AGENCIJA ZA STATISTIKU BOSNE I HERCEGOVINE
AGENCY FOR STATISTICS OF BOSNIA AND HERZEGOVINA

SAOPĆENJE
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OKOLIŠ
ENVIRONMENT

ELEKTRIČNI I ELEKTRONSKI OTPAD
Electrical and electronic waste

E-OTPAD

Otpad električne i elektronske opreme (e-otpad) kao što su računari, televizori, frižideri i mobilni telefoni je jedan od najbrže rastućih tokova otpada u EU. E-otpad je složena mješavina materijala i komponenti koji mogu uzrokovati velike ekološke i zdravstvene probleme zbog opasnog sadržaja. Da bi se poboljšalo upravljanje e-otpadom i doprinijelo kružnoj ekonomiji i povećala efikasnost resursa, neophodno je poboljšati prikupljanje, obradu i recikliranje e-otpada.

Iako računari i slični uređaji potrošačke elektronike na prvi pogled ne djeluju kao pretjerano opasan otpad, oni sadrže niz materijala, uključujući teške metale, koji mogu dovesti do ozbiljnih ekoloških i zdravstvenih posljedica ukoliko se ne odlažu i ne recikliraju na odgovarajući način. Zdravstveni rizici uzrokovani opasnim materijama u elektronskom otpadu su jedan od najbitnijih razloga za brigu o kvalitetnom zbrinjavanju takvog materijala.

Elektronski otpad sadrži između 600 i 1000 različitih hemijskih supstanci koje su štetne po zdravlje i ugrožavaju okolinu, od kojih su najprisutnije materije: olovo, živa, hrom, kadmijum, berilijum,PVC, barijum.

E-WASTE

Waste electrical and electronic equipment (e-waste) such as computers, televisions, refrigerators, and mobile phones is one of the fastest-growing waste streams in the EU. E-waste is a complex mixture of materials and components that can cause major environmental and health problems due to its hazardous content. In order to improve e-waste management and contribute to the circular economy and increase resource efficiency, it is necessary to improve the collection, treatment, and recycling of e-waste.

Although computers and similar consumer electronics do not appear to be an overly hazardous waste at first glance, they contain a number of materials, including heavy metals, that can lead to serious environmental and health consequences if not properly disposed of and recycled. Health risks caused by hazardous substances in electronic waste are one of the most important reasons for taking care of the quality disposal of such material.

Electronic waste contains between 600 and 1000 different chemical substances that are harmful to health and endanger the environment, of which the most common substances are: lead, mercury, chromium, cadmium, beryllium, PVC, barium.

Električna i elektronska oprema plasirana na tržište,Bosna i Hercegovina ***Electrical and electronic equipment placed on the market, Bosnia and Herzegovina*** ***tonnes***	**tona**
Ukupno plasirano na tržište (POM), referentna 2022 *Total Placed on the Market (POM), referent 2022*	**47.224**

