METHODOLOGY FOR CALCULATING THE ELECTRICITY TRANSMISSION TARIFFS

Article 1
Legal Basis

This methodology is drafted implementing articles 7, 19, 20, 21, 22, 35, 45, 46, 53, 54, 56, 60, 62, 65, 66 of Law no. 43/2015 "On Power Sector", Council of Minister Decision no. 519 of date 13.07.2016 "On approving the electricity market model" articles 21 and 22 of the "Regulation on ERE Organization, Operation and Procedures" approved with ERE Board decision No. 96 of date 17.06.2016 (temporary) Market Rules, the Metering Code, Transmission Code as well as by-laws approved by ERE.

Article 2
Purpose

The purpose of this methodology is to set principles, conditions and procedures for the tariff of using the transmission network based on the principles of calculating these tariffs accessing the data for a fair tariff.

Article 3
Objective

The objective of this methodology is to set the tariffs for using the transmission system implementing Law 43/2015 "On Power Sector".

Article 4

Definitions

The terms used in this methodology shall have the same meaning as the one defined on article 3 and as follows Law No.43/2015 "On Power Sector", as well as other by-laws approved by ERE. The other terms used in this methodology have the following meanings:

1. **Annual adjustment factor** – a percentage equal to the inflation factor minus the efficiency improvement factor.
2. **Average transmission tariff** – average revenue per kWh reflected in transmission system customer invoices over a 12- month period, calculated as the total revenue from capacity-related charges, energy-related charges and fixed monthly charges divided by the total kWh delivered by the transmission system to distribution companies and other electricity transmission system users located in Albania.
3. **Average transmission tariff ceiling** – the maximum allowable level of the average transmission tariff for a specific 12-month period.
4. **Base tariffs** – value of the transmission service tariff set according to costs in the base year.
5. **Base year** – the first year of a regulatory period
6. **Test year** – a 12-month period prior to the regulatory period, which is used as a basis for defining the required revenues for the base year for the transmission system operator.
7. **Differentiated tariffs –** shall mean the tariffs for the customer services of the transmission network users that include charges related to fix monthly charges and the charges for reactive power connected in the respective voltage levels.
8. **Efficiency improvement factor (X factor)** – the annual percentage reduction in the cost of transmission service resulting from improvements in production efficiency and improvements in technology.

9. **Regulated asset base (RAB)** – The value of fixed assets that are owned by the TSO used to provide service to transmission customers and to fulfill TSO obligation to ensure the reliability and security of the electricity system. The regulated asset base does not include financial investments, securities, accounts receivable, or cash.
10. **Regulatory period** – the period on which the new tariffs become effective and are regulated according to the decision taken by Energy Regulator Authority, after a complete and detailed review of the tariff application submitted by the transmission system operator.
11. **Distribution system** – the Distribution System shall mean the system of lines, supporting structures, transforming and switching equipment, used for electricity distribution and its delivery to the customers, excluding the supply.
12. **Electricity consumption for technological purposes** – reactor power consumption, synchronous compensator consumption, condenser battery consumption and energy that is consumed by the TSO for its own use and taken directly from transformer substations and facilities owned by the transmission system. Network losses are excluded. Energy consumed by generating stations is excluded.
13. **Electricity meter** – a mechanism for measuring the flow of active and reactive power and energy through the transmission network, or measuring the flow of active and reactive power and energy across international borders, or measuring the active power and energy delivered to transmission system customers.
14. **Customer –** shall mean the wholesale or end-use customer for electricity
15. **End-use customers** – shall mean a customer that purchases electricity for personal use.
16. **Energy Regulator Authority** – shall mean the regulatory institution for electricity and natural gas sectors, which operates according to Law No. 43/2015 “On Power Sector” and Law No.102/2015 "On Natural Gas Sector".
17. **Transmission code** – Transmission System Code means a set of technical rules that regulate transmission system operation, and establish the conditions and terms of the service provided by the Transmission System Operator to the transmission system users, in conformity with ENTSO-e rules.

