



Annual Report of

Environmental Protection for 2021

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1. Introduction

Annual Report of Environmental Protection for 2021 of JP Elektroprivreda BiH d.d. Sarajevo was made in accordance with the Rulebook on Environmental Protection of JP Elektroprivreda BiH d.d. Sarajevo.

The Report was prepared by the Environmental Management Department on the basis of the submitted individual reports of the Company's subsidiaries as well as the reports of organizational units within the Company's Directorate. We hereby thank them for their participation in the preparation of the Report.

2. Power and Thermal Energy Generation

JP Elektroprivreda BiH d.d. Sarajevo (hereinafter: JP EPBiH), in 2021, in its production facilities achieved total electricity production amounting to 6,677.1 GWh. (Diagram 1. Electricity produced in GWh)

The "Tuzla" and "Kakanj" thermal power plants produced a total of **4,840.8 GWh**. Of these, **2,862.9 GWh** was produced in the Tuzla Thermal Power Plant (hereinafter: TPP "Tuzla"), and **1,977.9 GWh** was produced in the Kakanj Thermal Power Plant (hereinafter: TPP "Kakanj").

The hydroelectric power plants, managed by JP EPBiH, produced a total of **1,729.1 GWh**. The hydroelectric power plants on the river Neretva (HPP "Jablanica", HPP "Grabovica" and HPP "Salakovac") produced a total of **1,665.5 GWh**. Small hydroelectric power plants produced **63.6 GWh**.

The "Podveležje" Wind Farm produced **107.2 GWh**.

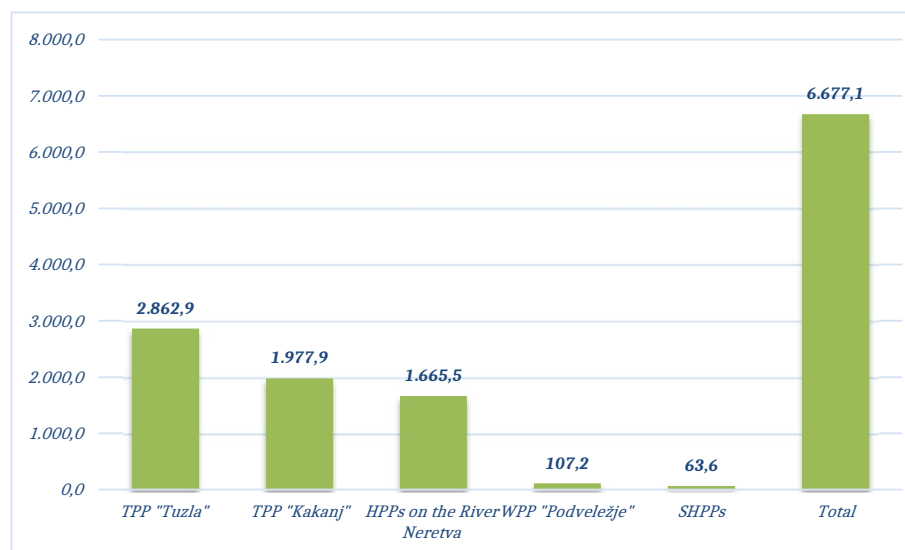


Diagram 1. Electricity produced (GWh)

A total of 4,990,301.0 t of coal was consumed in thermal power plants for electricity, thermal energy and process steam production. 4,812,674.0 t was consumed for electricity production, while 177,627.00 t was consumed for heat and process steam production. Out of the total quantities, 3,093,512.0 t (61.99%) was consumed by TPP "Tuzla", and 1,896,789.00 t (38.01%) by TPP "Kakanj". The calorific value of coal consumed was a total of 11,822.0 (kJ/kg). At the same time, the calorific value of coal used for the needs of operation of TPP "Tuzla" was 11,610.0 (kJ/kg), and for TPP "Kakanj" 12,155.0 (kJ/kg). The total specific heat consumption in thermal power plants was 11,737.0 (kJ/kWh), with the specific consumption in TPP "Tuzla" of 11,886.00 (kJ/kWh), while in TPP "Kakanj" it was 11,523.00 (kJ/kWh). A total of 2,454.8 t of crude oil and 1,476.97 t of fuel oil was used for ignition and supporting fire in thermal power plants, in boilers.

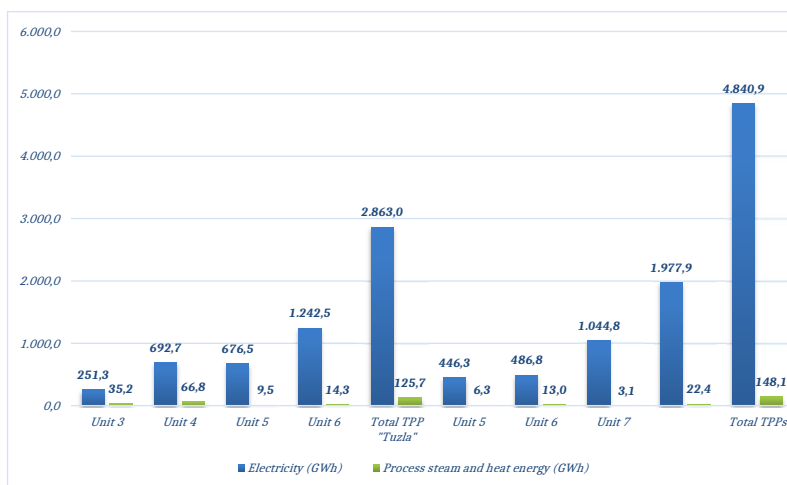


Diagram 2. Electricity, process steam and heat produced, by Units, in TPP "Tuzla" and TPP "Kakanj" (GWh)



Diagram 3. Electricity produced in HPPs on the r. Neretva (GWh)

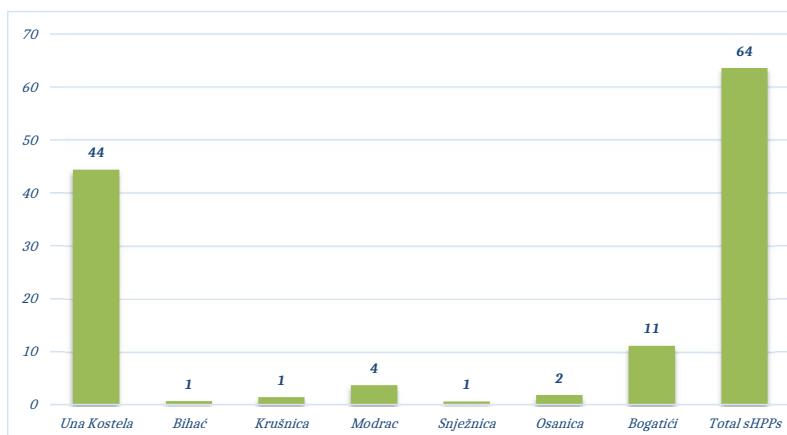
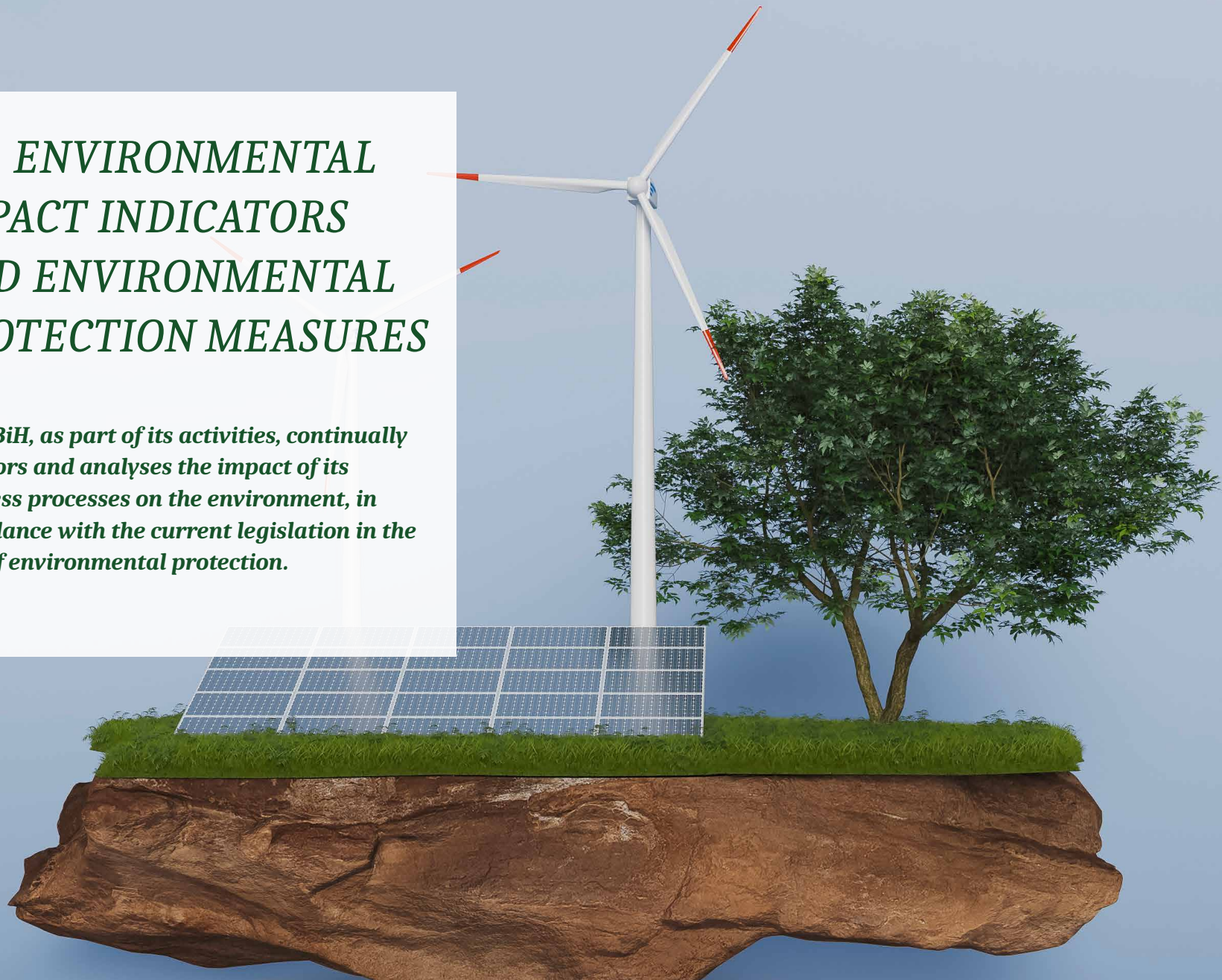


Diagram 4. Electricity produced in SHPPs (GWh)

3. ENVIRONMENTAL IMPACT INDICATORS AND ENVIRONMENTAL PROTECTION MEASURES

JP EP BiH, as part of its activities, continually monitors and analyses the impact of its business processes on the environment, in accordance with the current legislation in the field of environmental protection.



Air Pollutant Emissions from Thermal Power Plants

Air pollutant emissions – sulphur dioxide (SO_2), nitrogen oxides (NO_x), solid particles are continuously monitored in thermal power plants.

Carbon dioxide emissions (CO_2) are also continuously monitored.

Total annual air pollutant emissions and CO_2 emissions are given in Table 1.

Table 1 Air pollutant emissions and CO_2 emissions from TPP “Tuzla” and TPP “Kakanj”

Power plant	NO_x	SO_2	Solid particles	CO_2
	t/yr	t/yr	t/yr	t/yr
TPP “Tuzla”	3.432	43.555	570	2.295.346
TPP Kakanj	5.935	58.940	49	1.950.759
Total	9.367	102.495	619	4.246.105

Consumption of Water and Water Emissions in Thermal Power Plants

Data on the amount of water consumed for generation of electricity, thermal power and process steam in thermal power facilities, as well as data on the total load of pollution of wastewater expressed in population equivalent (PE) are given in Table 2.

