

Pursuant to Article 4.8. of the Law on Transmission of Electric Power, Regulator and System Operator in Bosnia and Herzegovina (Official Gazette of BiH, 7/02, 13/03, 76/09 and 1/11) and Articles 6, 7 and 9 of the Rule on Tariff Proceedings (Official Gazette of BiH, 44/05), deciding upon the application of Independent System Operator in Bosnia and Herzegovina, number 29/24 of 30 October 2024, at the session held on 26 December 2024, the State Electricity Regulatory Commission passed a

## **DECISION**

### **ON TARIFFS FOR SYSTEM SERVICE AND ANCILLARY SERVICES**

#### **Article 1** ***(Subject Matter)***

This decision defines a tariff for system service, price of electricity procurement for covering of losses in the transmission system in a regulated manner, compensation for operation of generators in the capacitive regime and a tariff for excessive withdrawal of reactive power from the transmission system of Bosnia and Herzegovina.

#### **Article 2** ***(System Service)***

- (1) The financial scope of the system service in 2025 shall be set to the amount of BAM 95,922,902 and the tariff for system service shall amount to 0.4789 fening/kWh.
- (2) The funds collected on the basis of the tariff for system service shall be used exclusively for market-based procurement of the frequency containment reserve, the automatic frequency restoration reserve, the manual frequency restoration reserve, replacement reserve and market-based and regulated procurement of electricity to cover losses in the transmission system as well as other costs related to the system service.

#### **Article 3** ***(Electricity Procurement for Covering of Losses in the Transmission System)***

- (1) The Independent System Operator in Bosnia and Herzegovina (NOS BiH) shall procure electricity for covering of losses in the transmission system in a regulated manner at price of 198.77 BAM/MWh, in the period when this service cannot be purchased through public bidding.
- (2) For the procurement process referred to in paragraph (1) of this article, the ISO BiH is obligated to specify the missing scopes of electricity and the entities to provide energy for covering of losses in the transmission system with related quantities and to apply the prescribed Procedure for regulated process of procurement of this energy, which is all done in accordance with Article 26 paragraph (6) of the Tariff Pricing Methodology for services of electricity transmission, operation of an independent system operator and ancillary services – Second consolidated version (Official Gazette of BiH, 68/21 – hereinafter: the Tariff Methodology).

#### **Article 4** ***(Regulation of Voltage and Reactive Power)***

It is determined that the compensation for operation of generators in the capacitive regime shall amount to zero (0) fening/kvarh.

**Article 5**  
***(Excessive Withdrawal of Reactive Power)***

It is determined that the tariff for excessive withdrawal of reactive power from the transmission network shall amount to zero (0) fening/kvarh.

**Article 6**  
***(Calculation of Deviations from Daily Schedule by Balance Responsible Parties)***

Values of deviations from a daily schedule by balance responsible parties shall be calculated on a 15-minute basis. The Independent System Operator in Bosnia and Herzegovina (ISO BIH) shall calculate deviations in energy and financial terms pursuant to the Market Rules and relevant procedures.

**Article 7**  
***(Calculation and Billing of Ancillary Services and System Service)***

- (1) Pursuant to the Market Rules and relevant procedures, the ISO BIH shall make calculation of ancillary and system services based on which billing and payment of services shall be made.
- (2) The calculation referred to in item (1) of this article shall be submitted to ancillary service providers, suppliers of customers connected to the transmission system, distribution system operators in BIH and SERC. The calculation shall include financial and energy positions of the ISO BIH and market entities.
- (3) With the aim of making an accurate calculation, distribution system operators shall be obligated to provide the ISO BIH with all required data and information in a timely manner.

**Article 8**  
***(Final Provisions)***

This decision shall enter into force on the day of the adoption and it shall be applied as of 1 January 2025.

The operative part of the Decision shall be published in the “Official Gazette of BIH” and the official gazettes of the Entities and the Brčko District of BIH.