18. **Network losses** – The difference between the amounts of electricity delivered to the electricity network and the amount of electricity withdrawn from the electricity network over the respective time period.
19. **Transmission system** – Electricity Transmission System is a system used for electricity transmission in high and very high voltage connected in parallel with the systems of other countries, including above all the connections supporting structures, transforming and switching equipment's to deliver electricity to the customers or in the distribution grid, excluding the supply.
20. **Transmission system operator (OST)** – TSO is a legal person responsible for the operation, maintenance and development of the transmission system including the interconnections with the other cross-border countries, to ensure the long-term lifetime of the system to fulfil the reasonable requirements of electricity transmission.
21. **System users** are natural or legal persons that supply or are supplied with electricity through the transmission or distribution system.

Article 5

General rules and the basic principles

1. This methodology is drafted implementing Law No 43/2015 "On Power Sector", as well as other effective legal acts.

2. All revenue resources of TSO defined on this tariff methodology are paid by the transmission system users.

3. Connection charges for the transmission system users which are not object of the transmission system shall be defined according to the new connections regulations which include the methodology of calculating their costs which are out of this tariff methodology object. The assets finances through connection charges are not included on TSO regulatory asset base and the depreciation of these assets may not be covered by the transmission tariff.

4. The transmission tariff shall recover the costs of the following activities:

   a) Ownership, construction, operation, and maintenance of lines, cables, transformer substations, dispatch centers, and related buildings and communication facilities.

   b) The cost of the TSO ancillary services, including payments executed to neighboring TSOs to obtain emergency electricity and instant reserves, and payments (if any) for frequency and voltage regulation.

   c) Reactive power compensation costs, which should be allocated to a reactive power charge.

   d) Other operational costs related to Market Operation to the legal separation of the MO from the TSO and then the respective monthly payments.

5. The transmission tariff should not be used to liquidate the cost of electricity imports, or capacity charges related with imported energy, or any other costs by suppliers and the users under bilateral agreements. The transmission tariff shall cover the electricity purchase costs to cover the electricity losses in the transmission system and to ensure the balancing ancillary services procured in the market.
6. "Price cap" regulation is applied for the average revenues permitted of the electricity transmission service. The regulator approves the average transmission tariff. If the average transmission tariff ceiling for any voltage level defined according to the historic data for one of the years in the tariff review cycle exceeds the average permitted transmission tariff ceiling set by ERE for each voltage level, TSO shall reduce the average transmission tariff in the next year for that voltage level so that the customer and the transmission system users in a defined voltage level receive a refund of the amount of excess revenues collected (over-repayment amount).

7. The "RPI-X" method is used to give TSO promotion to reduce its costs during the tariff review cycle. The duration of the transmission tariff review cycle is three years. If the transmission tariffs for the next tariff review cycle have not been approved before the end of the three year period, the regulator may adopt a decision to extend the tariff review cycle to four years.

8. Tariff setting involves two interrelated activities: setting the economically justified average tariff ceiling for the base year of the tariff review cycle and setting the average transmission tariff ceiling for the 2 and 3 years of the tariff review cycle.

9. The distribution tariff review cycle and the transmission tariff review cycle shall begin on the same date (for example, 1 January or 1 July).

10. Long-term debt financing shall be used to finance new capital expenses, to the extent possible, but shall not be used to cover operating costs.

11. The application in addition to the justifying necessary information and documentation to calculate the average tariff ceiling of the regulated transmission services shall contain a complete information on the technical, economic and financial indicators as well the revenues and expenses accounts for all the companies

12. The regulated company shall clearly and undoubtedly report the costs for any regulated service including only the assets and the activities connected with the regulated services. The cost allocation method shall be clear and understandable.

13. The tariffs shall reflect the current service costs for/any user of the transmission system and shall give signals to efficient use of the transmission network.

14. The costs included in the tariff shall be transparent for the interested parties.

15. The tariff shall permit TSO the opportunity for a reasonable return over the regulated asset base.
16. The tariffs shall be reasonably sustainable on time.

17. The tariffs shall correspond to costs that shall be established by a well- managed transmission company which tries to make prudent investments, minimize network losses, and avoid wasteful expenses. When setting the base tariff the regulator has the right to investigate the cost levels reported by the TSO, and benchmark its unit costs against other TSOs.

