

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 46/21 of 26 October 2021, at the session held on 22 December 2021, the State Electricity Regulatory Commission passed a

DECISION

ON TARIFFS FOR SYSTEM AND ANCILLARY SERVICES

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

This Decision defines a tariff for system service, cost 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 2022 shall be set to the amount of BAM 60,054,723 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 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 109.94 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, define the manner of energy and financial calculation as well as other details in the form of a suitable procedure, 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 and System Services)

- (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 2022.

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 independent system operator activity 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).

Pursuant to Article 26 of the Tariff Methodology, the purpose of the tariff for system and ancillary services is to cover the costs of procurement of ancillary services.

Costs of providing the system services 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 for a tariff application 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 and ancillary services were initiated at the request of the ISO BIH, number 46/21 of 26 October 2021 (received on 28 October 2021 under number 04-28-5-286-1/21).

In the filed tariff application, the ISO BIH stated that according to the projected withdrawal of electricity from the transmission network in 2022 as well as the revenue requirement, the proposed tariff for system service in 2022 amounts to 1.1075 fening/kWh.

The application also includes the planned physical scope of services in the transmission network in 2022, which relies on the data from the Power Balance in the BIH Transmission Network for 2022 (received by SERC on 25 October 2021 under number 04-28-5-210-23/21) according to which the planned delivery of electricity from the transmission system in 2022 amounts to 10,671,856,721 kWh while planned generation in the transmission network amounts to 14,904,293,537 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 and ancillary services number 04-28-5-286-5/21 of 9 November 2021, of which the ISO BIH was informed accordingly by the letter number 04-28-5-286-6/20 of 9 November 2021 so the tariff proceedings could proceed 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 04-28-5-286-13/21 of 17 November 2021, in order to hear their respective positions and interests SERC allowed the following entities to participate in the tariff proceedings in the capacity of interveners: MH "Elektroprivreda Republike Srpske" Parent Company a.d. Trebinje, JP "Elektroprivreda Bosne i Hercegovine" d.d. Sarajevo, JP "Elektroprivreda Hrvatske zajednice Hercege Bosne" d.d. Mostar, "R-S Silicon" d.o.o. Mrkonjić Grad and "B.S.I." d.o.o. Jajce.

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 23 November 2021 via an internet communication platform due to the Covid-19 pandemic. 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 also held via an internet communication platform on 30 November 2021, 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 tariff for operation of an independent system operator based on the data provided, arguments and explanations as well as comments of the ISO BIH made on the proposal of this Report. 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 which, in a nutshell, assess the Report as fully objective and support the solutions proposed therein.

In its comments provided on the Presiding Officer's Report, the ISO BIH points out that the balance of services in the mechanism for the BIH power system balancing for the period from January to October 2021 does not include the expenditure on the basis of financial settlement for unplanned deviations of the BIH LFC area (FSkar methodology) for the months of August, September and October 2021, which according to the preliminary results available to the ISO BIH, amounts to 4.5 million BAM. Furthermore, it was concluded that the prices on the power exchanges remain very high while in the BIH power system the hours with a shortage of electricity continue to be dominant, which are the reasons to continue the trend of expenditures based on the FSkar methodology until the end of 2021.

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 ancillary services procurement for 2022 indicate that the price of the automatic frequency restoration reserve remained at approximately the same level as the prices of its procurement in 2021, while an average price of the manual frequency restoration reserve increased by 67.7% (from 2.90 BAM/MW/h to 4.86 BAM/MW/h) and 9.1% (from 1.47 BAM/MW/h to 1.60 BAM/MW/h) for the upward and downward manual frequency restoration reserve respectively. All required volumes of the upward and downward manual frequency restoration reserve were procured for all 12 months. Furthermore, all required volumes of the automatic frequency restoration reserve were procured, except for July, August and September during off-peak periods.

The results of procurement of energy for covering of losses in the transmission system indicated an extremely high increase in price which considerably surpassed the price set by the ISO BIH in the public procurement procedure. Accepting the offered price would have caused an approximately five times higher tariff for system service, which in turn would cause a tariff shock for the end customers. Under such circumstances a reasonable approach is to set the price of energy for covering of losses in the transmission system at the level of the last accepted bid (the public procurement procedure for 2021 from December 2020) when the weighted average price amounted to 109.94 BAM/MWh. It should be noted that this price is higher than the generation costs in Bosnia and Herzegovina which range from 30 to 105 BAM/MWh, depending on producers and types of generation technology, and that the increase in energy product prices in Europe does not affect the generation costs in BIH significantly as they do not depend either on the global price trends of crude oil, natural gas and imported coal or a rise in the price of greenhouse gas emission allowances as the BIH producers do not pay for the emission allowances.