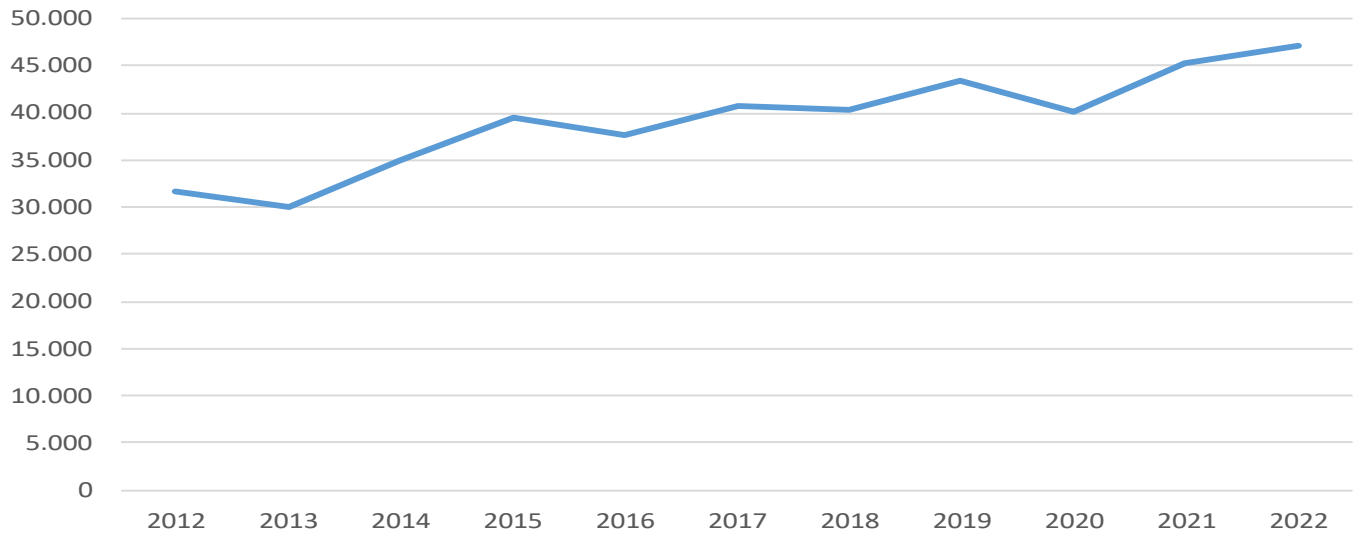
Električna i elektronska oprema plasirana na tržište (EU6), Bosna i Hercegovina, 2022. ***Electrical and electronic equipment placed on the market (EU6), Bosnia and Herzegovina, 2022***	**tona** ***tonnes***
Oprema za izmjenu temperature *Temperature exchange equipment*	**14.424**
Ekrani, monitori i oprema koja sadrži ekrane (..) *Screens, monitors, and equipment containing screens (..)*	**1.898**
Lampe *Lamps*	**264**
Velika oprema (isključujući fotonaponske panele) *Large equipment (excluding photovoltaic panels)*	**17.207**
Fotonaponski paneli (uključujući pretvarače) *Photovoltaic panels (incl. converters)*	**2.926**
Mala oprema *Small equipment*	**8.974**
Mala informatička i telekomunikaciona oprema *Small IT and telecommunication equipment*	**1.531**

Ukupno generisani električni i elektronski otpad, Bosna i Hercegovina ***Total generated electrical and electronic waste, Bosnia and Herzegovina*** ***tonnes***	**tona**
Ukupno generisani e-otpad 2022. godina *Total E-waste generated,2022*	***30.410***

Ukupno generisani električni i elektronski otpad (EU6), Bosna i Hercegovina 2022. godina. ***Total generated electrical and electronic waste (EU6), Bosnia and Herzegovina.2022 year.***	**tona** ***tonnes***
Oprema za izmjenu temperature *Temperature exchange equipment*	**6.467**
Ekrani, monitori i oprema koja sadrži ekrane (..) *Screens, monitors, and equipment containing screens (..)*	**2.299**
Lampe *Lamps*	**285**
Velika oprema (isključujući fotonaponske panele) *Large equipment (excluding photovoltaic panels)*	**9.590**
Fotonaponski paneli (uključujući pretvarače) *Photovoltaic panels (incl. converters)*	**4**
Mala oprema *Small equipment*	**9.978**
Mala informatička i telekomunikaciona oprema *Small IT and telecommunication equipment*	**1.786**

G. 1.1. Električna i elektronska oprema plasirana na tržište, Bosna i Hercegovina, 2012-2022. u tonama

G 1.1. Electrical and electronic equipment placed on the market, Bosnia and Herzegovina, 2012-2022, in tonnes



Prikazani su podaci o električnoj i elektronskoj opremi plasiranoj na tržište u skladu sa zahtjevima Direktive 2012/19/EU o otpadnoj električnoj i elektroničkoj opremi (OEEO).