***Statement of Rationale***

The Independent System Operator in Bosnia and Herzegovina (hereinafter: the ISO BIH) is one of the regulated entities in the electric power sector with the task to manage the transmission system operation in Bosnia and Herzegovina. The ISO BIH competences and functions have been defined by the Law on Transmission of Electric Power, Regulator and System Operator in Bosnia and Herzegovina (Official Gazette of BIH, 7/02, 13/03, 76/09 and 1/11) and the Law Establishing an Independent System Operator for the Transmission System of Bosnia and Herzegovina (Official Gazette of BIH, 35/04).

The ISO BIH is a holder of the licence for performance of the activity of an independent system operator pursuant to the Decision of the State Electricity Regulatory Commission (hereinafter: SERC), number 05-28-12-17-19/19 of 27 June 2019 (Official Gazette of BIH, 45/19).

According to Article 32 of the Tariff Methodology, the tariff for system service and ancillary services serves to cover costs of procuring frequency containment reserve, automatic frequency restoration reserve, manual frequency restoration reserve, replacement reserve, and the costs of

procuring electricity to cover losses in the transmission system and other costs pertaining to the system service.

Costs of providing the system service are determined on the basis of data included in the tariff application of the ISO BIH. When determining tariffs, SERC may also use additional data if it deems necessary.

While reviewing the tariff application through tariff proceedings, the basic principles prescribing that tariffs should be just and reasonable, non-discriminatory, based on objective criteria and justified costs and set in a transparent manner have to be respected to the maximum extent possible. An applicant seeking approval of a tariff is obligated to prove that the proposed tariff meets all the requirements of BIH laws and SERC rules and regulations.

The tariff proceedings for setting of the tariff for operation of an independent system operator and the tariffs for system service and ancillary services were initiated at the request of the ISO BIH, number 29/24 of 30 October 2024 (received on 31 October 2024 under number 04-28-5-358-2/24).

In the filed tariff application, the ISO BIH stated that according to the projected withdrawal of electricity from the transmission network in 2025 as well as the revenue requirement, the proposed tariff for system service in 2025 amounts to 0.8867 fening/kWh. While calculating this tariff, the ISO BIH did not take into account the amount accumulated on the basis of the balance of all services in the whole period of the use of the balancing mechanism.

The application also includes the planned physical scope of services in the transmission network in 2025, which relies on the data from the Power Balance in the BIH Transmission Network for 2025 according to which the planned delivery of electricity from the transmission system in 2025 amounts to 10,365,919,226 kWh, while planned generation of the power plants connected to the transmission network amounts to 15,496,896,706 kWh.

Following the documentation review, the completeness of the ISO BIH application was confirmed by the SERC Conclusion on initiating tariff proceedings for the operation of an independent system operator and tariffs for system service and ancillary services number 04-28-5-358-3/24 of 6 November 2024, of which the ISO BIH was informed accordingly by the letter number 04-28-5-358-4/24 of 6 November 2024, so it was possible to proceed with the tariff proceedings through evaluation of all submitted proofs with SERC keeping the right to ask for additional data and information if deemed necessary.

The ISO BIH application was resolved by conducting a formal public hearing pursuant to the Rules of Hearing Procedures (Official Gazette of BIH, 38/05), in accordance with the provision in Article 45 thereof, by a short notice in the daily newspapers and on its website SERC informed the public of a summary of the submitted application and the possibility to get familiarised with the application directly and submit comments on the subject of the tariff proceedings in writing, while the entire documentation of the tariff application was published on the SERC website. By the public notice the persons interested to participate in the formal hearing as interveners were also invited and asked to provide the evidence of their interest in writing beforehand, and the formal hearing on the application was announced.

After the submission of requests for intervener status, by its Conclusion number 04-28-5-358-14/24 of 20 November 2024, in order to hear their respective positions and interests SERC granted the status of interveners in the tariff proceedings to the following entities: MH “Elektroprivreda Republike Srpske” Parent Company a.d. Trebinje, JP “Elektroprivreda Bosne i Hercegovine” d.d. Sarajevo, JP “Elektroprivreda Hrvatske zajednice Herceg Bosne” d.d. Mostar and “Metalleghe Silicon” d.o.o. Mrkonjić Grad.

None of the mentioned interveners used the right to have a direct insight into the complete documentation of the tariff application at the SERC premises.