Table 2 Balance of water used and discharged for generation of electricity, thermal power and process steam in TPP “Tuzla” and TPP “Kakanj”

Power plant	Used water	Discharged water	Population equivalent (EBS)
	m^3	m^3	
TPP Tuzla	9.939.427	745.228	11.423,7 ES
TPP Kakanj	10.756.318	5.924.684	25.394 ES

TPP “Tuzla”

Activities in the field of air protection

In accordance with the environmental permit (act number UP-I 05/2-23-11-151/15 S), TPP “Tuzla” is obliged to measure the content of floating dust particles (PM10) at the landfills of combustion process products during the dry period. In 2021, the public procurement procedure was launched in a timely manner, in order to carry out measurements in the dry period August – September. Two public procurement procedures were conducted and both times the Institute for Protection and Ecology of the Republika Srpska was selected as the best ranked bidder. The said Institute, in both procedures, withdrew from the conclusion of the relevant contract.

For previous years, TPP “Tuzla” duly fulfilled the obligation of the aforementioned measurement and submitted reports to the Federal Ministry of Environment and Tourism (hereinafter: FMET). In previous years, the results of the measurement of concentrations of floating particles (PM10) did not exceed the limit values in accordance with the Regulation on the manner of monitoring on air quality, and defining the kinds of polluting materials, limit values and other air quality standards (“FBiH Official Gazette”, Nos. 01/12, 3/21).



Activities in the field of water protection

The Sava River Basin Agency issued a water permit to TPP "Tuzla" (act number UP-I/25-3-40-432-04/17, on 6 September 2017), valid for 5 (five) years. Measures and activities, which are ordered by the water permit, are carried out according to the plan of activities prepared in accordance with that permit.

The testing of the pollution load was carried out in March 2020 in accordance with the legally prescribed methodology, which was also valid for 2021.

Established value of the wastewater pollution load expressed through the population equivalent (EBS) is 11,423.7 ES, on the basis of which the calculation of the special water fee for water protection was made.

The Tuzla Canton Ministry of Agriculture, Forestry and Water Management issued a water permit (act number 04/1-13-25-21863/17) for the discharge of sanitary and faecal wastewater, valid until 11 July 2022.

The implementation of the "Closed-Loop Wastewater Treatment" project has positive effects in preserving the environment and reducing the cost of water fee. Raw water consumption increased by 873,964 m³ compared to 2020 data. The reason for the increase in raw water consumption is the increased water consumption for the hydraulic transport of slag and ash to the landfill of combustion process products.

Activities in the field of waste management

In accordance with the waste management plan, TPP "Tuzla" is obliged to carry out selective waste collection and provide for final disposal/reuse. Contracts on the sale of secondary raw materials were concluded with the companies CIBOS d.o.o. Ilijaš and Modernizacija d.o.o. Gradačac. From 2020, the Contract on the Takeover of Hazardous Waste is in force, concluded with Kemokop d.o.o. Tuzla. The Contract for the Disposal of Technological Sludges was concluded with Delta Petrol d.o.o. Kakanj.

Radioactivity monitoring indicators

In accordance with the Rulebook on Maximum Limits of Radioactive Contamination of The Environment and Performing Decontamination ("SFRY Official Gazette", 8/87; "R BiH Official Gazette" 2/92), annual monitoring of radioactivity levels in the electricity generation process and the nearby surroundings of TPP "Tuzla" facilities was realized.

The Faculty of Veterinary Medicine of Sarajevo carried out the measurement of the radioactivity of slag and ash, and the measurement of radioactivity in the electricity production process, and it was established that the level of natural and artificial radionuclides in the samples does not exceed the established maximum permitted values.

The conclusions of the Report emphasized that the measured levels of natural radionuclides, in most coal



types used in TPP "Tuzla", do not exceed the average values of the world's coal types, except for coal from coal mine RU Gračanica, which shows elevated values of radionuclides of decay chain of uranium. For coal from this mine, a recommendation was made that the use of coal from Gračanica should be done by mixing it with other coals, whereby the share of said coal should not exceed 30% in the mixture. Radiological investigations of the ecological chain in the vicinity of TPP "Tuzla" were also performed. The results of investigations of natural radionuclides in soil, plant cover, and plant and animal products at the location of the settlements Husino and Šiški Brod, are within the average values for these types of samples. Based on the performed measurements, a certificate for the radioactivity of slag and ash was issued.

TPP “Kakanj”

Activities in the field of water protection

4,884.540,0 m³ of wastewater was treated at wastewater treatment plants. 14,739.0 m³ of wastewater was treated at the sanitary-fecal wastewater treatment plant, and treated sludge is 227.0 m³. In the process of decarbonization, 19,985.0 m³ of waste sludge was generated, while 793.0 m³ of sludge was generated in the process of wastewater treatment at the wastewater treatment plant (WWT-coagulator). The amount of water discharged from the “Hrasno” Coal Depot was 6,473.0 m³. The amount of 15% sludge discharged, deposited in precipitators at Turbići landfill is 16,400.0 m³.

Activities in the field of waste management

In accordance with legal requirements, i.e., in accordance with the documents of the Environmental Management System established in TPP “Kakanj”, and in accordance with the Waste Management Plan of TPP “Kakanj”, continuous monitoring of waste management was performed at the location of all plants and facilities.

Radioactivity monitoring indicators

In accordance with the Rulebook on Maximum Limits of Radioactive Contamination of The Environment and Performing Decontamination (“SFRY Official Gazette”, 8/87; “R BiH Official Gazette” 2/92), annual monitoring of radioactivity levels in the electricity

generation process and the nearby surroundings of TPP “Kakanj” facilities was realized.

The obtained investigation results showed that TPP “Kakanj”, as in previous years, has a mild impact on the environment in terms of increasing technologically conditioned natural radioactivity. Also, exposure dose rate measurements showed trends and values similar to those observed in previous years. The levels of natural radionuclides in coal, ash and slag from the plant and ash and slag at the landfill, are within the range of average values for these types of samples. The soil around the thermal power plant is not significantly contaminated with radionuclides.

The recommendation is to continuously control the production process, due to the variation of radionuclide levels by coal layers, and taking into account the fact that there is a large volume of production and the quantity of raw materials and waste material.

Based on the performed measurements, a certificate for the radioactivity of slag and ash was issued.

HPPs on the River Neretva

Activities in the field of air protection

In accordance with the Law on Air Protection (“FBiH Official Gazette”, No. 33/03) and binding by-laws, regular annual measurements of pollutant emissions on flue ducts in boiler rooms (heating of office premises) were made. A Report on the Air Pollutant Emissions Measurement was prepared and submitted

to the FMET. All measured indicators meet the criteria on environmentally friendly work, i.e., the ecological soundness of boiler rooms.

Activities in the field of water protection

Sampling and quality testing (monitoring) of wastewater was done in accordance with the applicable Regulation on Conditions for Discharging Waste Water into The Environment and Public Sewerage Systems (“FBiH Official Gazette”, number: 26/20).

HPP “Jablanica”

For the acceptance and treatment of wastewater from the sanitary blocks of the HPP “Jablanica”, a standard biological device for wastewater treatment has been installed on the plateau of the machine house. After treatment, the wastewater is discharged into the river Dobrinja, which flows into the river Neretva, using a mechanical-biological process. Sampling of wastewater from the HPP “Jablanica” plant was performed twice at the discharge site (April and October).

All measured parameters are within the permitted limit values.

HPP “Grabovica”

For the acceptance and treatment of wastewater from the sanitary blocks and coffee kitchen of the HPP “Grabovica”, two standard biological wastewater treatment plants were installed. After treatment, the wastewater is discharged directly into the river Neretva, using a mechanical-biological process. Sampling of wastewater from the HPP “Grabovica”

was performed twice at the discharge site (April and October).

All measured parameters are within the permitted limit values.

HPP “Salakovac”

For the acceptance and treatment of wastewater from the HPP “Salakovac”, a standard biological wastewater treatment plant was built. After treatment, the wastewater is discharged directly into the river Neretva, using a mechanical-biological process.

Sampling of wastewater from the HPP “Salakovac” was performed twice at the discharge site (April and October).

All measured parameters are within the permitted limit values.

Activities in the field of waste management

In accordance with the waste management plans for the HPP “Jablanica”, HPP “Grabovica” and HPP “Salakovac”, all types of waste generated are collected, selected and temporarily deposited at the locations of the HPP plant on the river Neretva.



“Elektro distribucija” Sarajevo

Activities in the field of water protection

“Elektro distribucija” Sarajevo concluded the Concession Agreement for sHPP “Osanica 1” with the Government of the Bosnian-Podrinje Canton Goražde. In accordance with the Contract, an annual fee of 8% of the total revenue from electricity production shall be paid.

For sHPP “Osanica 1”, regular ongoing and investment maintenance of the hydropower facility is carried out in order to prevent a negative impact on the environment.

Activities in the field of waste management

In accordance with the Contract No. 06-EDSA/20, the reconstruction of the warehouse for temporary waste storage at the site of TS Azot 1, Vitkovići, Municipality of Goražde, has been completed. After obtaining the use permit, the warehouse will be put into operation. In 2021, the “Elektro distribucija” Sarajevo was registered in the Waste Management Information System of the Federation of BiH.

The contract for the sale of collected quantities of secondary raw materials and waste materials was concluded with Trgosirovina d.o.o. Sarajevo. The contract for the sale of waste was concluded with the company Valbih d.o.o.

The third individual contract under the framework agreement for hazardous waste disposal service was

concluded with Kemeko-BH d.o.o. Lukavac.

The discarded electrical and electronic equipment was handed over for processing and disposal to the operator of the waste electrical and electronic equipment management system, the company ZEOS eko-sistem d.o.o. Sarajevo. The collectors authorized by the system operator were Harex d.o.o. Sarajevo and Kemeko-BH d.o.o. Lukavac.

At sHPP “Osanica 1”, regular cleaning of the bed of the river Osanica and maintaining of water intake were performed. Approximately 50 kg of floating waste was collected and disposed of in an appropriate manner. Also, about 200 m³ of the alluvial deposit was collected and disposed of.

The “Environmentally Sound Management of Persistent Organic Pollutants (POPs) in Industrial and Hazardous Waste Sectors in Bosnia and Herzegovina” Project

The Government of Sweden, within the UNDP Office in Bosnia and Herzegovina, has implemented the “Environmentally Sound Management of Persistent Organic Pollutants (POPs) in Industrial and Hazardous Waste Sectors in Bosnia and Herzegovina” project. The consulting companies TAUW, the Netherlands, and ENOVA, Sarajevo were engaged in developing a detailed inventory of persistent organic pollutants (POPs). At the end of 2021, the developing of inventory of POPs substances began. “Elektro distribucija” Sarajevo reported thirty-four (34) pieces of dismantled capacitors that are suspected to have been charged with PCBs, for the purpose of disposal in an environmentally acceptable manner within the stated project activities.

The training of 357 workers has been realized.

Workers are familiar with the prerequisites for the good functioning of the waste management system and the implemented improvements compared to the previous training from 2019. The functionality of the system was presented through examples of good practice. Workers were presented with recorded problems that interfere with the functionality of the system, and ways of overcoming them. The importance of respecting the prescribed method of waste management in the upcoming period by all workers was pointed out.

„Elektro distribucija“ Tuzla

Activities in the field of water protection

Regular annual water quality testing was carried out at the outlet of the two separators in the business circle of “Elektro distribucija” Tuzla, at the location in Mitra T. Uče Street. All measured parameters are within the permitted limit values.

The procedure of public procurement of the service of landslide remediation on the left and right sides of the Sniježnica dam was initiated in 2021. The service was not contracted. Activities will be implemented in 2022.