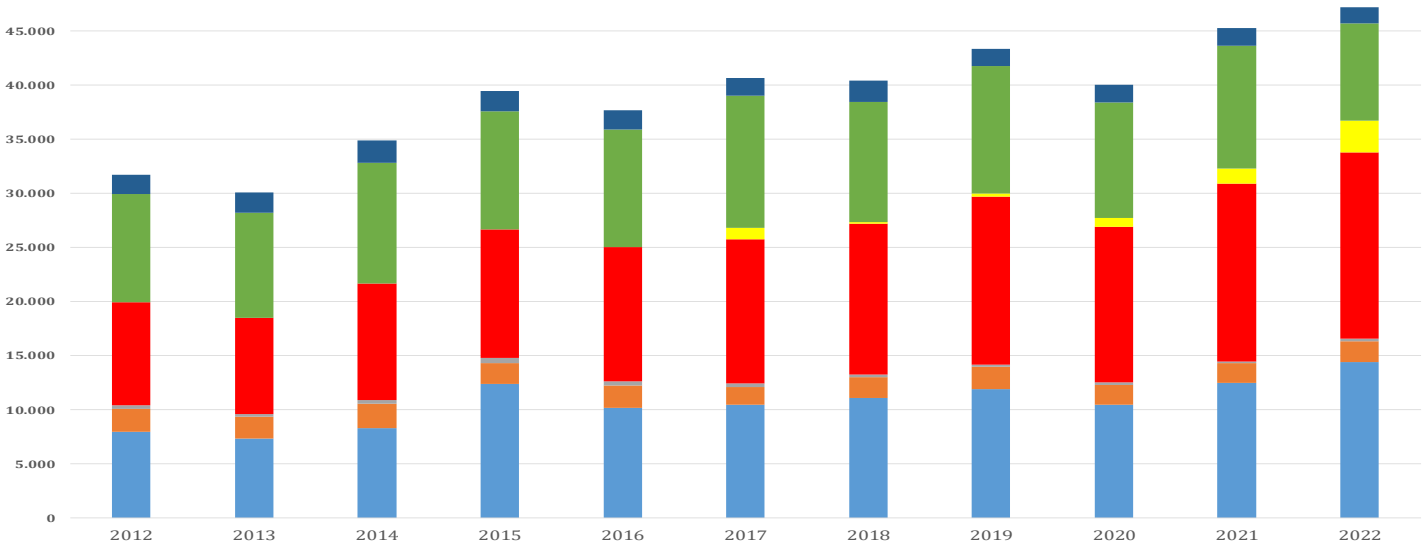
Između 2012. i 2022. godine, količina električne i elektronske opreme koja se plasirala na tržište Bosne i Hercegovine povećala se sa skoro 32 hilj.tona u 2012. godini na 47 hilj.tona. Uočeni pad za 2020. godinu u odnosu na 2019. godinu pripisuje se negativnom uticaju pandemije COVID 2019. na komletnu ekonomiju Bosne i Hercegovine tokom 2020. godine.

Data are presented on electrical and electronic equipment placed on the market in accordance with the requirements of Directive 2012/19/EU on waste electrical and electronic equipment (OEEO).

In the period from 2012 to 2022, the amount of electrical and electronic equipment placed on the market of Bosnia and Herzegovina increased from 32 thousand tons in 2012 to 47 thousand tons. The noticed decrease for 2020 compared to 2019 is attributed to the negative impact of the COVID 2019 pandemic on the entire economy of Bosnia and Herzegovina during 2020.

G. 1.2. Električna i elektronska oprema plasirana na tržište (EU6), Bosna i Hercegovina, 2012-2022. u tonama

G 1.2. Electrical and electronic equipment placed on the market (EU6), Bosnia and Herzegovina, 2012-2022, in tonnes



Legenda/*Legend:*

- Oprema za izmjenu temperature /Temperature exchange equipment
- Ekrani, monitori i oprema koja sadrži ekrane (..) / Screens, monitors, and equipment containing screens (..)
- Lampe /Lamps
- Velika oprema (osim fotonaponskih panela) / Large equipment (excluding photovoltaic panels)
- Fotonaponski paneli (uključujući pretvarače) / Photovoltaic panels (incl. converters)
- Mala oprema / Small equipment
- Mala informatička i telekomunikaciona oprema / Small IT and telecommunication equipment

Velika oprema (EU6) (isključujući fotonaponske panele) iznosi 36,4% u odnosu na ukupnu količinu električne i elektronske opreme plasirane na tržište u 2022. godini.

Large equipment (EU6) (excluding photovoltaic panels) accounts for 36.4% of the total amount of electrical and electronic equipment placed on the market in 2022.