A preliminary hearing on the submitted ISO BIH tariff application was held on 26 November 2024. At the preliminary hearing a list of questions to be discussed at the hearing was specified and the course of the formal hearing was defined. At the formal public hearing, which was held on 3 December 2024, the parties to the proceeding presented their respective proofs for the purpose of determining all relevant facts. Every question was processed by dividing the questions into thematic groups and by a successive reply of the applicant and comments thereon by the interveners and the Presiding Officer.

The Presiding Officer's report describes the course of the proceeding, offered proofs and established facts, relevant legal provisions and recommendations to the Commissioners (hereinafter: the Commission) and it was delivered to the applicant and the interveners whose status as such was legally acknowledged by SERC. An analysis of costs and revenues as presented in the Presiding Officer's Report confirmed, rejected or adjusted the individual items, values or methods used while preparing the tariff proposal in accordance with the SERC discretionary rights in the tariff proceedings.

The Commission concludes that the Presiding Officer's Report provided reasonable grounds for the Commission to pass its final decision on the tariffs for system and ancillary services based on the data provided, arguments and explanations as well as the comments of the ISO BIH made on the proposal of this report after the careful consideration and evaluation thereof. Regarding the subject-matter of this decision, JP "Elektroprivreda Bosne i Hercegovine", d.d. Sarajevo in the capacity of intervener provided comments on the Presiding Officer's Report in which they expressed the position on the prudence of keeping the tariff for system service at the existing level and the awareness of the high level of prices on the regional market in the context of the costs of procuring electricity to cover losses in the transmission system. Furthermore, they expressed the position that they contribute to keeping the tariff for system service at the existing level by paying the imbalances at the prices which are close to the market-based ones, just as other public suppliers. The ISO BIH did not express any position on the tariff for system service in its comments.

When passing a Decision on tariffs for system and ancillary services, the Commission has to focus its analysis on all elements of the cost structure as pointed out by the applicant, the analysis of costs and revenues as presented in the Presiding Officer's Report as well as on the applicant's and interveners' comments presented during the whole proceedings and pass a decision about the submitted application after a comprehensive analysis. In line with these obligations, the Commission presents the following points of view:

The results of annual procurement of ancillary services for 2025 indicate that the prices of reserve capacities for all types of services have increased, compared to those in the past year, by 5.7%.

Frequency containment reserve (FCR) was procured in the required amount of 14 MW/h for all twelve months in 2025. The average price reached 7.57 BAM/MW/h, which is a 7.4% increase in comparison the average procurement price in 2024.

Automatic frequency restoration reserve (aFRR) was procured at the prices which were slightly higher than the prices reached in the previous annual procurement of this service. During the procurement, the price reached for the off-peak period (00-06 h) amounted to 42.95 BAM/MW/h (42.89 BAM/MW/h in 2024) and was very close to the price cap of 43 BAM/MW/h, while an average price for the peak period (06-24 h) amounted to 41.13 BAM/MW/h (38.81 BAM/MW/h in 2024). The aFRR for the peak period was procured

for all hours of the year in the required quantities, except the quantity of 4 MW/h for the month of September. In the off-peak period, the annual procurement of the required quantities was not fully done due to lack of bids for the 1<sup>st</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> month, so the missing quantities (16% of the required annual scope in total is missing) will be the subject of the monthly procurements in 2025.

Manual frequency restoration reserve (mFRR) was procured at the price which is higher for upward reserve and lower for downward reserve in comparison to the previous annual procurement of this service. An average price for upward reserve increased by 9.4% (from 4.99 BAM/MW/h to 5.46 BAM/MW/h) and decreased for downward reserve by 25.7% (from 1.40 BAM/MW/h to 1.04 BAM/MW/h). The required quantities of 196 MW/h of upward manual frequency restoration reserve were procured for all months. Downward mFRR was not procured for the whole annual period in the required physical scope of 68 MW/h, so the missing quantities of 22 MW/h will be the subject of the monthly procurements for the 9<sup>th</sup> and 10<sup>th</sup> month.