Activities in the field of waste management

The tender for the procurement of the service of construction of a new central warehouse for hazardous and non-hazardous waste was initiated and cancelled. It is planned to be repeated in 2022. The service of hazardous waste disposal and sale of secondary raw materials and waste materials is continuously contracted.

Where necessary, the required containers/bins for the selective collection and disposal of waste are procured. An additional container for the collection of waste toners was acquired.

Elektro distribucija“ Zenica

Activities in the field of water protection

In order to mitigate the negative impact on water, the service of regular maintenance of buildings of electric power facilities was realized. Also, the aforementioned service increased the safety of electric power facilities in order to prevent a large-scale accident.

Rehabilitation of transformer substations was carried out in accordance with technical recommendations that include environmental protection measures.

Activities in the field of waste management

The contract on the disposal of electronic and electrical waste was concluded with CIBOS d.o.o. Sarajevo, Zenica Subsidiary, with the issuance of the Follow-Up Sheet for Electrical and Electronic Waste. In the Central Warehouse Zenica, Central Warehouse Travnik, Warehouse Bugojno, Warehouse Maglaj, Warehouse Breza, Warehouse Visoko, Warehouse Zavidovići, Warehouse Doboj, Warehouse Olovo and Warehouse Tešanj, the generated non-hazardous waste (waste not specified elsewhere, construction waste) was temporarily stored. A public call for the sale of this waste was specified and a contract was concluded with the selected buyer.

Hazardous waste (lead batteries, discarded electrical

and electronic equipment containing hazardous components) is temporarily stored in the Central Warehouse Zenica and Central Warehouse Travnik. With CIBOS d.o.o. Sarajevo - Zenica Subsidiary, Contract on Final Disposal was concluded.

„Elektro distribucija“ Bihać

Activities in the field of water protection

In order to reduce negative impacts on water, the necessary works on water intakes of hydropower facilities were carried out, as well as the revision of the HPP “Una Kostela”, sHPP “Krušnica” and sHPP “Bihać”. The regular annual revision of HPP “Una Kostela” was performed in accordance with the documents: Plan for the annual audit of equipment in power generation plants and the Study on the arrangement of the worksite during the execution of works on the regular annual audit of the equipment of the HPP “Una Kostela”.

A report on electricity production in the HPP “Una Kostela” is regularly prepared. The same applies to electricity generation and water consumption. Wastewater is not recognized in the Report. The balance of cooling water taken from the Una River and treated through the filter system 800/50 mic., and used for cooling the bearing system of the unit, is estimated at about 565 thousand m³ for 2021.

The centralized procedure of procurement of agents for environmental protection (absorbents) was carried out, with the aim of environmentally sound handling of mineral oils and readiness to react in case of incident situations, and based on the same, Contract No. 10-AD-EDSA/21 was concluded with CETEOR d.o.o. Sarajevo.

Activities in the field of waste management

Construction of a warehouse for temporary (hazardous and non-hazardous) waste disposal in Bosanski Petrovac continued in 2021. The Main Design has been prepared and the Decision on Investment has been adopted.

The sale of secondary raw materials and waste materials, as well as services of hazardous waste disposal, are continuously contracted. The sale of secondary raw materials and waste materials was realized according to the Contract 211-EDB-2020.

The sale of disposed power transformers was realized under the Contract 187-EDB/2021 concluded with Trgosirovina d.o.o. Sarajevo.

The disposal of hazardous waste was carried out under the Contract 351-EDB/2020 concluded with KEMEKO-BH d.o.o. Lukavac.

„Elektro distribucija“ Mostar

Activities in the field of water protection

In accordance with the legal regulations, the quality of oil pits in masonry TSs 35/10 kV and 20(10)/04 kV is continuously monitored and interventions are made if necessary.

Activities in the field of waste management

The service of hazardous waste disposal and sale of secondary raw materials and waste materials is continuously contracted.

Where necessary, the required containers/bins for the selective collection and disposal of waste are procured. An additional container for the collection of waste toners was acquired.



4. FISH STOCKING

HPPs on the River Neretva

According to the annual fishery improvement programs for 2021, submitted by the associations exercising the right to manage the fishing areas of Konjic, Jablanica, Mostar and Prozor, the procurement of allochthonous species of fingerlings/fish of carp, lake trout and California trout was realized. There were no bidders in the public procurement procedure for other allochthonous species of fingerlings/fish of Arctic char and eel.

For the procurement of indigenous species of fingerlings/fish of river trout, softmouth trout and marble trout, procurement procedures were initiated in March 2021. Due to constant complaints about the tender documentation, procedures for procurement of indigenous fish species were not completed, i.e., there was no opening of bids. All complaints filed by potential bidders were rejected as inadmissible and untimely by the Procurement Review Board.

During 2021, according to Article 35 of the Law on Freshwater Fishery ("FBiH Official Gazette", No. 64/04), agreements were concluded on the regulation of outstanding obligations for previous periods up to and including 2020. Agreements were concluded for periods not charged. Agreements were concluded with USR "Glavatica" Jablanica, SRTD "Ramske vode" Prozor - Rama and U.G. "OSR Konjic", Konjic. With the above agreements, it was agreed that for the quantities of fish to be used for restocking the Jablanica, Prozor-Rama and Konjic fishing area ceded to these associations for use, according to the applicable fishing basis and annual fishery improvement programmes, financial resources shall be paid according to the agreed unit prices. On several occasions, attempts were made to reach a common agreed position with USR "Neretva 1933" Mostar, regarding the conclusion of the agreement, however, the agreed position was not reached, that is, the agreement was not reached. The association in question initiated legal proceedings regarding the obligations of JP EPBiH for 2020.

„Elektro distribucija“ Tuzla

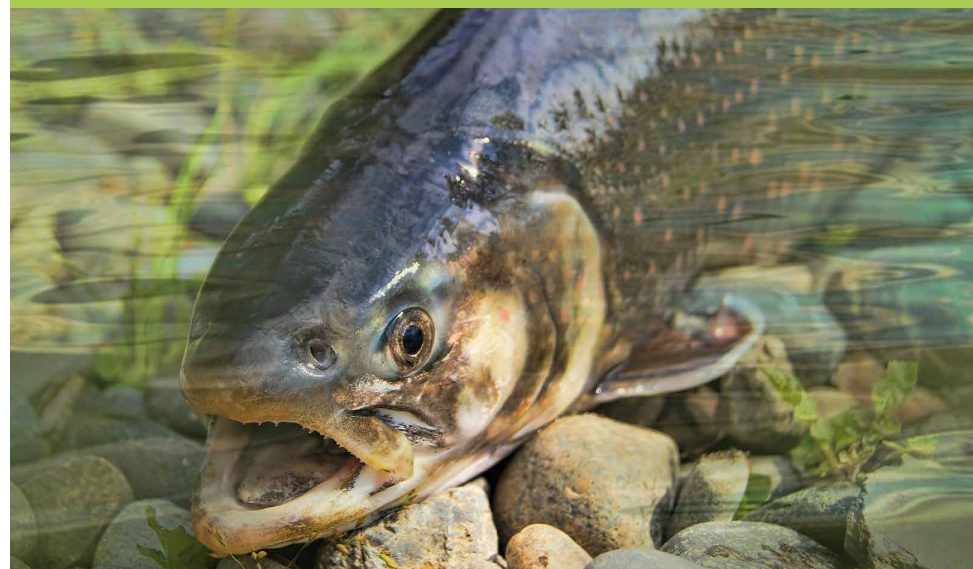
According to the Fishing Basis of the Fishermen's Association, the hydro reservoir Sniježnica was restocked with the required quantity and type of fingerlings/fish.

„Elektro distribucija“ Bihać

According to the agreements on the improvement of the fish stock in the Una and Krušnica river basin, the Annual Fishery Improvement Programme of USR Una, Bihać for 2021 (fishing area 4, fishing zone 4.2) and the Annual Programme for the Fishing Area 5. Fishing zone 5.1. – Krušnica, the restocking of the rivers Una and Krušnica was carried out.

The obligation under the Agreement on the Improvement of fish stocks in the Krušnica river basin is a 60% participation in the annual restocking of the Krušnica river basin, which is proportional to the estimated damage caused to the natural balance of this ecosystem and to the fish stock by the operation and maintenance of the sHPP "Krušnica" Bosanska Krupa.

The obligation under the Agreement on the Improvement of the Fish Stock in the river Una basin from November 2019 is to finance the restocking of the Una River in the amount of 90 000 pieces of brown trout fingerlings during the period of legal validity of the Fishing Basis of 5 (five) years (2019 - 2023).



5. PRODUCED WASTE QUANTITIES WITHIN JP EPBiH

In accordance with the legal framework in the field of waste management, waste management systems have been established and waste management plans have been adopted in all subsidiaries of JP EPBiH.

Entire waste collected is handed over to authorized companies for the collection, transportation, treatment and export of the same, until its final disposal.

Non-hazardous waste

A total of 1,960.0 t of non-hazardous waste was produced within JP EPBiH. TPP "Tuzla" produced 896.5 t, TPP "Kakanj" **685.9 t**, HPPs on the r. Neretva **143.0 t**.

A total of **235,0 tonnes** was produced in the power distribution subsidiaries (power distributions: Sarajevo, Tuzla, Zenica, Bihać and Mostar).

Slag and ash from the production process

The total quantity of slag and ash generated in TPP "Tuzla" and TPP "Kakanj" is **1,515,814.0 t**, of which **538,479.0 t** were delivered, and the rest was disposed of at the slag and ash landfill.

Hazardous waste

The total amount of hazardous waste of JP EPBiH is **124.8 t**.

TPP "Tuzla" produced **17.2 t**, TPP "Kakanj" **7.87 t**, and HPPs on the r. Neretva **2.7 t**.

A total of **97.0 tonnes** was produced in the power distribution subsidiaries (Sarajevo, Tuzla, Zenica, Bihać and Mostar).



6. USE OF TRANSFORMER OIL IN POWER DISTRIBUTION SUBSIDIARIES (EDS)

„Elektro distribucija“ Sarajevo

In the normal course of the process of repair and maintenance of substations and transformers, in the Canton of Sarajevo and Bosnian-Podrinje Canton Goražde, 6,427.0 kg of non-chlorated insulating oil and heat transfer oil based on mineral oil was spent (42% more oil was spent in 2021 compared to 2020).

„Elektro distribucija“ Bihać

Within the OMiP Sector, electrical insulation transformer oil was refilled, and 480.0 kg was consumed (approx. 19% less oil in 2021 compared to 2020).

In the Activity of electricity production, within the process of production and maintenance of power facilities in hydro power plants, biodegradable hydraulic oils (HD 68) and grease (LIS 2) were used.