G. 1.3. Ukupno plasirano na tržište (POM), kg/stanovniku, Bosna i Hercegovina, 2012-2022[1]

G.1.3 Total placed on the market (POM), kg/per capita, Bosnia and Herzegovina, 2012-2022[1]

Godišnja količina električne i elektronske opreme plasirane na tržište po glavi stanovnika je u porastu, i u 2022. godini je veća za 4,3% u odnosu na 2021. godinu.

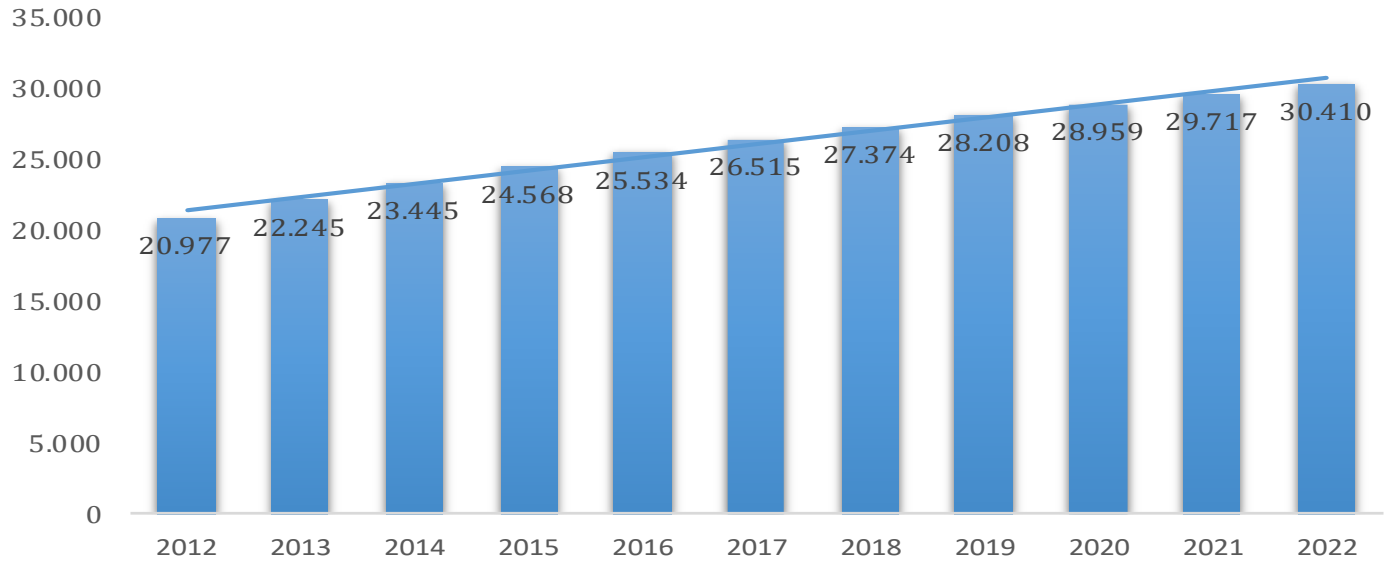
The annual amount of electrical and electronic equipment put on the market per capita is increasing, and in 2022 it is higher by 4.3% compared to 2021.

[1] Podaci Agencije za statistiku Bosne i Hercegovine o broju stanovnika u Bosni i Hercegovini (Popis 2013 i procjene o broju stanovnika 2014-2022)

[1] *Data from the Agency for Statistics of Bosnia and Herzegovina on the population in Bosnia and Herzegovina (Census 2013 and estimates of number population 2014-2022)*

G. 1.4. Ukupno generisani električni i elektronski otpad, Bosna i Hercegovina, 2012-2022. tona

G 1.4. Total generated electrical and electronic waste, Bosnia and Herzegovina, 2012-2022, tonnes