The procurement of energy for covering of losses in the transmission system in 2025 was planned in an amount of 330 GWh. Due to the price instability on the wholesale regional market in the fourth quarter of 2024, the ISO BIH did not organise annual bidding for covering of losses in the transmission system in 2025, but did it only for the first four months of 2025. However, in an open procedure of public procurement no offers were received, and according to the information submitted by the ISO BIH on 17 December 2024, the next market-based procedure will be organised for the procurement of energy for March and April. Under such circumstances the purchasing of energy for covering of losses in the transmission system in a regulated manner will be used for the months of January and February 2025, which means that the ISO BIH acts in accordance of the provisions of the document titled “Procedure for regulated procurement of electricity to cover transmission system losses” with the price of electricity for losses being set at the level of the weighted average prices of the accepted bids in 2024 amounting to 198.77 BAM/MWh (101.62 €/MWh). Furthermore, the ISO BIH is planning to organise afterwards the market-based procedure for the procurement of energy for the months of March and April 2025. Taking into consideration that the annual index of HUDEX Futures 2025 ranges within the scope of 105-110 €/MWh, it is likely to have the market-based procurement at the approximate price of 215 BAM/MWh which was used to calculate the total costs of energy procurement for covering of losses in the transmission system in the period 3<sup>th</sup>-9<sup>th</sup> month 2025.

The planned costs of ancillary services procurement in 2025 in the required scope for all services amount to BAM 95,922,902 in total. The breakdown of the procurement costs per service and month is presented in the following table (BAM):

Month	Frequency containment reserve	Automatic frequency restoration reserve during peak and off-peak periods	Upward manual frequency restoration reserve	Downward manual frequency restoration reserve	Electricity losses in the transmission system*
January	78,797	1,503,884	667,145	48,896	6,956,950
February	71,172	1,235,862	602,582	44,164	5,764,330
March	78,691	1,295,100	666,248	48,830	6,450,000
April	76,255	1,193,148	645,624	47,318	5,590,000
May	78,797	1,092,583	673,469	48,896	5,160,000
June	76,255	1,105,632	965,290	47,318	5,160,000
July	78,797	1,316,080	1,024,607	48,896	5,805,000

August	78,797	1,284,088	1,024,607	48,896	5,375,000
September	76,255	1,144,278	1,031,544	69,401	4,945,000
October	78,903	1,196,609	757,665	71,811	5,375,000
November	76,255	1,316,311	645,624	47,318	6,020,000
December	78,797	1,408,087	667,145	48,896	7,310,000
<b>Total</b>	<b>927,772</b>	<b>15,091,662</b>	<b>9,371,550</b>	<b>620,639</b>	<b>69,911,280</b>

\* The cost of procuring electricity to cover losses in the transmission system for January and February were calculated at the price of 198.77 BAM/MWh and at the price of 215 BAM/MWh for other months.

The tariff calculation is based on the bids and results of the completed bidding procedures of the ISO BIH for 2025, an assessment for procurements to be conducted later during 2025 as well as the trends of income and costs in the period January 2016 – December 2024, which is presented through the balance of services in the following table:

1.	Frequency containment reserve (BAM)	927,772
2.	Automatic frequency restoration reserve (BAM)	15,091,662
3.	Upward manual frequency restoration reserve (BAM)	9,371,550
4.	Downward manual frequency restoration reserve (BAM)	620,639
5.	Total amount of frequency containment and restoration reserves in 2025 (BAM) 1. to 4.	26,011,622
6.	Total amount for energy for transmission losses in 2025 (BAM)	69,911,280
7.	Total planned costs in 2024 (BAM) 5.+6.	95,922,902
8.	Balance of services in 2016 (BAM)	9,532,806
9.	Balance of services in 2017 (BAM)	4,716,024
10.	Balance of services in 2018 (BAM)	-9,964,041
11.	Balance of services in 2019 (BAM)	-774,077
12.	Balance of services in 2020 (BAM)	6,912,629
13.	Balance of services in 2021 (BAM)	7,867,228
14.	Balance of services in 2022 (BAM)	25,645,915
15.	Balance of services in 2023 (BAM)	16,217,609
16.	Correction of values for uncollected receivables in 2020	-3,166,714
17.	Correction of values for uncollected receivables in 2021	-2,984,173
18.	Balance of services in 2024 with an estimate for December (BAM)	-4,500,000
19.	Balance of services in the previous period (BAM) 8. to 17.	49,503,206
20.	Income based on balance of imbalances, balancing energy and FSKAR calculation (BAM)	15,000,000