18. In preparing a tariff application the OST shall try to present all costs with precision up to 100,000 ALL. The regulator shall not question amounts less than 100,000 ALL unless there is a dispute about compensation or payment to specific physical persons.

19. The failure to comply with each part of this methodology may lead to the refusal by ERE of the tariff application for the distribution company.

20. The first regulatory period according to this methodology begins on January 2018.

21. ERE shall approve the table forms for the tariff application. TSO shall use this table forms approved by ERE to prepare the tariff application for a regulatory period. The table form may be modified as long as the information is organized in a similar way and the detail of the information is not less than the approved one for the standards tables. The tables shall show the results of the testing year, the regulations made for the testing year and for the base year, including not only the expenses of the company, capital expenses and the regulated basis of the assets for the regulated service.

Article 6

Electricity and electricity balance sheet

1. The electricity balance of the TSO company for the base year shall be prepared by calculating the total sum of energy in GWh delivered from the transmission network during the base year. This total is equal with the energy received from the Albanian generating plants that deliver energy to the transmission system plus the net energy received from the transmission networks of the neighboring countries. The total received energy shall be allocated into:

    a) electricity delivered from the Albanian distribution networks
    b) electricity delivered to the users connected in the transmission system
    c) electricity losses in the transmission system
    d) electricity consumption by TSO for technological purposes
    e) net electricity issued to the neighboring countries transmission network

2. The coincident peak load flow balance of the TSO shall be prepared by calculating the total electricity in MW received by the transmission network in the peak hour. This total is equal with the electricity received from Albanian generating plants connected to the transmission network plus the net electricity received from the transmission networks of neighboring countries. Total received electricity shall be allocated to:

    a) electricity delivered from the Albanian distribution networks
    b) electricity delivered to the users connected in the transmission system
    c) electricity losses in the transmission network
    d) electricity consumption from TSO for technological purposes.
    e) net electricity issued to the neighboring countries transmission networks

3. For each of the last ten years, the electricity losses in the transmission network shall be shown as a percentage of electricity received from the transmission network.

3. The electricity consumed by TSO facilities at low or medium voltage and delivered through the distribution network should be included in the total amount of electricity delivered to the distribution network. TSO may purchase electricity at low or medium voltage according to the tariff for budget institutions.

Article 7

Revenue requirement for the Base Year

1. The test year expenses for setting the costs for the base year are according to the accounting information in conformity with the Uniform Accounts System approved by ERE or National Accounting Standards. The testing year shall be a representative 12 months historical period of the company operating costs. ERE during the review of the tariff application has the right to contract independent experts for performing a control of the accounting information for the TSO test year.

2. TSO may propose changes of the expenses results for the testing year to set the tariff for the base year of the next regulatory period. Any such change may be known (as a special article) and measurable (quantifiable). The planned funds to cover the costs of uncertain/unforeseen events shall not be approved by ERE.

   ERE shall consider the regulations in the test year such as:

   1. change of the request;
   2. inflation;
   3. changes in the contracted price;
   4. changes in taxes and insurances;
   5. increase of the regulated asset base level;
   6. cost of the capital;
   7. the level of the depreciation expenses; and,
   8. efficiency factor.
   9. other incomes

3. TSO shall provide justifications for each foreseen adjustment/correction to the test year results. These adjustments shall be specified on the table submitted by TSO in the application for tariff, as well as the written evidences providing the justifications and the level of each adjustment/correction.

4. The requirements for the base year revenues shall be calculated as follows:

C = C capital + C operating

4.1. VAT is not included in the formula shown above because it is calculated by the TSO for each transmission system customer monthly invoice for transmission service, and shown as a separate item in the monthly invoice.

4.2. Capital costs equal the return on capital, plus depreciation.

C capital = R + D

C $_{\textbf{capital}}$ – capital-related component of the target revenue for the base year

R- return on the regulated asset base

D – depreciation of the fix assets and the depreciation of the other assets

4.2.1. The return on the regulated asset base shall be calculated according to the formula:

R = B * WACC

B- Regulated Asset Base at the beginning of the base year of the tariff review cycle

WACC - the permitted rate of return of the Regulated Asset Base.