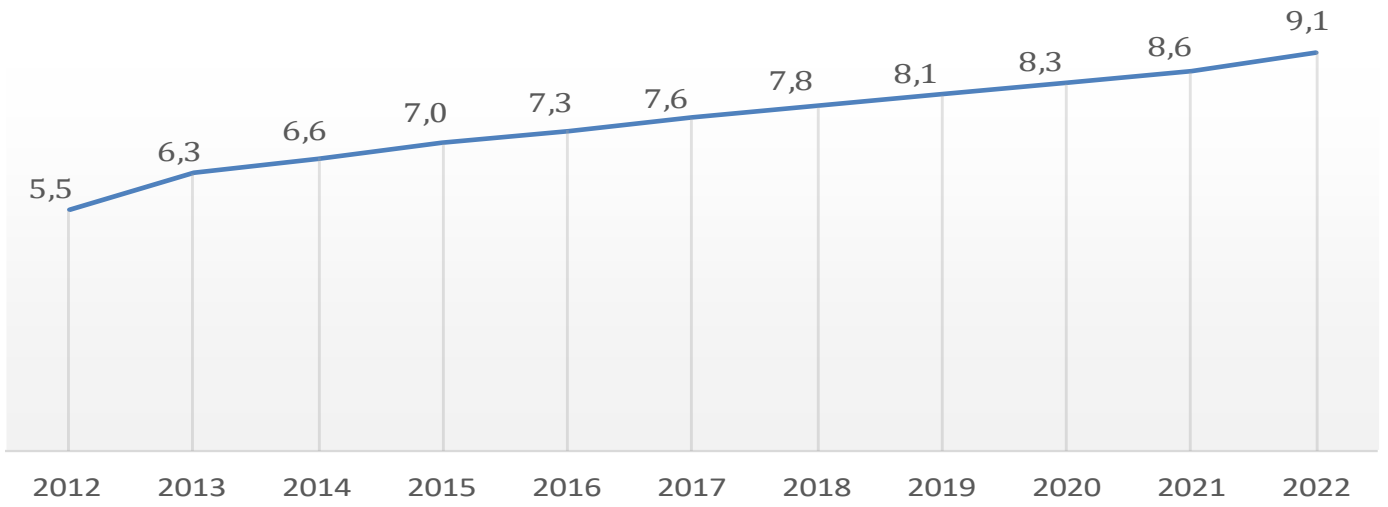


Ukupno generisani električni i elektronski otpad je u porastu. Ukupna količina e-otpada u 2022. je veća za 2,3% u odnosu na prethodnu godinu.

The total electrical and electronic waste generated is increasing. The total amount of e-waste in 2022 is higher by 2.3% compared to the previous year.

G. 1.5. Ukupno generisani električni i elektronski otpad, Bosna i Hercegovina, 2012-2022. kg/stanovniku[2]

G 1.5. Total generated electrical and electronic waste, Bosnia and Herzegovina, 2012-2022, kg/per capita[2]



Godišnja količina e-otpada po glavi stanovnika je u porastu i u 2022. godini je veća za 5,8,% u odnosu na 2021. godinu.

