

ELECTRICITY REGULATORY AUTHORITY

PART I

Public Generating Company tariff calculation methodology

Objective

The short-term objective of this tariff methodology is to provide a framework for the calculation of the generation cost components and facilitate the formation of a public generating company. The long-term objective of this tariff methodology is to establish a regulatory framework for the generation sector of Albania that is consistent with the Energy Community for South East Europe (ECSEE) Treaty.

1. Terms used in the methodology

Standard terms used in all tariff methodologies are defined in Law No. 9072, dated 22.05.2003 “On Power Sector”, the Market Rules, the Meter Code, the Transmission Code, and other secondary legislation approved by ERE. Terms introduced in this methodology have the following meanings.

- 1.1 **PGC – Public Generating Company**
- 1.2 **Average tariff for the PGC** – the PGC’s average revenue per kWh over a 12-month period, calculated as the total revenue from capacity-related charges and energy-related charges divided by the total kWh delivered to distribution/supplier companies.
- 1.3 **Base year** – the 12-month period in which the PGC tariffs approved by ERE are applied to invoices to distribution/supplier companies. The beginning of the base year is the date on which the cost of electricity from the PGC is charged to distribution/supplier companies according to the new PGC tariffs. This date may be no more than 30 days before and no more than 30 days after the date of official approval of the new PGC tariffs.
- 1.4 **Differentiated tariffs** – tariffs for customer service that include capacity-related charges and energy-related charges, related to respective voltage levels.
- 1.5 **Firm generating capacity** – installed generating capacity which is available to meet the forecast peak load of the Albanian power system, even in a dry year.
- 1.6 **PGC tariff** – a differentiated tariff calculated according to costs in the base year; the tariff for sales of energy by the PGC, and for firm generating capacity provided according to the terms and conditions of contracts with distribution/supplier companies.
- 1.7 **Regulated asset base (RAB)** – the value of fixed assets that are owned by the PGC and are used to provide energy and capacity to distribution/supplier companies and to fulfill the PGC’s obligation to ensure the reliability and security of the electric system. The regulated asset base does not include financial investments, securities, accounts receivable, or cash.

- 1.8 **Tariff review cycle** – the time period for which new tariffs become effective and are adjusted according to a decision taken by the Energy Regulatory Entity, following a complete and detailed review of a tariff application submitted by the Public Generation Company.

2. General regulations and basic principles

- 2.1 This methodology is developed in conformity with Law No. 9072, dated 22.05.2003, “On Power Sector” as well as other legal acts which are in force in the Republic of Albania.
- 2.2 This methodology is intended to support the development of a Regional Electricity Market. If the ECSEE Treaty enters into force, this methodology will be updated to ensure that it complies with the EU *acquis communautaire* for energy.
- 2.3 Payments to PGC for energy and capacity will be made by distribution/supplier companies, in accordance with bilateral agreements, based on the PGC tariff. Payments to PGC for ancillary services will be made by the TSO according to the electricity transmission tariff for ancillary services.
- 2.4 The principal business of the PGC is to generate hydroelectric energy in Albania, sell it to distribution/supplier companies at prices based on its own production cost, and maintain firm generating capacity at a level that is no lower than the firm generating capacity of hydro stations owned by KESH at December 31, 2004.
- 2.5 The PGC tariff should recover the cost of ownership, construction, operation, and maintenance of generating stations, dams used for hydropower generation, and related land, buildings, roads, and communication facilities. The PGC tariff should not be used to recover the cost of imports of electric energy, or any expenses related to import activity. The PGC has an obligation to provide electric energy to distribution/supplier companies and its prices are based on its own production costs and are not related to market prices of electric energy.
- 2.6 The PGC tariff is established once a year by ERE and becomes effective on January 1 of each year. In its simplest form it consists of a price of firm generating capacity and a price of energy. The PGC tariff can have a number of price components:
- a) The price of firm generating capacity provided to distribution/supplier companies. This is measured in leke per kW per month.
 - b) The price of energy provided to distribution/supplier companies. This is measured in leke per kWh.
 - c) A discounted price for the firm generating capacity energy provided to the household distribution/supplier company to meet the annual energy requirement of the first block of household consumption. This is measured in leke per kW per month [optional].
 - d) A discounted price of energy provided to distribution/supplier companies during off-peak hours. This is measured in leke per kWh [optional].

