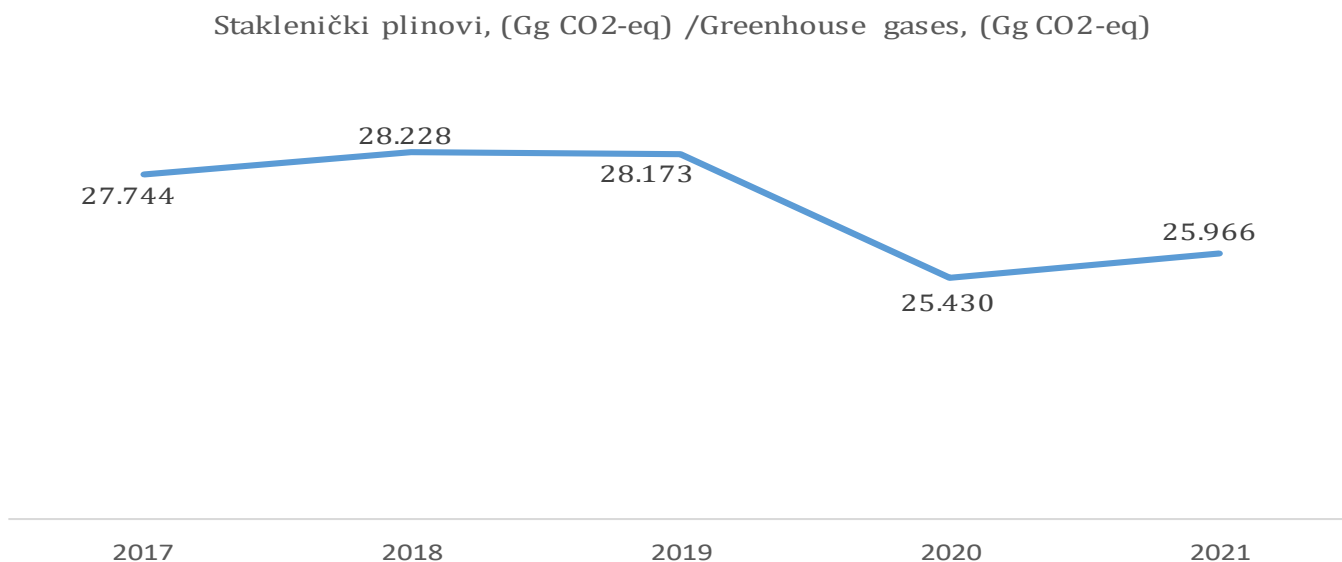
### Kratice / Abbreviations:

CO <sub>2</sub>	Ugljen dioksid
N <sub>2</sub> O	Azot- suboksid
CH <sub>4</sub>	Metan
NO <sub>x</sub>	Azotni oksidi
SO <sub>x</sub>	Sumporni oksidi
NH <sub>3</sub>	Amonijak
NM VOC	Nemetanska isparljiva organska jedinjenja
CO	Ugljen monoksid
PM <sub>10</sub>	Lebdeće čestice (manje od ili jednake 10 mikrona)
PM 2.5	Lebdeće čestice (manje od ili jednake 2,5 mikrona)

CO <sub>2</sub>	<i>Carbon dioxide</i>
N <sub>2</sub> O	<i>Nitrous oxide</i>
CH <sub>4</sub>	<i>Methane</i>
NO <sub>x</sub>	<i>Nitrogen oxides</i>
SO <sub>x</sub>	<i>Sulphur oxides</i>
NH <sub>3</sub>	<i>Ammonia</i>
NM VOC	<i>Non-methane volatile organic compounds</i>
CO	<i>Carbon monoxide</i>
PM <sub>10</sub>	<i>Particulate matter (less than or equal to 10 microns)</i>
PM 2.5	<i>Particulate matter (less than or equal to 2.5 microns)</i>

## G. 1. Ukupne emisije stakleničkih plinova po godinama, (Gg CO2-eq)

G 1. Total emissions of greenhouse gases by year, (Gg CO2-eq)



## Potencijali globalnog zagrijavanja za pojedine plinove (razdoblje 100 godina)

Table 1: Global warming potentials for individual gases (period of 100 years)

Staklenički plin	Potencijal globalnog zagrijavanja
Ugljen-dioksid (CO <sub>2</sub> )	1
Metan (CH <sub>4</sub> )	28
Azot-suboksid (N <sub>2</sub> O)	265

Izvor/Source: [https://ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29\\_1.pdf](https://ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf)

## METODOLOŠKA OBJAŠNENJA

### Pravna osnova

- Regulativa (EU) br. 691/2011 Europskog parlamenta i Vijeća od 6. srpnja 2011. o europskim ekonomskim računima okoliša (SL L 192, 22. srpnja 2011.)

- Regulativa (EU) br. 538/2014 Europskog parlamenta i Vijeća od 16. travnja 2014. o izmjenama i dopunama Regulative (EU) br. 691/2011 o europskim ekonomskim računima okoliša (27. maj 2014.)