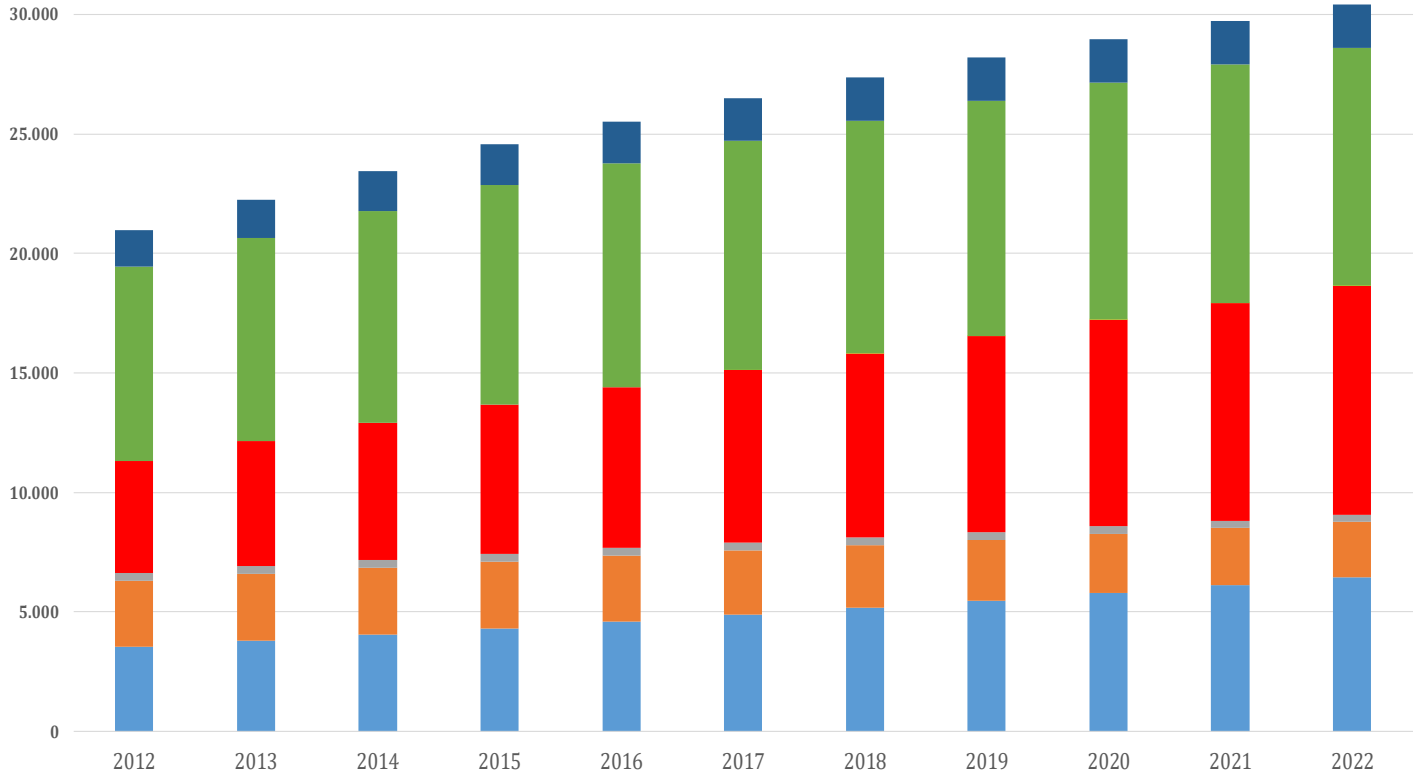
The average annual amount of e-waste per capita is constantly growing, in 2022 it is higher by 5.8% compared to 2021.

[2] Podaci Agencije za statistiku Bosne i Hercegovine o broju stanovnika u Bosni i Hercegovini (Popis 2013 i procjene o broju stanovnika 2014-2022)

[2] *Data from the Agency for Statistics of Bosnia and Herzegovina on the population in Bosnia and Herzegovina (Census 2013 and estimates of number population 2014-2022)*

G. 1.6. Generisani električni i elektronski otpad (EU6), Bosna i Hercegovina, 2012-2022. tona

G 1.6. Electrical and electronic waste generated (EU6) , Bosnia and Herzegovina, 2012-2022, tonnes