According to the data in the table above, it is possible to make a correction of the tariff for system service. However, taking into consideration that there is possibility of procuring energy for covering of losses in the transmission system in a market-based manner in the forthcoming period at the prices which may be higher compared to the prices at which energy was procured in the past, that an amount of approximately one (1) million BAM is continuously dislocated to the account of the Indirect Taxation Authority of BIH due to legal obligations, that the amounts on monthly invoices per calculation of deviations towards the SHB LFC Block are measured in millions of BAM (FSKAR calculation), respecting the precautionary principle due to a high number of variables affecting the revenues and expenditure in the balancing mechanism, the tariff for system service is kept at the level of 0.4789 fening/kWh.

As revenues and expenditures depend on a high number of factors such as electricity consumption, that is, withdrawal of electricity from the transmission system, a physical scope of losses in the transmission system, a wholesale price of energy for losses, the scope of provided ancillary services in comparison to the planned one, the price of control energy and engagement thereof, prices and scopes of imbalances, the application of the tariff will be

monitored continuously as well as the trends of revenues and expenditures and developments on the balancing market, and an adjustment of the tariff for system service will be initiated when appropriate.

Under Article 33 of the Tariff Pricing Methodology, generating units connected to the transmission network maintain the voltage within prescribed limits at their own expense in accordance with the Grid Code and their operational charts and, exceptionally, in a situation with increased voltage levels in the transmission system, SERC may prescribe a compensation to be paid to generating units for operation in the capacitive (under-excited) regime providing that the ISO BIH carries out an analysis indicating that such regime of operation of generating units substantially contributes to keeping the voltage levels at 400 kV and 220 kV nodes within the limits prescribed by the Grid Code. Due to lack of this analysis, it is determined that the coefficient of compensation for operation of generating units in the capacitive regime amounts to zero ( $k_{RG} = 0$ ), which means that compensation for operation of generating units in the capacitive regime also equals zero.

Taking into account that the problem of reactive power surplus causes high voltage in the transmission system, in the 220 kV and 400 kV networks in particular, and given that the required investments in the relevant infrastructure have not been made (shunt reactors) in the past period, which would resolve the issue of the existing surplus of reactive capacity and power in the transmission system, the Commission is of the opinion that it is not justified to charge excessive withdrawal of reactive power. The price coefficient for excessive withdrawal of reactive energy from the transmission system is set to zero ( $k_R = 0$ ) as in a situation with increased voltage levels in the transmission system and the existing surplus of reactive power and capacity, withdrawal of reactive energy from the transmission system has a positive impact on the voltage levels and in this manner withdrawal of reactive energy is further stimulated. In line with the aforesaid, the price for excessive withdrawal of reactive energy from the transmission system is set to zero (0) fening/kvarh.

Taking into consideration the fact that the balancing market in Bosnia and Herzegovina is one of few functional markets in the region of Southeast Europe and that the trends on the regional wholesale market have the significant impact on its operation and prices of services, SERC will continuously monitor the implementation of this decision and make adjustments of the tariff for system service if needed.

Pursuant to Article 14 of the Rule on Tariff Proceedings, the applicant as a regulated entity is obligated to enable public access to the officially approved tariff by making tariffs approved by a decision accessible to the public at its main business office during working days and publishing them on its website.

Pursuant to Article 9.2. of the Law on Transmission of Electric Power, Regulator and System Operator of Bosnia and Herzegovina, proceedings may be initiated before the Court of Bosnia and Herzegovina against this decision by filing a lawsuit within sixty (60) days of receipt thereof.

Number: 04-28-5-358-33/24  
26 December 2024  
Tuzla

Chairwoman of the Commission  
Branislava Milekić