4.2.2. The value of the regulated asset base shall be equal with the historic cost of the fix assets used to ensure the transmission service, minus the depreciation, minus an adjustment for the economic obsolesce.

4.2.3. Land and rights-of-way used by the DSO may be accessed at original purchase cost.

4.2.4. The depreciation of different categories of assets shall be based on the expected operating life of these assets. If financial data have been distorted by the use of unreasonably high numbers for depreciation lifetimes, than TSO submits a study for the asset depreciation which shall present the asset lifetime for each category.

4.2.5. None of the TSO assets shall be considered as the "stranded" asset (with a registered value higher than the market value).

4.2.6. Only investments at prudent levels approved by ERE may be included in the regulatory asset base. TSO shall submit at ERE in the written form the program to allocate the proposed investments for the regulatory period in conformity with the Regulation on the procedures of submitting and approving the investment plan.

4.2.7. ERE shall review the realized investments to the planned/approved ones by the end of each year and shall correct the tariffs if TSO fails to implement the investment plan.

4.3. The permitted rate of return on the Regulated Asset Base is calculated from a

permitted rate of return on equity in the base year, a calculated average interest rate on long-term debt during the base year, and a debt/equity ratio. All three of these values must be given in the tariff decision issued by the regulatory authority so that the assumptions used to calculate the permitted rate of return shall be clearly shown. The permitted rate of return on the Regulated Asset Base is the weighted average of the capital cost before the taxes calculated as follows:

$$\mathbf{WACC = [ES * ARoE/ (1-T)] + (DS * CoD)}$$

$$\mathbf{ES + DS = 1}$$

where:

ES - The target for its capital in the Regulatory Asset Base (RAB)

T - Corporate Tax Rate

ARoE - Permitted rate of return over capital after tax

DS - Target for debt ration of the RAB

CoD - Cost of debt

4.4. The allowable rate of return on the capital shall be set by the regulator on the basis of the TSO need to obtain cash flow for capital expenses and the service of debt judged from the statement of the sources and uses of funds in the base year. All profits shall be used to support the TSO capital expenses program and increase the accounted value of the capital.

4.5. If TSO may demonstrate that there is an urgent need for specific capital expenses and that debt financing for these assets or the money flow is not necessary to serve to reasonable/justified debts, ERE may decide to set a high permitted rate of return on the capital and enable TSO to generate the additional cash flow needed.

4.6. The weighted average interest rate on long-term debt should be determined as either (a) the sum of interest payments on long-term debt during the base year, divided by the

total principal on long-term debt (the total amount borrowed) at the beginning of the base year or (b) the sum of interest payments on long-term debt during the 3-year tariff review cycle, divided by the sum of the amount borrowed at the beginning of the base year, the amount borrowed beginning of year 2, and the amount borrowed at the beginning of year 3. TSO shall show that the interest rates for the debt are in conformity with the commercial interest rate for the debt accepted by similar other risk credit companies. The debt included in the calculation of the average rate of debt interest that has an interest rate higher than the current market level, shall be adjusted to the market level.

4.7. All main components of the transmission system shall be on TSO ownership and not to be leased. The payments associated for leasing (for example, motor vehicle leasing) shall be included in the operational expenses.

5. TSO operating costs shall include:

C operating = C metering + C maintenance + C payment + C losses + C ancillary services + C third party services + C tax

C metering - the cost of measuring electricity and the energy delivered to the transmission system customers and the invoicing cost and liquidation of the accounts with the transmission system users. This category measures customer-related costs, and does not include the cost of measuring electric energy losses, electricity consumption for technological purposes, and export, import, and transit flows. The purpose of measuring **C metering** is to calculate the fixed monthly charge to each transmission system customer based on the number of points at which the customer is connected to the transmission system.

C maintenance - spare parts, supplies, vehicles, fuel and other maintenance costs;

C payment – the payments, social and health insurances and costs (different from taxes) associated with the employee benefit program;

C losses – the costs to cover and procure the electricity losses in the transmission network

In calculating the transmission tariff, the costs for the losses shall be calculated based on the market prices:

C losses = E losses * P h

E losses - Electricity losses in the transmission network during the base year

Ph- is the electricity average price that shall be purchased in the market to cover the losses during the base year.