Legenda/*Legend:*

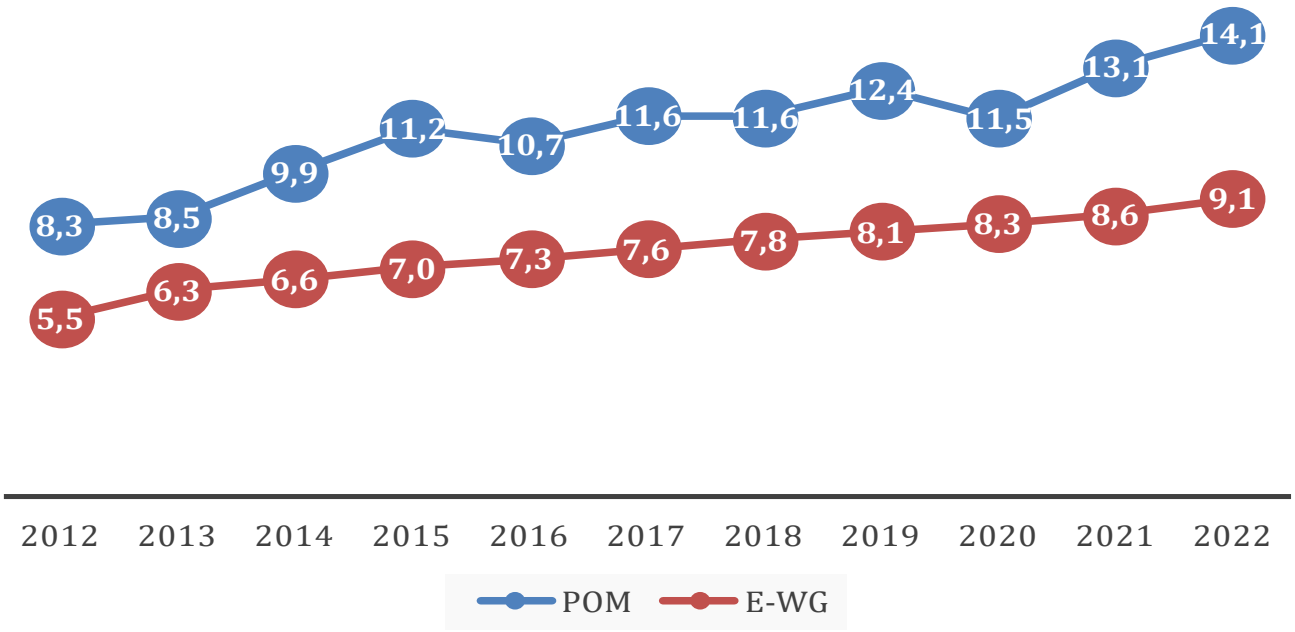
- Oprema za izmjenu temperature /Temperature exchange equipment
- Ekrani, monitori i oprema koja sadrži ekrane (..) / Screens, monitors, and equipment containing screens (..)
- Lampe /Lamps
- Velika oprema (osim fotonaponskih panela) / Large equipment (excluding photovoltaic panels)
- Fotonaponski paneli (uključujući pretvarače) / Photovoltaic panels (incl. converters)
- Mala oprema / Small equipment
- Mala informatička i telekomunikaciona oprema / Small IT and telecommunication equipment

Podaci električne i elektronske opreme u okviru šest kategorija (EU6) pokazuju da Mala oprema čini više od 9. 900 tona ili 32,8%, a Velika oprema (isključujući fotonaponske panele) čini više od 9.500 tona ili 31,5% od ukupnog generisanog električnog i elektronskog otpada u 2022. godini.

Electrical and electronic equipment data within six categories (EU6) shows that Small equipment accounts for more than 9,900 tons or 32.8% and Large equipment (excluding photovoltaic panels) accounts for more than 9,500 tons or 31.5% of total Electrical and electronic waste generated in 2022.

G. 1.7. Električna i elektronska oprema plasirana na tržište u odnosu na stvoreni (generisani) e- otpad, Bosna i Hercegovina, 2012-2022. kg/stanovnika[3]

G 1.7. Electrical and electronic equipment placed on the market (POM) in relation to generated e-waste (e-WG), Bosnia and Herzegovina, 2012-2022, kg/ per capita.



[3] Podaci Agencije za statistiku Bosne i Hercegovine o broju stanovnika u Bosni i Hercegovini (Popis 2013 i procjene o broju stanovnika 2014-2022)

[3] *Data from the Agency for Statistics of Bosnia and Herzegovina on the population in Bosnia and Herzegovina (Census 2013 and estimates of number population 2014-2022)*

METODOLOŠKA OBJAŠNJENJA

Cilj

Prikupiti pouzdane podatke o e-otpadu koji će služiti kao osnova za donošenje odluka i ekološki prihvatljivo upravljanje električnom i elektronskom opremom koja je na kraju životnog vijeka.

Pravni osnov

Europska komisija je 2012. objavila Direktivu 2012/19 / EU Evropskog parlamenta i Vijeća ("WEEE2") o otpadu električne i elektronske opreme ("EEE"). Od 2018. godine sva EEE razvrstana je u 6 kategorija navedenih u Aneksu III WEEE2.

Metodologija za izračun procjena mase EEO-a stavljenog na tržište

Za međunarodnu i regionalnu uporedivost korištena je zajedničkih metodologija i alat za izračun mase električne i elektroničke opreme (EEO) stavljene na tržište i otpadne električne i elektroničke opreme, (MANUAL for the use of the WEEE calculation tool, 2017).