7. TREND OF ENVIRONMENTAL IMPACT INDICATORS FOR THE PERIOD 2017 – 2021



Diagram 5. Total electricity generation in the facilities of JP EP BiH for the period 2017 – 2021 (GWh)

TPP "Tuzla" and TPP "Kakanj"

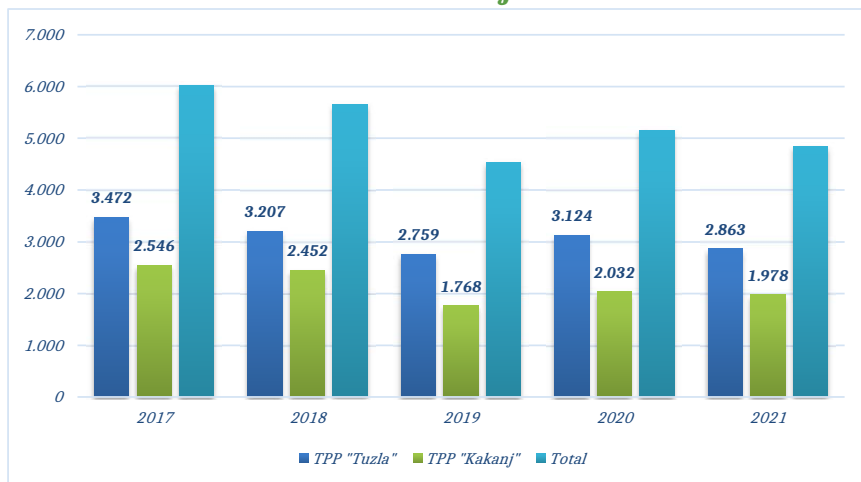


Diagram 6. Electricity generation in TPP "Tuzla" and TPP "Kakanj" for the period 2017 - 2021 (GWh)

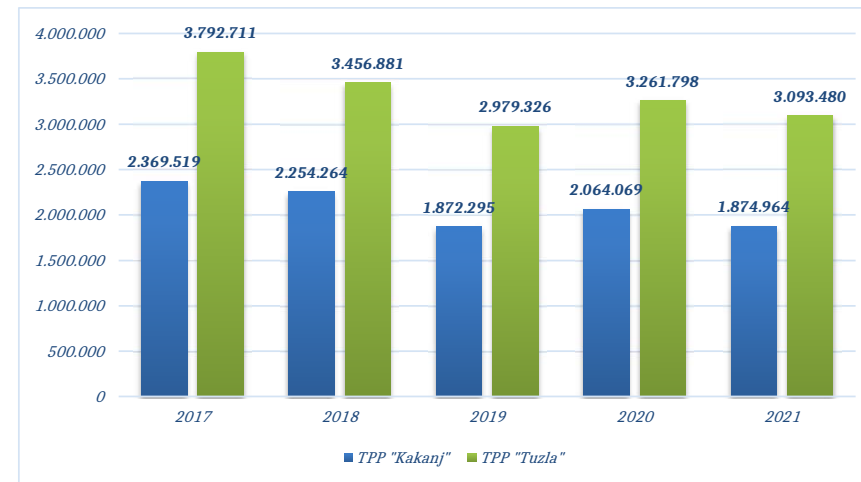


Diagram 7. Coal consumption in TPP "Tuzla" and TPP "Kakanj" for the period 2017 - 2021 (t)

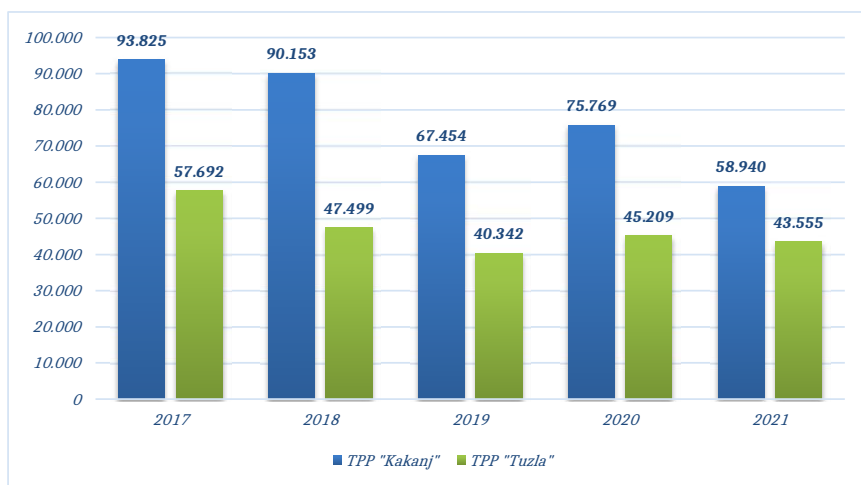


Diagram 8. Emission of SO₂ from TPP "Tuzla" and TPP "Kakanj" for the period 2017 - 2021 (t)

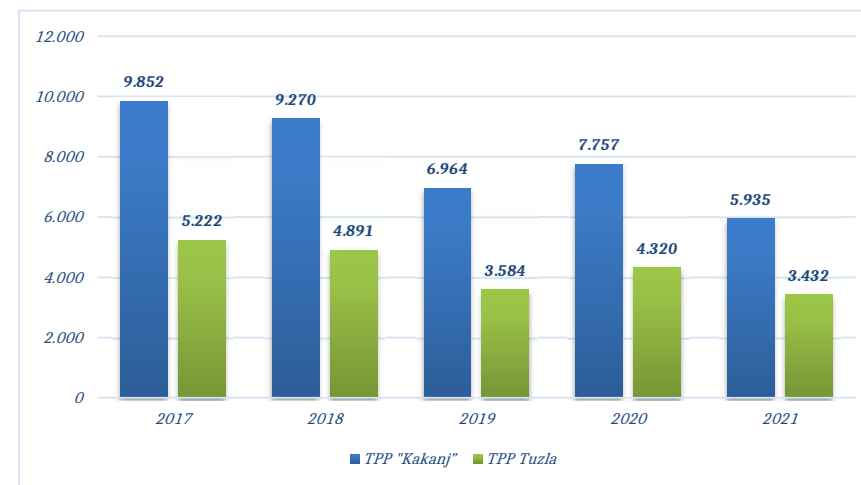


Diagram 9. Emission of NO_x from TPP Tuzla and TPP Kakanj for the period 2017 - 2021 (t)

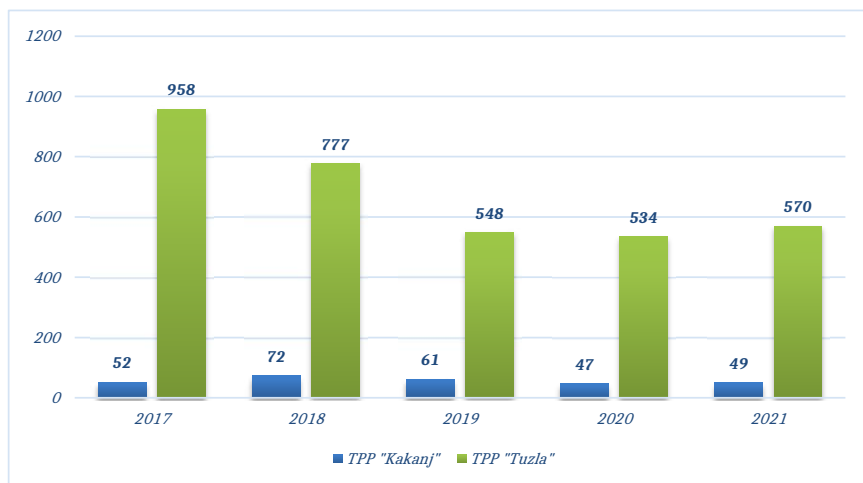


Diagram 10. Emission of solid particles from TPP "Tuzla" and TPP "Kakanj" for the period 2017 - 2021 (t)

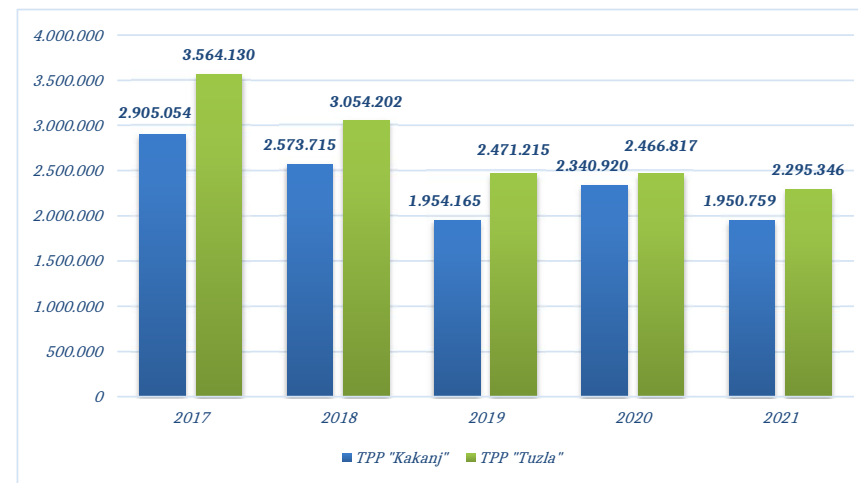


Diagram 11. Emission of CO₂ from TPP "Tuzla" and TPP "Kakanj" for the period 2017 - 2021

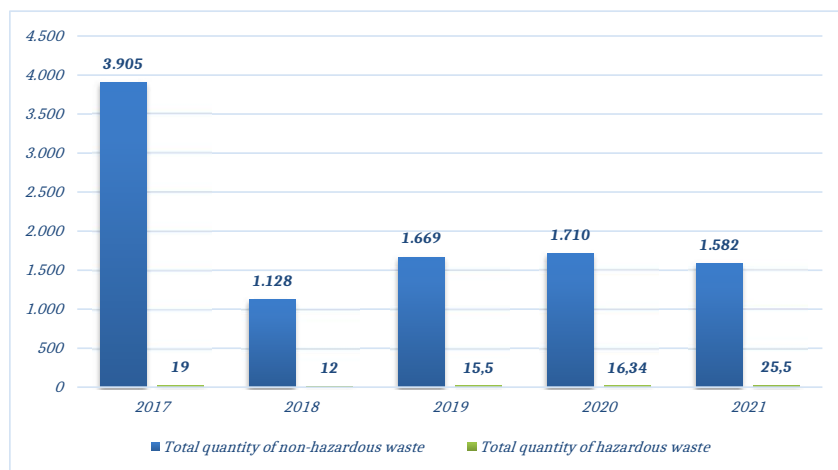


Diagram 12. Total quantity of non-hazardous waste and hazardous waste* in TPP "Tuzla" and TPP "Kakanj" for the period 2017 - 2021 (t)



Diagram 13. Total quantity of delivered slag and ash in TPP "Tuzla" and TPP "Kakanj" for the period 2017 - 2021 (t)

Hydro Power Plants on the River Neretva

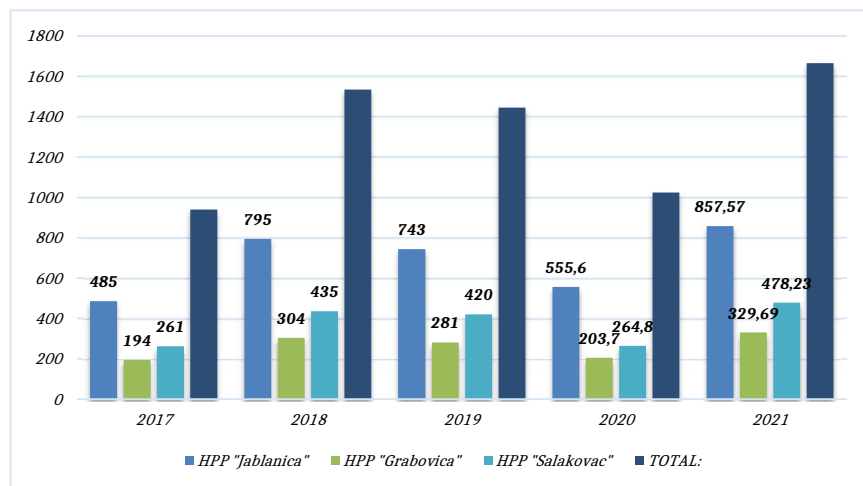


Diagram 14. Electricity generation in hydroelectric power plants on the river Neretva for the period 2017 – 2021 (GWh)