Proizvodnja i razvoj Računa emisija u zrak (AEA) za Bosnu i Hercegovinu potpomognuta je suradnjom sa naučnom zajednicom.

Računi emisija u zrak (AEA) bilježe protok plinovitih i čestica materijala iz nacionalne ekonomije (proizvodne djelatnosti poslovnih subjekata i privatnih kućanstava) u atmosferu, na način opisan u Europskom sustavu nacionalnih računa (ESA). Nakon ulaska u atmosferu, emitirane supstance su van svake ljudske kontrole i postaju dio ciklusa prirodnih materijala i mogu izazvati nekoliko vrsta uticaja na okolinu. AEA prikazuje emisije u zrak prema podjeli po ekonomskoj aktivnosti emisija.

Za izračun emisija u zrak, Agencija za statistiku Bosne i Hercegovine je koristila pristup „Energetski prvi pristup“. „Energetski prvi pristup“ počinje od energetskih statistika/statističkog bilance koji se preuređuju u energetske račune iz kojih se izračunavaju emisije u zrak korištenjem određenih faktora emisije. Energetski bilans predstavlja sve statistički značajne energetske proizvode jedne zemlje i njihovu proizvodnju, transformaciju i potrošnju od strane različitih vrsta privrednih aktera.

### Definicije

Emisije u zrak su fizički tok plinovitih materijala ili čestica iz privrede (proizvodni ili potrošni procesi) koji zagađuju atmosferu. Emisije u zrak uključuju emisije stakleničkih plinova CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFC, PFC i SF<sub>6</sub> NF<sub>3</sub> i emisije zagađivača zraka NO<sub>x</sub>, SO<sub>x</sub>, NH<sub>3</sub>, NMHOS, CO, PM<sub>2.5</sub> i PM<sub>10</sub>.

Budući da pojedini staklenički plinovi imaju različite osobine, različito doprinose stakleničkom efektu. Kako bi se omogućilo međusobno zbrajanje i ukupni prikaz emisija, potrebno je da se emisija svakog plina pomnoži s njegovim stakleničkim potencijalom (eng. GWP - Global Warming Potential).

Staklenički potencijal je mjera utjecaja nekog plina na staklenički efekat u odnosu na utjecaj CO<sub>2</sub>. U tom slučaju emisija stakleničkih plinova iskazuje se jedinicom Gg CO<sub>2</sub>-eq (masa ekvivalentnog CO<sub>2</sub>).

Tablica prikazuje stakleničke potencijale za pojedine plinove, koji se odnose na vremensko razdoblje od 100 godina. Ova je tablica prilagođena iz Petog izvješća o procjeni IPCC-a, 2014. (AR5) razdoblja od 100 godina.

## NOTES ON METHODOLOGY

### Legal basis

- Regulation (EU) no. 691/2011 of the European Parliament and of the Council of July 6, 2011 on European environmental economic accounts (OJ L 192, July 22, 2011)

- Regulation (EU) no. 538/2014 of the European Parliament and the Council of April 16, 2014 on amendments to Regulation (EU) no. 691/2011 on European environmental economic accounts (May 27, 2014)

*The production and development of the Air Emissions Account (AEA) for Bosnia and Herzegovina was supported by cooperation with the scientific community.*

*Air emission accounts (AEA) record the flow of gaseous and particulate materials from the national economy (production activities of business entities and private households) into the atmosphere, in the manner described in the European System of National Accounts (ESA). After joining the atmosphere, the emitted substances are out of any human control and become part of natural materials cycles and may induce several types of environmental impacts. AEA present air emissions in a breakdown by emitting economic activity.*

*To calculate air emissions, the Agency for Statistics of Bosnia and Herzegovina used the "Energy First Approach" approach. The "Energy First Approach" starts from energy statistics/statistical balances that are converted into energy accounts from which air emissions are calculated using certain emission factors. The energy balance represents all statistically significant energy products of a country and their production, transformation and consumption by various types of economic actors.*

### Definitions

*Air emissions are a physical flow of gaseous or particulate materials from economy (production or consumption processes) that pollute the atmosphere. Air emissions include emissions of greenhouse gases CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFC, PFC and SF<sub>6</sub> NF<sub>3</sub> as well as emissions of air pollutants NO<sub>x</sub>, SO<sub>x</sub>, NH<sub>3</sub>, NMVOC, CO, PM<sub>2.5</sub> and PM<sub>10</sub>.*

*Since individual greenhouse gases have different properties, they contribute differently to the greenhouse effect. In order to enable mutual addition and the total display of emissions, it is necessary to multiply the emission of each gas by its greenhouse potential (eng. GWP - Global Warming Potential).*

*Greenhouse potential is a measure of the influence of a gas on the greenhouse effect in relation to the influence of CO<sub>2</sub>. In this case, the emission of greenhouse gases is expressed in the unit Gg CO<sub>2</sub>-eq (mass of equivalent CO<sub>2</sub>).*

*Table shows the greenhouse potentials for individual gases, which refer to a time period of 100 years. This table is adapted from the IPCC Fifth Assessment Report, 2014 (AR5).100-year period*

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