Klasifikacija EEO u okviru šest kategorija (EU-6) navedene u Aneksu III Direktive WEEE 2012/19 / EU:

1. Oprema za izmjenu temperature
2. Zasloni, monitori i oprema koja sadrži zaslone (..)
3. Lampe
4. Velika oprema
5. Mala oprema
6. Mala IT i telekomunikacijska oprema

- Alat za izračunavanje količina E-otpada

Alat za izračunavanje otpadne električne i elektroničke opreme se koristi za unos statističkih podataka o EEO kako bi se izračunale relevantne količine EEO stavljene na tržište po određenim kategorijama EEO u Aneksima I i III Direktive 2012/19/EU, i za izračunavanje otpadne električne i elektroničke opreme.

Argumentirane procjene mase EEO-a stavljenog na tržište države članice u referentnoj godini izračunavaju se metodom vidljive potrošnje koja se zasniva na jednačini:

EEO stavljen na tržište (t) = domaća proizvodnja (t) + uvoz (t) – izvoz (t)

pri čemu je:

domaća proizvodnja (t) =masa (u tonama) dovršenog EEO-a proizvedenog u referentnoj godini t u državi;

uvoz (t) =masa (u tonama) EEO-a uvezenog u državu u referentnoj godini t iz druge države radi distribucije, potrošnje ili upotrebe;

izvoz (t) =masa (u tonama) EEO-a izvezenog iz države u referentnoj godini t u drugu državu radi distribucije, potrošnje ili upotrebe.

NOTES ON METHODOLOGY

Objective

Collect reliable data on e-waste that will serve as a basis for decision-making and environmentally friendly management of end-of-life electrical and electronic equipment.

Legal framework

In 2012, the European Commission published Directive 2012/19 / EU of the European Parliament and of the Council ("WEEE2") on waste electrical and electronic equipment ("EEE"). As of 2018, all EEE is classified into 6 categories listed in Annex III WEEE2

Methodology for calculating estimates of the mass of POM placed on the market

For international and regional comparability, common methodologies and a tool for calculating the mass of electrical and electronic equipment (POM) placed on the market and waste electrical and electronic equipment were used (MANUAL for the use of the WEEE calculation tool, 2017).

Classification of EEE within the six categories (EU-6) listed in Annex III of the WEEE Directive 2012/19 / EU:

1. Equipment for temperature change
2. Screens, monitors and equipment containing screens (..)
3. Lamps
4. Large equipment
5. Small equipment
6. Small IT and telecommunications equipment

- *Tool for calculating E-waste quantities*

The WEEE calculation tool is used to input POM data coming from statistical data in order to calculate the relevant quantities of POM placed on the market by specific POM categories in Annexes I and III of Directive 2012/19/EU, and to calculate waste electrical and electronic equipment.

Argued estimates of the mass of POM placed on the market of the member state in the reference year are calculated using the visible consumption method, which is based on the equation:
POM placed on the market (t) = domestic production (t) + import (t) – export (t)

where:
domestic production (t) = mass (in tons) of completed POM produced in the reference year t in the country;
import (t) = mass (in tons) of POM imported into the country in the reference year t from another country for distribution, consumption or use;
export (t) = mass (in tons) of POM exported from a country in reference year t to another country for distribution, consumption or use.

Metodologija za izračunavanje ukupne količine otpadne električne i elektroničke opreme proizvedene u datoj godini na teritoriji države zasniva se na:

- količini EEO stavljene na tržište u prethodnim godinama i dalje
- odgovarajućem vijeku trajanja proizvoda

Alat omogućuje ažuriranje podataka o EEO-u stavljenom na tržište za prethodne godine i/ili podatke o vijeku trajanja na temelju relevantnih podataka i dokaza u prilog takvim ažuriranjima.

The methodology for calculating the total amount of waste electrical and electronic equipment produced in a given year on the territory of the country is based on:

- *the amount of POM placed on the market in previous years and beyond*
- *the appropriate life of the product*

The tool allows updating POM data placed on the market for previous years and/or lifetime data based on relevant data and evidence to support such updates.

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