C ancillary services - a payment for the ancillary services purchase necessary for the system operation.

TSO shall submit an assessment regarding the expenses for the ancillary services during the base year. This assessment shall contain justifications regarding the provision of the needs for the ancillary services and the respective prices (implementing article 62 of Law 43/2015)

C tax – shall mean the component that enables the regulator to clearly show the part of tariff attributed to the taxes so it is beyond the authority's control. Revenue tax component targeted for TSO base year shall not include TSO and the profit tax.

Article 8

Allocation of the costs for the capacity, electricity and fix monthly payments

1. Each transmission system customer shall pay a capacity charge, in ALL/kW/Month, based on the customer's peak load during the 12- month period ending with the invoicing month. If the customer has signed an agreement with TSO company in which the customer must pay for a specific amount of capacity guaranteed by the agreement, then the capacity charge is applied to the higher one – the contractually guaranteed capacity, or the customer's peak load during the 12- month period ending with the invoicing month.

2. Each transmission system customer shall pay an energy charge, in ALL/kWh, based on the number of kWh delivered from the transmission system to the transmission system customer during that month.

3. Each transmission system customer shall pay a fixed monthly charge which is intended to cover the metering, invoicing and liquidation costs of the TSO to provide service to that customer during the base year.

4. In a tariff application the TSO shall provide a foresee of:

    a) the total capacity in kW that shall be shown in transmission system customers invoice on each month of the base year, and the sum of these monthly totals

    b) the total energy in kWh that shall be shown in transmission system customers invoice on each month of the base year, and the sum of these monthly totals

    c) the number of delivery points to transmission system customers at the beginning of the base year, and number of delivery points at the end of the base year, and the average of these two figures

5. The total revenue collected through capacity charges in the base year equals:

C capacity = C capital

6. The capacity charge, in ALL per kW per month, equals:

$$P_{capacity} = C_{capacity} / L$$

L - sum of the monthly total capacity shown in transmission system customers invoice, over the 12 months of the base year

7. The total revenue collected through energy charges in the base year equals:

C energy = C operating - C metering

8. The energy charge, in ALL per kWh, equals:

P energy = C energy / E

E - total energy in kWh that shall be shown in transmission system customers invoice during the base year

9. The total revenue to be collected through fixed monthly charges in the base year equals **C metering**.

10. The fixed monthly charge, in ALL per delivery point, equals:

P monthly = C metering / N

N - the average of the number of delivery points to transmission system customers at the beginning of the base year, and the number of delivery points at the end of the base year

Article 9

Calculation of the average transmission tariff

1. In each year of the tariff review cycle, the average transmission tariff equals:

P average = (C capacity + C operating) / E

P average – average transmission tariff

2. The average transmission tariff reflects the cost of ownership, construction, operation, and maintenance of lines, cables, transformer substations, dispatch centers, and related buildings and communication facilities. It does not reflect the cost of all other activities listed on letter "c" and "d" point 4 article 5 and any other cost that is not related with the electricity transmission activity, because those costs shall be liquidated by the OST through additional charges. For example, costs related to reactive power charges are excluded from the average transmission tariff.

3. The average transmission tariff may be calculated for any 12- month period. The monthly data may be a foresee or history or a combination of forecast data for future months and estimated data for recent months.

Article 10

The tariff transmission component of the end use customers

1. In its tariff application the TSO must present an estimate, for each distribution company supplier, an estimate of the total TSO revenues to be collected from that supplier during the base year through capacity charges, energy charges, and metering charges.

2. It is the responsibility of the DSO that performs electricity distribution service for the Universal Service Supplier (FSHU) and any other licensed supplier or other customer to prepare a tariff application in which the total TSO revenue for that distribution company are collected from end use customers in a transparent and non- discriminatory way. The comparable groups of end use customers connected in the distribution system shall pay

the same transmission charges, directly or indirectly.