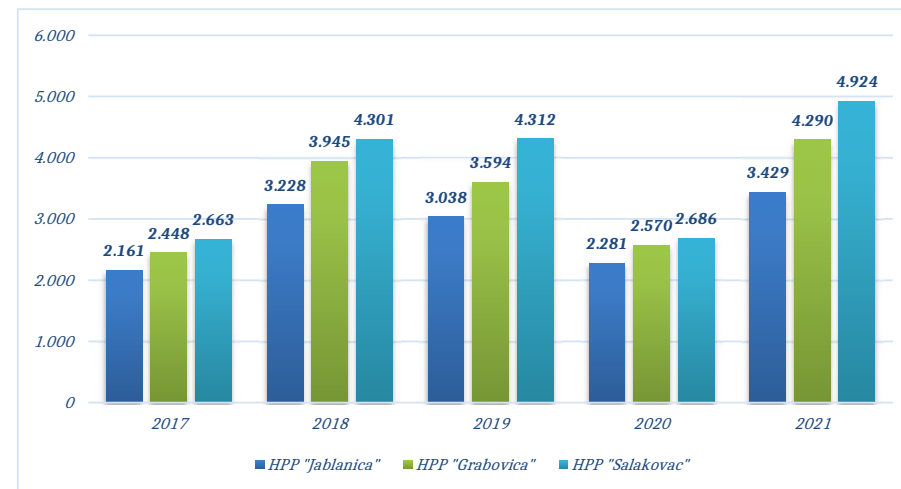


Diagram 15. Quantity of water used for electric power generation in hydroelectric power plants on the r. Neretva for the period 2017 – 2021 (million m³)

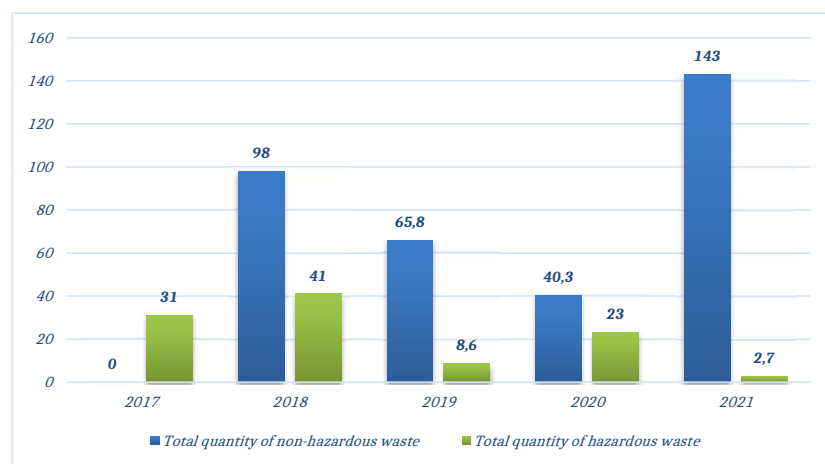


Diagram 16. Total quantity of non-hazardous waste and hazardous waste* in Hydroelectric power plants on the r. Neretva for the period 2017 – 2021 (t)

Hidroelektrane na Neretvi

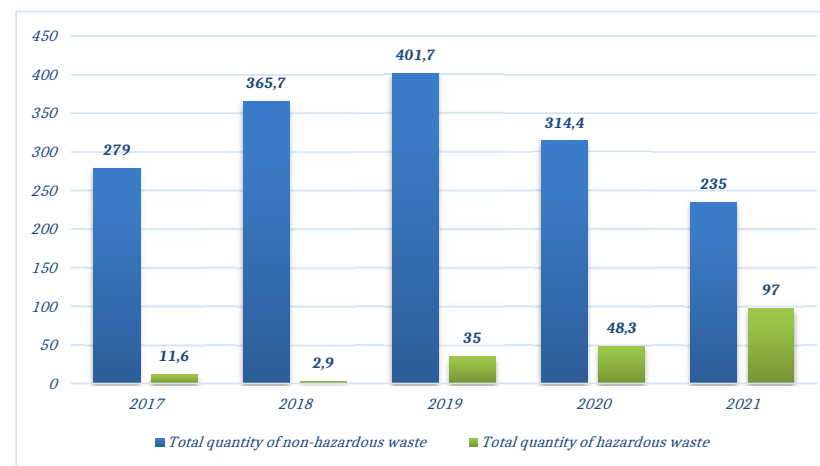


Diagram 17. Total quantity of non-hazardous waste and hazardous waste* in distribution subsidiaries: Sarajevo, Tuzla, Bihać, Zenica and Mostar, for the period 2017 - 2021 (t)

8. REALIZATION OF CONDITIONS OF ENVIRONMENTAL AND WATER PERMITS

Thermal power plants

TPP "Tuzla" and TPP "Kakanj" implement all imposed measures from valid environmental and water permits, as part of their regular business activities.

TPP "Tuzla"

In accordance with Article 93 of the Law on Environmental Protection ("Official Gazette of the Federation of BiH", No. 15/21), TPP "Tuzla", on 14 April 2021, submitted an application for the renewal of the environmental permit (No. 02-04-11-5312/21) to FMET.

The application for renewal of the environmental permit for TPP "Tuzla" was not published on the FMET's website. On 18 May 2021, TPP "Tuzla" submitted to FMET an inquiry on the treatment of the submitted application for renewal of the environmental permit.



When applying for the renewal of the environmental permit, the competent Ministry was informed of the difficulties in obtaining the certificate from the competent administration that the TPP has no outstanding financial obligations for penalties imposed for violations committed in the field of environmental protection. The FBiH Tax Administration declared that it is not competent to issue the certificate, and FMET, at the request of JP EPBiH, submitted a response that during the preparation of the text of the Law, there was a technical error by which the Tax Administration was designated as the authority responsible for issuing the relevant certificate. In the meantime, TPP "Tuzla" obtained a certificate of facts from the official records of the Municipal Court, and on 10 June 2021, a supplement to the application was made with the certificate that TPP "Tuzla" was not fined for violations in the field of the Law on Environmental Protection, and a letter (number 02-04-11-7868/21) sent to FMET asked about the status of the application for the renewal of the integral environmental permit of TPP "Tuzla".

The environmental permit for TPP "Tuzla" was valid until 13 July 2021. On 15 July 2021, TPP "Tuzla", by letter No. 02-04-11-93/14/21, submitted to FMET a request for instructions on the conduct until the issuance of the environmental permit.

Upon the request for an environmental permit, FMET

took no action in terms of submitting the request for supplementing or possible elimination of deficiencies from the request for almost 5 months. The aforementioned Ministry, in terms of submitted requests, declared on 2 September 2021 by the act number: UPI 05/2-02-19-5-76/21-1, which requested that TPP "Tuzla" adjust the application submitted 5 months earlier in a way that it harmonizes it with the by-law, namely the Regulation determining the plants and facilities which must have environmental permit, which was adopted on 30 June 2021 and entered into force on 8 July 2021. FMET made the conclusion UPI 05/2-02-19-5-76/21-2 AK of 27 October 2021 that the application for renewal of the environmental permit submitted by TPP "Tuzla" on 14 April 2021 is considered untidy and treated as if it had not been submitted. TPP "Tuzla" hired the company ENOV-a d.o.o. Sarajevo, which drafted a new application for an environmental permit and which was submitted to FMET by act 02-04-11-13649/21 of 8 November 2021. Against the conclusion of the FMET UPI 05/2-02-19-5-76/21-2 AK of 27 October 2021, TPP "Tuzla" initiated an administrative dispute before the competent court.

Realized activities according to the orders in the environmental permit (act number: UP-I 05/2-2311-151/15 SN):

- the prescribed general environmental protection obligations were fulfilled during the operation and cessation of operation of the plant;
- measures to control and rationalise the use of raw materials, water and energy were implemented;
- activities and measures to prevent and minimize the negative impact on water were implemented;
- the "Construction of the closed system for return water in TPP "Tuzla" Project was implemented; the construction of a collector for the collection of all wastewater was planned as part of the construction of Unit 7;
- activities related to water monitoring were implemented;
- activities related to waste management were implemented;
- measures to prevent and minimize air pollutant emissions were implemented;
- an analysis of the impact of air emissions of emission points of TPP "Tuzla" on the parameters of imission from air quality monitoring of Tuzla Canton (based on the available database from TK monitoring-networks of imission metering stations of Tuzla Canton and meteorological parameters);
- all reports ordered by the environmental and water permit were submitted to the competent ministries.

TPP “Kakanj”

Given that the valid environmental permit for TPP “Kakanj” expired on 23 November 2021, all preliminary actions were performed to obtain a new environmental permit. The application for renewal of the environmental permit was submitted to the competent FMET.

The Sava River Basin Agency submitted to TPP “Kakanj” the Decision on Amendment of the Decision on Water Permit number: UP-I/25-3-40-161-10/19, on 29 December 2021.

The realized activities according to the above-mentioned permits are given as follows:

- Phase II of rehabilitation of the Slapnički potok collector was completed;
- the Slapnički potok collector was upgraded in the length of 85 meters;
- the quality control of incoming energy sources was performed regularly;
- the generated inert waste was disposed of in a slag and ash landfill;
- preventive measures of maintenance of devices and plants for flue gas purification were implemented;
- preventive measures of maintenance of devices and plants for wastewater purification were

implemented;

- within the existing possibilities, regular wetting of the slag and ash landfill was carried out;
- continuous monitoring of air emissions of SO₂, CO, NO_x, CO₂, dust (PM₁₀), then flow (dry gas, normal conditions and 6 % O₂) was carried out;
- calibration/verification of equipment for continuous emission monitoring according to BAS EN 14181 was carried out;
- monitoring of leachates at Slapnički potok was carried out;
- noise monitoring – equivalent noise level for day and night and noise map was made;
- prepared and submitted reports on performed wastewater quality measurements to the SRB Agency;
- prepared and submitted reports on performed measurements of air pollutant emissions (FMET and environmental inspection);
- prepared and submitted reports on the quantities of waste generated in the Ministry of Environmental Protection of the ZDK.
- updated Large-Scale Accident Prevention Plan submitted to the Municipal Headquarters of Civil Protection;
- electronically reported to FMET according to the Rulebook on Plant Registers and Pollution;

- any emergency that may have a negative impact on the environment reported to the FMET and to the inspection;
- regularly measured and recorded quantities of water abstracted, records were kept, and data were submitted to the competent SRB Agency;
- performed safe storage and handling of hazardous substances and waste generated at the TPP site;
- provided handy means for quick intervention in case of uncontrolled release of dangerous substances.

8.3. Hydro Power Plants on the River Neretva

According to valid environmental and water permits, the following activities are regularly conducted.

- protection of water quality;
- protection of air quality;
- waste management;
- minimizing negative impacts produced by noise;
- minimizing negative impact on fauna;
- minimising other negative environmental impacts;
- monitoring of: wastewater, water regime, waste and noise levels.



Power distribution subsidiaries

„Elektro distribucija“ Sarajevo

The conditions from the Environmental Permit for sHPP “Osanica 1” in Goražde were observed (environmentally acceptable flow) and environmental protection measures were implemented.

The Ministry of Economy of the Bosnian-Podrinje Canton Goražde on 28 December 2020 issued a new Decision on water permit (act number UP-1:04-21-733/20, with a validity period of two (2) years with the obligation to submit the Study on Ecologically Acceptable Water Flow (EPP) on the river Osanica until 31 December 2021. To this end, the subsidiary ED Sarajevo

concluded a contract with Institut za hidrotehniku d.d. Sarajevo for the preparation of the Study on Ecologically Acceptable Water Flow (EPP) and by comparing the water flow with a watercourse of similar characteristics in the immediate environment. The completion time is fifteen (15) months. Due to the deteriorating epidemiological situation in ED Sarajevo, as well as in the Institute, the conditions for the installation of an inflow measuring probe were not created, so the Ministry extended the deadline for submitting the Study until 30 June 2022.

After the flood and the spill of the river Željeznica that hit the Sarajevo Canton area on 4/5 November 2021, based on the request of the Municipality of Ilidža, the Federal Water Inspector carried out an announced inspection at the site of Bogatići Dam in the presence of the Head of Production and on that occasion ordered two measures:

- submitting an application for a water permit, which was not issued by the Sava River Basin Agency after the landslide was activated in 2011, although the Subsidiary submitted an application for its issuance on several occasions; in 2012, the Sava River Basin Agency issued an order for charging the reservoir;
- development of a new general act on the maintenance, use and observation of water facilities.