Regarding the method of procuring energy for covering of losses in the transmission system, pursuant to Article 26 paragraph (6) of the Tariff Methodology, in case of impossibility to procure ancillary services through public bidding, the ISO BIH will procure the missing share of ancillary services in a regulated manner. In this context, the ISO BIH is obligated to define the method of procurement, the entities to provide the service and other necessary details as prescribed in Article 3 paragraph (2) of this Decision. Furthermore, in the forthcoming period the ISO BIH is obligated to procure energy for covering of losses in the transmission system in a market-based manner using the possibilities and options as defined in the Market Rule and the Tariff Methodology.

The planned costs of ancillary services procurement in 2022 amount to BAM 60,054,723.48 in total. The breakdown of these procurement costs per service and month is presented in the following table (BAM):

| Month | 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 | 1,240,895 | 391,337 | 80,084 | 3,847,900 |
| February | 1,115,678 | 353,667 | 71,931 | 3,298,200 |
| March | 1,155,638 | 391,033 | 80,422 | 3,298,200 |
| April | 1,071,491 | 378,821 | 77,717 | 2,858,440 |
| May | 971,180 | 529,654 | 83,774 | 2,638,560 |
| June | 1,032,341 | 977,494 | 81,288 | 2,638,560 |
| July | 1,126,092 | 1,180,170 | 81,072 | 3,078,320 |
| August | 1,084,175 | 1,180,170 | 81,072 | 3,078,320 |
| September | 979,468 | 1,246,968 | 81,397 | 2,858,440 |
| October | 1,042,686 | 813,488 | 80,856 | 2,968,380 |
| November | 1,124,689 | 499,522 | 77,717 | 3,188,260 |
| December | 1,219,888 | 393,866 | 77,501 | 3,847,900 |
| Total | 13,164,224 | 8,336,189 | 954,831 | 37,599,480 |

The table above does not include the costs of the frequency containment reserve (primary control) so it should be noted that there is a possibility of incurring these costs when the ISO BH decides to procure this service in the manner allowed in Article 27 of the Tariff Methodology.

The tariff calculation is based on the bids and results of the completed bidding procedures of the ISO BIH for 2022 as well as the trends of income and costs in the period January 2016–December 2021, which is presented through the balance of services in the following table:

| | | |
|----|--|----------------|
| 1 | Automatic frequency restoration reserve (BAM) | 13,164,224 |
| 2 | Upward manual frequency restoration reserve (BAM) | 8,336,189 |
| 3 | Downward manual frequency restoration reserve (BAM) | 954,831 |
| 4 | Total amount for automatic and manual frequency restoration reserve in 2022 (BAM) 1.+2.+3. | 22,455,243 |
| 5 | Total amount for energy for transmission losses in 2022 (BAM) | 37,599,480 |
| 6 | Total planned costs for 2022 (BAM) 4.+5. | 60,054,723 |
| 7 | Balance of services in 2016 (BAM) | 9,532,806 |
| 8 | Balance of services in 2017 (BAM) | 4,716,024 |
| 9 | Balance of services in 2018 (BAM) | -9,964,041 |
| 10 | Balance of services in 2019 (BAM) | -774,077 |
| 11 | Balance of services in 2020 (BAM) | 6,912,629 |
| 12 | Correction of values for uncollected receivables in 2020 | -3,166,714 |
| 13 | Balance of services in 2021 with an estimate for December 2021 (BAM) | 11,500,000 |
| 14 | Balance of services in the previous period (BAM) 7.+8.+9.+10.+11.+12.+13. | 18,756,627 |
| 15 | Income based on balance of imbalances and balancing energy (BAM) | 12,000,000 |
| 16 | Total for calculation of tariff for system service (BAM) 6.-14.-15. | 29,298,096 |
| 17 | Energy (kWh) | 10,671,856,721 |
| 18 | Tariff for system service (fening/kWh) | 0.2745 |

According to the calculation in the table above, by the application of the tariff for system service amounting to 0.2745 fening/kWh the accumulated surplus of revenues over expenditure would be brought to zero (0) BAM by the end of 2022. Taking into consideration that the funds on the ancillary services account are reduced by three million BAM due to unpaid debts of the legal person “LE Trading BH” d.o.o. Banja Luka, that an amount of approximately one 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), that there is possibility of procuring energy for covering of losses in the transmission system in a market-based manner in the forthcoming period, 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 amount 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 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 ($k_{RG} = 0$).

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 that this problem has become even more evident due to a significant reduction of electricity withdrawal by the customer Aluminij d.d. Mostar, 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 rare 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 tariffs 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: 04-28-5-286-36/21
22 December 2021
Tuzla

Chairwoman
Branislava Milekić