3. In the tariff methodology the end use customer and in the tariff methodology of using the network the distribution system, the capacity charges for using the distribution system that DSO pays to TSO shall be allocated among groups of customers connected to the distribution system, according to the contribution of each group to the coincident peak load of the distribution company. This calculation shall take into consideration the technical losses at different voltage levels, as well as each customer groups annual load factor and annual peak load in kW.

4. If the TSO energy charge is applied to energy consumption in kWh shown in customer invoices at medium and low voltage, the total revenue shall be less than the amount of energy charges paid by the distribution company to the TSO, which includes the energy charges associated with distribution network losses. If the TSO capacity charge is applied to peak load in kW shown in customer invoice or estimated for customer groups, the total revenue shall probably be greater than the amount of capacity charges paid by the distribution company to the TSO, because there shall be some diversity among peak loads. Therefore, it may be possible to include the TSO energy charge and the TSO capacity charge in the tariff to captive customers and collect the "correct" amount of revenue. This is a very simple way to set the transmission component of the tariffs to end use customers, and it would be acceptable to the ERE, provided the distribution company to liquidate no more and no less that its total cost of transmission service through these energy and capacity components of its tariff.

5. The OST should review tariff applications submitted by distribution company suppliers, to ensure that the total TSO revenue for that distribution company is collected from distribution company customers in a transparent and non- discriminatory way. The TSO shall inform ERE if the transmission system costs are being charged to end use customers in a transparent and non-discriminatory way. TSO opinion shall be taken into consideration by the ERE in reviewing the proposed tariffs for the tariff customers.)

Article 11

Setting the average transmission tariff ceiling

1. For the base year, the average transmission tariff ceiling is equal to the average transmission tariff calculated according to costs in the base year.

2. For the second year of the tariff review cycle (Year 2), the average transmission tariff for the base year is multiplied by the annual adjustment factor:

$$A = (1 + RPI - X)$$

A- annual adjustment factor

RPI- rate of consumer price inflation foreseen for the Year 2 by the National Bank of Albania, or INSTAT

X- efficiency improvement factor

3. The value of X shall be determined on the basis of a benchmarking study of transmission system operators, in conformity with the "Rules for the quality of supply and the grid performance security. If these rules are missing, the factor X shall be considered zero.

4. If TSO current financial activity in any year of the tariff review cycle is better than indicated by the financial expectations of the tariff application or better than the one approved by ERE, bonuses may be given for the company without raising the average transmission tariff over the average transmission tariff ceiling.

5. For the third year of the tariff review cycle (Year 3), the average transmission tariff for the second year is multiplied by the annual adjustment factor, using a RPI value corresponding to Year 3.

6. For the fourth year of the tariff review cycle (Year 4), the transmission revenue for the third year is multiplied by the annual adjustment factor, using a RPI value corresponding to Year 4. If transmission tariffs for the next tariff correction cycle have been approved before the end of the three year period then there is no need to calculate the average transmission tariff for Year 4.

7.According to this methodology it is performed the adjustment/correction in the average tariff ceiling for the next year, despite than the adjustments are made for the following regulatory period.

8. The OST should never be "punished" for over-recovery of revenue, through an adjustment

to the allowable rate of return on equity or through an adjustment of the price $\mathbf{P}_{\mathbf{regional}}$ that is assigned to network losses and to electric energy consumption for technological purposes. Over-recovery of revenue can result from forecasting errors and from unanticipated events and trends in the power sector.

9. An over-recovery of revenue during the last year of a tariff review cycle should be refunded to transmission system customers by making an adjustment to the level of the energy charge in the base year of the following tariff adjustment cycle.

10. If a "force majeure" event disrupts the transmission system, TSO may submit a request to ERE at any time, for permission to adjust the energy charge in the transmission tariff so that a specific amount of additional revenue shall be collected by the OST. However, an increase in the transmission tariff shall not provide significant revenue for the power sector unless the tariff to tariff customers is raised. The OST shall aim to achieve stable and foreseen transmission tariffs.

Article 12

Last provisions

The methodology for calculating the electricity transmission tariff was approved by ERE Board with Decision No.180, of date 08.11.2017. The approved methodology with decision no. 59, of date 29.12.2005 is abrogated.