Activities were undertaken to eliminate them, and already on 17 December 2021, the Subsidiary submitted to the Sava River Basin Agency an application for the issuance of a water permit. A new General Act for Operating and Maintenance Plan has been developed in accordance with the Rulebook on the Minimum Content of the General Act on Maintenance, Use and Observation of Water Facilities.

The conditions from the water permit for the Temporary Waste Storage Facility Azići were respected.

„Elektro distribucija“ Tuzla

Power facilities that belong to the subsidiary ED Tuzla: sHPP “Modrac” in Lukavac and sHPP “Sniježnica” with hydro reservoir in Teočak. ED Tuzla has valid environmental and water permits for all facilities. The new federal regulations adopted in 2021 (Regulation determining the plants and facilities that must have environmental permit, Regulation on projects for which an environmental impact assessment is mandatory and projects for which a decision on the need for an environmental impact assessment is made, and the Rulebook on plants, facilities and warehouses in which hazardous substances are present that can lead to major accidents, “FBiH Official Gazette”, No. 51/21) define that the Subsidiary ED Tuzla is not obliged to renew environmental permits for the facilities of sHPP “Modrac”, sHPP “Sniježnica” and HPP “Sniježnica”, and the issued permits are valid until the expiry date. It was also established that the Subsidiary ED Tuzla is not obliged to prepare the Report on the State of Safety, the Large-Scale Accident Prevention Plan, the Information on Safety Measures or the Internal Intervention Plan, which was an obligation until the entry into force of this Rulebook and was regularly performed.

Given that the issued environmental and water permits are valid until the expiration of their validity, the activities prescribed by them continue, which are also defined by the legal regulations in the field of environmental protection:

- regular observation of dams and reservoir, control of working parameters, visual control of erosive processes, etc.
- technical, geodetic and physical observation of the dam;
- selective separation of waste and keeping records of produced waste quantities;

- restocking of hydro reservoir “Sniježnica”, once a year;
- testing and evaluation of physical and chemical parameters of water quality.

According to the obligations from the valid water permit for the Sniježnica dam and hydro reservoir, the Main Design for the construction of the septic tank was completed and the Investment Decision was made, and the public procurement procedure for the supply and installation of the septic tank was not conducted in 2021, and will be repeated in the next year.

In 2021, the procedure for procurement of the service of landslide remediation on the left and right sides of the Sniježnica dam was initiated, but by the end of the year this service was not contracted. This service and execution of works is expected to be completed by the end of 2022.

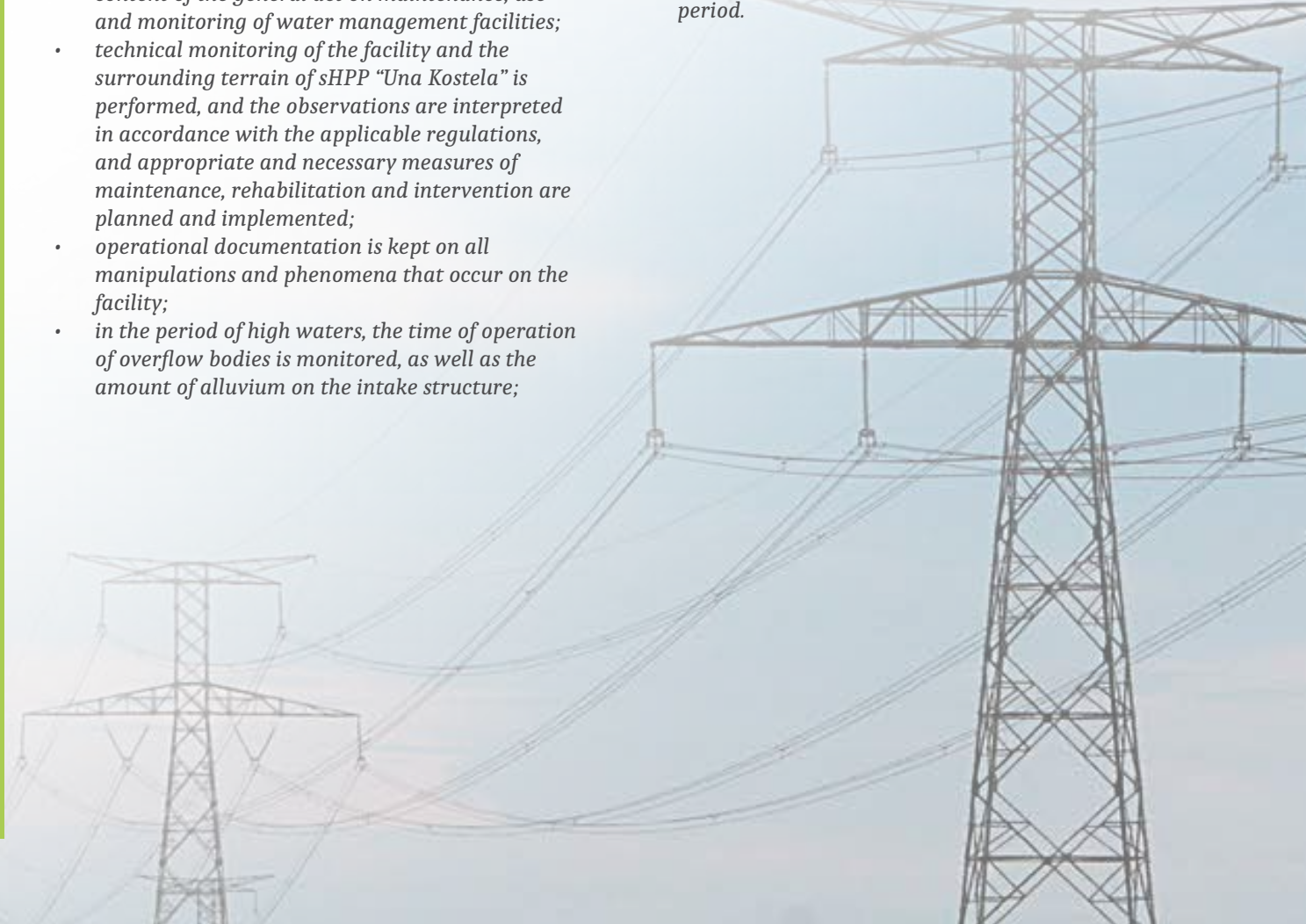
The Ministry of Tuzla Canton has confirmed the exemption from the obligation to renew environmental permits for overhead lines over 1 kV, after the expiration of their validity. The explanation states that permits are issued only for the construction of these power facilities, so that it is not necessary to re-issue permits for the purpose of exploitation.

„Elektro distribucija“ Bihać

The power facilities of sHPP “Una Kostela”, sHPP “Bihać” and sHPP “Krušnica” belong to the subsidiary ED Bihać. All facilities have environmental and water permits. Specific conditions and measures that are continuously monitored are issued in these permits, as follows:

- the captured amount of water for the needs of sHPP “Una Kostela” is performed through an automated hydrological monitoring system, and is registered on the hydrological measuring profile, at the entrance to the supply channel, surge tank and diffuser outlet;
- hydro-mechanical equipment manipulations are performed in the manner described in the Plan of Operation and Maintenance in accordance with the provisions of the Rulebook on the minimum content of the general act on maintenance, use and monitoring of water management facilities;
- technical monitoring of the facility and the surrounding terrain of sHPP “Una Kostela” is performed, and the observations are interpreted in accordance with the applicable regulations, and appropriate and necessary measures of maintenance, rehabilitation and intervention are planned and implemented;
- operational documentation is kept on all manipulations and phenomena that occur on the facility;
- in the period of high waters, the time of operation of overflow bodies is monitored, as well as the amount of alluvium on the intake structure;
- sampling of technological and waste water from the unit in sHPP “Una Kostela” and from drainage wells 1 and 2, as well as sampling of water from the river Una downstream and upstream from the facility sHPP “Una Kostela” was performed by a certified institution, in the period from January to June 2021.

The new federal regulations define that the subsidiary ED Bihać is not obliged to apply for an extension of environmental permits after the expiry of the validity period.



9. ENVIRONMENTAL MANAGEMENT SYSTEM

TPP “Tuzla”

Internal audits of IMS were conducted in January, February and March. The result of the internal audits showed the need for corrective actions and improvements in individual processes.

The company ICS d.o.o. Sarajevo, in September, conducted the control audit of the Integrated Quality and Environment Business Management System in TPP “Tuzla”, according to the requirements of ISO 9001:2015 and ISO 14001:2015.

All activities in the Sector for Management Systems were carried out with the application of preventive measures to prevent the spread of coronavirus (COVID-19). ICS-a d.o.o. Sarajevo issued the Integrated Quality and Environment Management System Certificate with validity until 26 September 2024.



TPP “Kakanj”

TPP Kakanj has been certified according to the requirements of the BAS EN ISO 14001:2017. Employee training on environmental aspects was conducted through the implementation of the requirements of the BAS EN ISO 14001:2017: Environmental Management Systems.

The harmonization of the Environmental Management System with the requirements of the said standard implied the introduction of the following principles:

- to constantly inform the employees of the importance of meeting environmental legal requirements;
- to define and publish the environmental policy;
- to define environmental objectives.



Hydro Power Plants on the River Neretva

Within the Sector for Management Systems in accordance with the defined Program of Improvement of the Integrated Management System (IMS) for 2021, on the basis of the aforementioned Program, activities were implemented as follows:

- an analysis of environmental aspects related to the process of electricity generation in plants/sectors was performed during January;
- an internal audit was conducted in all plants/sectors during May and June;
- quality objectives and environmental objectives for 2021 were prepared in April;
- an assessment of compliance of work with legal and other environmental requirements was carried out in October;
- the IMS documents (Management review) were reviewed by the management, in December.

The company ICS-a d.o.o. Sarajevo delivered the Report on the Surveillance Audit of the Integrated Management System (IMS) in the HPPs on the river Neretva - of the Institute for System Certification according to the requirements of ISO 9001:2015 and ISO 14001:2015, which was held from 15 December 2021 to 16 December 2021.

„Elektro distribucija“ Tuzla

The first surveillance audit of Environmental Management System BAS EN ISO 14001 was completed in June, with an audit of the System according to ISO 9001, which together constitute the Integrated Management System - IMS.

The Subsidiary continuously works to improve the relationship with the environment, through a systematic approach to waste management, control of environmental aspects, identification and implementation of legal regulations, fulfilment of set environmental objectives, and corrective measures.

Environmental management, that has been recognized as a separate process, is valued in terms of determining the organization's context and possible risks, and the measures for identified risks and opportunities were addressed.

„Elektro distribucija“ Sarajevo

Quality Management System Certificate, obtained in accordance with the requirements of the ISO 9001:2015, from the company ICS d.o.o. Sarajevo, is valid until 9 July 2022.

In 2021, the second surveillance audit was conducted. In the field of environmental management, the Subsidiary is continuously working to improve the relationship with the environment, through a systematic approach to waste management and implementation of regulations. The goal is to build an integrated management system.



10. ENVIRONMENTAL PROTECTION WITHIN THE DEVELOPMENT OF ELECTRIC POWER FACILITIES

TPP “Tuzla”

*Preparatory activities for reclamation of Divkovići
and Plane combustion products landfills*

*The Plane and Divkovići landfill for combustion products is not used for
disposal and is in the phase of preparatory works for closure and reclamation.*

On 22 January 2020, the FMET issued a Conclusion on the termination of the procedure (for the second time), for the issuance of the Environmental Permit for the closure of the Plane and Divkovići landfill for combustion products. The explanation stated that the interested public again submitted comments on the supplemented documentation (comments of the public submitted after the legal deadline for submitting comments). TPP "Tuzla" submitted a statement on the mentioned conclusion on the termination of the procedure and on 13 July 2020 it submitted a new version of the environmental documentation, i.e., the Environmental Impact Assessment Study with accompanying documents. The FMET submitted comments on the new documentation from NGOs and local community MZ Bukinje. The comments were processed by the licensed company for the preparation of documentation for obtaining the environmental permit ENOVA d.o.o. Sarajevo with which TPP "Tuzla" had concluded a contract and finalized the documentation related to obtaining the environmental permit. On 16 March 2021, TPP "Tuzla" received a draft environmental permit for the closure of the Plane, Divkovići I and Divkovići II slag and ash landfills. Comments on the draft environmental permit were made by: Centre for Ecology and Energy Tuzla and Association Aarhus Centre in BiH, Sarajevo. On 7 April 2021, TPP "Tuzla" submitted to FMET a response to the given comments of non-governmental organizations, and FMET did not issue an environmental permit by the end of 2021.

Preliminary activities for the construction of a desulphurization plant in TPP "Tuzla"

TPP "Tuzla" continuously performs control of homogenization and preparation of coal in accordance with the designed parameters of the combustion plant, and optimization of process parameters in order to achieve better combustion of coal, which results in reduction of air pollutant emissions.

According to the National Emission Reduction Plan (NERP), solid particles in TPP "Tuzla" in the ten-year period of the Reduction Plan (2018-2028), air emissions should be reduced from the existing value of 534.0 t/g to the emission of 289.0 t/g by 2028. TPP "Tuzla" should reduce NO_x emissions from the current 3,584.0 t/g to 2893.0 t/g by 2028.

Reduction of SO₂ is a complex problem and it is evident that it is not possible to reduce SO₂ emissions, i.e., to reach the emission ceiling per NERP without flue gas desulphurisation. As FMET did not issue an environmental permit for desulphurisation of Units 5 and 6 by wet process, JP EPBiH, at the Supervisory Board meeting held on 31 May 2018, adopted the

Decision on investment in the "Construction of the plant by semi-dry process for flue gas desulphurisation in Unit 6" Project.

JP EPBiH concluded a Contract with the consultant in the construction of flue gas desulphurization plant in Unit 6 (Contract number 058-TET-20). The Consortium was selected as a consultant for the flue gas desulphurization project in Unit 6: ILF Consulting Engineers Polska sp. Z.o.o, Poland, EMG Consult EOOD, Bulgaria, ENOVA d.o.o. Sarajevo, Sarajinženjering d.o.o. Sarajevo, represented by ILF Consulting Engineers Polska sp. Z.o.o., Poland. A Preliminary environmental impact assessment was completed and submitted to the competent Ministry. FMET issued a Conclusion on the preparation of an Environmental Impact Assessment Study for the flue gas desulphurization in Unit 6 (Number: UPI 05/2-02-19-5-92/20 of 22 September 2020). The preparation of the Environmental Impact Assessment Study was completed, and public consultations were held. The Consultant carried out an analysis of the comments and supplementation of the documentation based on the comments of the Expert Commission and NGOs.



TPP “Kakanj”

Environmental protection within TPP “Kakanj” is primarily implemented by the implementation of requirements from existing approvals for the operation of thermal power plant, i.e., the implementation of obligations from the environmental and water permits.

Environmental protection is implemented by:

- implementation of air emission reduction projects (preliminary activities in the construction of flue gas desulphurization plant for Units 6 and 7);
- implementation of the Project for arranging the slag and ash landfill;
- realization of activities ordered by the water permit.

„Elektro distribucija“ Sarajevo

Nineteen (19) new transformer substations were constructed and commissioned. Of these, eighteen (18) are cable - free-standing type, and one (1) is a pillar transformer substation. All new power facilities are designed with hermetically sealed oil transformers. Under each transformer in cable transformer substations, the foundations are designed in such a way as to enable the collection of the entire amount of oil of the power transformer (oil trough with a minimum volume of 0.6 m³, oil impermeable) so that the technical performance meets environmental standards.

Based on investment decisions, 2,973 new low-voltage connections, 10(20) kV medium-voltage lines in the length of 31.79 km and 0,4 (kV) low-voltage lines in the length of 89.85 km were built.

10(20) kV medium voltage lines in the length of 5.45 km, 0.4 kV low voltage lines in the length of 10.663 km and 24.268 pieces of calculation measuring points (OMM) were reconstructed.

„Elektro distribucija“ Zenica

Fourteen (14) new transformer substations were constructed and commissioned. All new power facilities are designed with hermetically sealed oil transformers. Under each transformer in cable transformer substations, the foundations are designed in such a way as to enable the collection of the entire amount of oil of the power transformer (oil trough with a minimum volume of 0.6 m³, oil impermeable) so that the technical performance meets environmental standards.

Based on investment decisions, 2,713 low-voltage connections, medium-voltage lines in the

length of 25.669 km and low-voltage lines in the length of 137.200 km were built.

One (1) 10(20)/0.4 kV transformer station, 4.475 km medium voltage lines, 3.688 km of low voltage lines and 20,353 pieces of billing metering points (OMM) were reconstructed.

„Elektro distribucija“ Bihać

Thirteen (13) new transformer substations were constructed and commissioned. All new power facilities are designed with hermetically sealed oil transformers. Under each transformer in cable transformer substations, the foundations are designed in such a way as to enable the collection of the entire amount of oil of the power transformer (oil trough with a minimum volume of 0.6 m³, oil impermeable) so that the technical performance meets environmental standards.

Based on investment decisions, 1,363 low-voltage connections, medium-voltage lines in the length of 9.7 km and low-voltage lines in the length of 22.63 km were built.

Medium voltage lines in the length of 28.49 km, and 592 pieces of calculation measuring points (OMM) were reconstructed.

„Elektro distribucija“ Mostar

Fourteen (14) new transformer substations were constructed and commissioned. All new power facilities are designed with hermetically sealed oil transformers. Under each transformer in cable transformer substations, the foundations are designed in such a way as to enable the collection of the entire amount of oil of the power transformer (oil trough with a minimum volume of 0.6 m³, oil impermeable) so that the technical performance meets environmental protection standards.

Based on investment decisions, 742 low-voltage connections, medium-voltage lines in the length of 13.3 km and low-voltage lines in the length of 42.4 km were built.



11. CAPITAL INVESTMENTS

Project for the construction of the Hydroelectric Power Plant “Vranduk” (River Bosna)

The Decision on the environmental permit for the construction of HPP “Vranduk” (act number: IP-I-05/2-23-52/16, 28 July 2026) was issued by FMET with a validity of 5 years.

JP EPBiH submitted to FMET, within the legal deadline, an application for issuing an environmental permit for HPP “Vranduk” with the available documentation, on 27 April 2021.

The FMET, as part of the processing of the application, requested a supplement to it, i.e., the acts obtained in terms of urban planning and construction (urban permit and general approval for construction/building permit).

The FMET issued a conclusion on the rejection of the application, on 29 December 2021, due to the non-existence of valid acts in terms of urban planning and construction.

With the conclusion of the FMET, the HPP “Vranduk” project will again undergo the procedure of environmental impact assessment and obtaining an environmental permit after obtaining the act (urban planning/approval in principle/building permit) from the Federal Ministry of Physical Planning and innovation of all other necessary documentation.

Project for the construction of the Hydroelectric Power Plant “Janjići” (River Bosna)

The Decision on the environmental permit for the construction of HPP “Janjići” (act number: IP-I-05/2-23-93/16, 31 May 2016) was issued by FMET with a validity of 5 years.

JP EPBiH submitted to the FMET, within the legal deadline, an application for issuing an environmental permit for the Project of construction of HPP “Janjići” with all the necessary required documentation, on 27 April 2021.

After carrying out the procedure of processing the application and a number of urgencies and clarifications by JP EPBiH, on 24 December 2021, the FMET issued a conclusion rejecting the request of JP EPBiH for issuing an environmental permit for the Project of Construction of HPP “Janjići” because hydroelectric power plants are not subject to obtaining an environmental permit (act number UPI 05/2-02-19-5-83/21-2 AK, 24 December 2021). The same conclusion prescribes the general environmental protection conditions for the construction of HPP “Janjići” in accordance with the FBiH Law on Environmental Protection. Also, the

same ordered: “If the validity period of the currently valid acts of construction expires, and the legal entity JP Elektroprivreda BiH d.d. Sarajevo fails to start the construction of the subject project and if the investor does not extend it after the expiration of the validity of the acts of construction, this Ministry considers that the matter of the need for a repeated environmental impact assessment procedure depends on the conditions for obtaining the acts of the Federal Ministry of Physical Planning in order to realize the construction of the subject project.” For clarification, the conclusion extended the validity of the environmental permit for HPP “Janjići” until the end of the validity period of the approval in principle for the construction of HPP “Janjići”, i.e., until the end of May 2024.

Project for the construction of the Hydroelectric Power Plant “Kovanići” (River Bosna)

In 2021, continuous monitoring of underground water levels was continued on installed piezometers.

Project for the construction of Unit 8 of the TPP “Kakanj”

Innovated investment - technical and environmental documentation of replacement Unit 8 in TPP “Kakanj”.

According to the FBiH Law on Environmental Protection (“FBiH Official Gazette”, Nos. 33/03 and 38/09), JP EPBiH, within the prescribed deadline, submitted to FMET an application for the renewal of the environmental permit for Unit 8 of TPP “Kakanj”. After the conducted procedure, FMET issued a decision on the environmental permit (number: UP-I/05-23-11-66/17, 7 July 2017). A clause of finality was obtained for the same.

Upon obtaining the clause of finality, the relevant permit was complained against. Specifically, the NGO UG Alternativa Kakanj sued FMET before the Sarajevo Cantonal Court for mismanagement of the process of public insight into the Application for renewal of the environmental permit.

The FMET, by letter number: UPI 05/2-23-11-66/17SN, 4 November 2021, delivered the judgment of the Sarajevo Cantonal Court (act number: UPI

05/2-23-11-66/17 SN, 4 November 2021) to JP EPBiH. The same requested JP EPBiH to declare whether it remains with the application for issuing an environmental permit for the Project of Construction of Unit 8 of the TPP "Kakanj". JP EPBiH replied to the submitted request within the given deadline and remained with its submitted application.

The FMET acted on the judgment of the Court and according to the FBiH Law on Environmental Protection ("FBiH Official Gazette", Nos. 33/09 and 38/09) initiated a new procedure, i.e., public insight into the application for an environmental permit. Upon public inspection, comments from interested parties (NGOs and local self-government) were submitted to the FMET upon request. The comments were forwarded to JP EPBiH for which clarifications and answers were submitted, within the deadline, with the view that the JP EPBiH remains at the completion of the previous procedure for issuing the environmental permit.

The procedure is pending.

Project for the construction of Unit 7 of TPP "Tuzla"

According to the FBiH Law on Environmental Protection ("FBiH Official Gazette", Nos. 33/03 and 38/09), JP EPBiH, within the prescribed deadline, submitted to FMET an application for the renewal of the environmental permit for Unit 7 of TPP "Tuzla". After the conducted procedure, FMET issued a decision on the renewed environmental permit (number: UP-I/05-23-11-71/15, 18 July 2016). A clause of finality

was obtained for the same, on 15 September 2016.

On 2 November 2016, the FMET informed the JP EPBiH that the NGO EKOTIM Sarajevo had filed a lawsuit with the Sarajevo Cantonal Court against FMET for the annulment of the final decision on environmental permit. JE EPBiH, as an interested party, submitted its comments on the lawsuit and its position on it.

According to the new Law on Environmental Protection ("FBiH Official Gazette", No. 15/21) and the Decree determining the plants and facilities that must have an environmental permit ("FBiH Official Gazette", No. 51/21), JP EPBiH submitted the Application for issuing an environmental permit for the Project of Construction of Unit 7 of TPP "Tuzla" (act number: 01-4-12674/2021, 20 April 2021) within the legally defined deadline (90 days before the expiry of the previous permit) with all the necessary, requested, documentation. The documentation also contains a part related to the possible cross-border impact of Unit 7 on the air quality of neighbouring countries which, through the Convention on Transboundary Air Pollution, expressed their suspicion that they would be negatively affected by the future work of Unit 7 (R Serbia, R Croatia, R Montenegro).

According to the applicable, aforementioned legal framework, within 60 days from the date of receipt of the "orderly" application for an environmental permit, having passed the public inspection procedure (participation of the public, interested parties and the local self-government unit – publication on the FMET website), FMET should have completed the renewal of the environmental permit on 18 July 2021 (to reject the application as "disorderly" or to issue a renewed environmental permit).

FMET, within the legally prescribed deadline, made the request publicly available on the website of the Ministry. This was also done because of the requirements set by the Convention on Transboundary Air Pollution. Upon public insight, all submitted questions and remarks from FMET were answered in a timely manner by JP EPBiH.

In the previous period, JP EPBiH sent urgent letters to FMET requesting information from FMET on the status of the application of the said project. The JP EPBiH did not receive an official response to the sent urgencies.

Upon a number of mentioned urgencies, FMET sent to JP EPBiH a Query to submit information on the delegate's question from the House of Peoples of the Federation of BiH: "Provide accurate information about the beginning of the construction of Unit 7 and what exactly is being done about it." - Act number: 05/2-19-5-811/21, on 6 January 2022. On 17 January 2022, JP EPBiH submitted the requested information – Act number: 01 – 7 – 1492/2022.

Furthermore, on 19 January 2022, JP EPBiH received the judgment of the Sarajevo Cantonal Court, as an interested party, which takes into account the lawsuit of EKOTIMA Sarajevo and which annuls the decision on the renewed permit from 2016, and the case was returned to FMET for a new decision.

According to the judgment in question, JP EPBiH was not informed by FMET about the renewal of the procedure in question, as well as the submitted Application for issuing an environmental permit from 2021.

JP EPBiH, referring to the provisions of the FBiH

Law on Administrative Procedure and the FBiH Law on Administrative Disputes, sent an urgency (Act number: 01-7- 14176-1/22, 19 May 2022) requesting information from FMET regarding the handling of the aforementioned judgment, i.e., the application for issuing the environmental permit from Unit 7 from 2021.

Upon the urgency, JP EPBiH did not receive the necessary information from FMET.

The procedure is pending.

Photovoltaic Power Plant Construction Project

According to the provisions of the FBiH Law on Environmental Protection ("FBiH Official Gazette", No. 15/21) and binding regulations for photovoltaic power plant construction projects, it is not necessary to obtain environmental permits at the level of the Federation. Environmental conditions are defined in the next steps of the projects according to the legal legislation in the field of physical planning and construction.

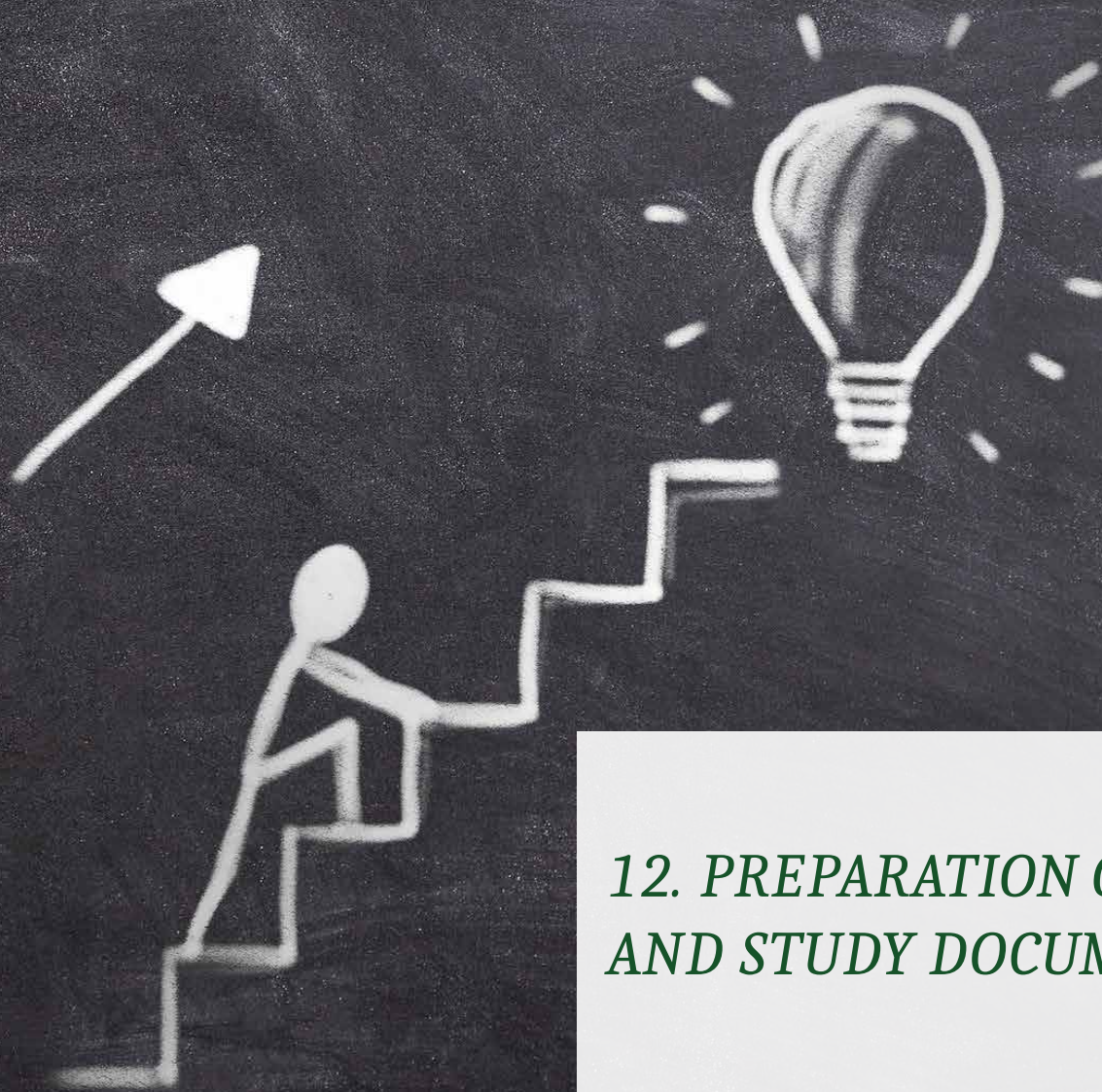
The exception to the above is the legal framework of the Herzegovina-Neretva Canton. According to the Law on Environmental Protection of the HNK and binding regulations for the implementation of projects for the construction of photovoltaic power plants planned in the HNK, it is necessary to obtain an environmental permit, as one of the conditions for obtaining an urban planning permit.

For the projects planned to be built at the locations of completed exploitation works on surface mines according to the FBiH Law on Mining, in addition to other permits, it is necessary to obtain environmental permits for their closure.

Photovoltaic Power Plant "Gračanica"

For PVPP "Gračanica", that is, for the closure of part of the exploitation, previously recultivated, areas on coal mine RU "Gračanica", a positive opinion was obtained in terms of environmental protection from FMET, namely, it is not necessary to obtain an environmental permit.





12. PREPARATION OF PLANNING AND STUDY DOCUMENTS

In the segment of study and planning documents, the following projects/studies were implemented:

Development Projects

- Justification Study for the Construction of Photovoltaic Power Plants on the Free Surfaces of the EPBiH Concern's Coal Mines and on the Slag and Ash Landfills of TPP EPBiH – PVPP “Gračanica” + review;
- Justification Study for the Construction of Photovoltaic Power Plants on the Free Surfaces of the EPBiH Concern's Coal Mines and on the Slag and Ash Landfills of TPP EPBiH – PVPP “Kreka” + review;
- Justification Study for the Construction of Photovoltaic Power Plants on the Free Surfaces of the EPBiH Concern's Coal Mines and on the Slag and Ash Landfills of TPP EPBiH – PVPP “Divkovići” + review;
- Justification Study for investment in a photovoltaic power plant for own needs for the Cement Factory Lukavac;
- Analysis of tax schemes for CO₂ emissions with the proposal of the optimal sustainable scenario for EPBiH - Study;
- Analysis and projections of EPBiH coal needs by 2050 with the projection of the coal mines and mining facilities suspension dynamics - Study;
- Establishment of an energy management system in all EPBiH activities/parts in accordance with ISO EN 50001;
- Establishment of the Institute for Energy, Climate and the Environment – Study;
- Justification Study for the Construction of Photovoltaic Power Plants on the Free Surfaces of the EPBiH Concern's Coal Mines and on the Slag and Ash Landfills of TPP EPBiH – PVPP “Kakanj Bijele Vode” + review;
- Justification Study for the Construction of Photovoltaic Power Plants on the Free Surfaces of the EPBiH Concern's Coal Mines and on the Slag and Ash Landfills of TPP EPBiH – PVPP “Gornja Breza” + review;
- Possibilities of planting energy crops/biomass on the land of the EPBiH Concern 's coal mines - Preliminary elaboration with the master plan of activities;
- Development program of use of alternative fuels SRF/RDF in EPBiH: Possibility of using alternative fuels SRF/RDF in EPBiH thermal power plants within the framework of sustainable economic and technological parameters and environmental regulatory conditions;

- Preparation of a logistics study on procurement, transport, quality and long-term supply of SRF/RDF;
- Implementation plan for the introduction of biofuels/alternative fuels EPBiH (I. SRF/RDF, II. Waste wood biomass, III. Fast-growing biomass);
- Baseline study of the application of hydrogen in energy.

Capital projects

Final activities on the construction of the WPP “Podveležje”, functional tests, commissioning, test of compliance with the Network Code, power curve test.

Two-year monitoring of birds and bats was established in the area of WF “Podveležje”.



13. COSTS IN ENVIRONMENTAL PROTECTION

*In the JP EPBiH, for the time being, no special records are kept on investments and costs for implementation of plans and programs in the domain of environmental protection and natural resources. Funds are planned and realized in the framework of investments and regular maintenance of plants and facilities. There is no harmonized procedure for presenting objective indicators of total costs in realized activities, which includes the fees for the use of natural resources. Therefore, it is difficult to provide safe and complete data on total spent funds of JP EPBiH in this context. According to the data available for the preparation of this document, the total amount is **50,493,300.0 BAM**. This indicator is a confirmation that environmental protection is an important part of the total business of our company also in financial aspect.*

The Table 3, according to available data, provides costs of environmental protection by subsidiaries, at the level of the Company Directorate, and the total for JP EPBiH.

Table 3 Environmental Protection Costs in the Domain of Environmental Management

Organization	(BAM)
Subsidiaries	
TPP "Tuzla"	Investments fees and services=700,525,0
TPP "Kakanj"	2.029.636,0
HPPs on the River Neretva	2.908.618,0
ED Sarajevo	428.339,0
ED Tuzla	713.793,0
ED Zenica	1.157.166,0
ED Bihać	643.246,0
ED Mostar	167.760,0
Fee for air pollution of TPP "Tuzla"	1.875.558,0
Fee pursuant to the Law on the allocation of part of the revenues generated by work of TPP	4.310.352,0
Fee for water protection	22.847,0
Fee for air pollution of TPP "Kakanj"	3.165.890,0
Fee pursuant to the Law on the allocation of part of the revenues generated by work of TPP	3.361.150,0
Fee for water protection	50.789,0
Contributions for hydro reservoir (HPPs on river Neretva)	27.269.615,0
Fee for water protection HPPs on river Neretva	5.052,0
Company Directorate	481.927,0
Sector for strategic development	52.705,0
Capital investments	203.726,0
Water charges and communal utilities	944.607,0
Agreements on the regulation of outstanding obligations referred to in Article 35 of the Law on Freshwater Fishery	50.493.300,0
TOTAL:	50.493.300,0



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