- 2.7 The definition of peak and off-peak may be approved by ERE on the basis of a proposal submitted by the TSO. The distinction between peak and off-peak periods is not relevant to the PGC tariff unless option d) is used.
- 2.8 In accordance with the Market Rules, the PGC may export surplus hydroelectric energy at market prices. The capacity charge for year (*i*) will be adjusted based on actual export revenue in year (*i-1*) according to the formula in paragraph 7.6.
- 2.9 The PGC's long-term debt financing should be used to finance capital expenditures for repair and renovation of existing power stations but should not be used to cover operating costs or to refinance assets that were brought into operation on or before 31.12.2000.
- 2.10 Connection charges paid to the TSO to connect new generating facilities to the transmission system shall be established on a case-by-case basis. The connection charge will cover a portion of the TSO investment attributable to the new connection. It will include 100 percent of the investment directly related to the new connection, and it may also include an allowance for a portion of the cost of reinforcement of network capacity. The amount of investment recovered through the connection charges shall be excluded from the Regulated asset base of the TSO.
- 2.11 The regulated company shall clearly and unambiguously report the costs of each regulated service including only the assets and activities related to the regulated services. The cost allocation method shall be comprehensive.
- 2.12 The PGC tariff shall be based on costs that would be incurred by a well-managed generating company which tries to make prudent investments and avoid wasteful expenditures. When setting the PGC tariff the regulator has the right to investigate the cost levels reported by the PGC, and benchmark its unit costs against other generating companies.
- 2.13 In preparing a tariff application the PGC shall try to present all costs with precision up to 1,000 Euro. The regulator should not question amounts less than 1,000 Euro unless there is a dispute about compensation or payment to specific physical persons.

3. Net generation and installed generating capacity

- 3.1 If the PGC tariff includes option d), a discounted price of energy provided to distribution/supplier companies during off-peak hours, then the total amount of electric energy delivered by the PGC in each monthly billing period should be divided into two categories – energy delivered during peak hours, and energy delivered during off-peak hours. Energy delivered to each distribution/supplier company should be measured separately.
- 3.2 The total amount of electric energy delivered by the PGC to the transmission network and the total amount of electric energy delivered by the PGC to the distribution network should be measured on an hourly basis, if possible, otherwise shall be decided on parties agreement.

- 3.3 The PGC should measure the available installed generating capacity at each generating station, according to UCTE standards. The PGC should also estimate the level of firm generating capacity at each generating station. This information should be verified by the TSO and then provided to ERE and to all of the distribution/supplier companies.

4. Costs to be included in the tariff calculation

- 4.1 Costs to be included in tariff calculation and recovered through capacity-related charges and energy-related charges consist of capital costs, operational costs and taxes. Only economically justified costs that pertain to the provision of regulated services shall be included in tariff calculation. The target level of revenue to be collected in the base year is equal to:

$$RR = C_{\text{capital}} + C_{\text{operating}} + C_{\text{tax}}$$

RR - revenue requirement

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

$$C_{\text{capital}} = R + D - A$$

C_{capital} - capital-related component of the target revenue for the base year

R - return on capital

D - depreciation of fixed assets and amortization of other assets

A - ancillary services revenue, which is collected from the TSO and represents a payment for ancillary services other than balance power

- 4.2.1 The return on capital is calculated by the formula:

$$R = B * r$$

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

r - the allowable rate of return on the Regulated Asset Base

where $B_i = B_{i-1} + \text{Investment}_i - \text{Depreciation}_i$

- 4.2.2 Land and rights-of-way used by the PGC may be valued at original purchase cost, adjusted for inflation. It is not necessary to estimate the market value of this land.
- 4.2.3 The depreciation lifetimes of different categories of assets should be based upon the expected operating life of these assets. If financial data have been distorted by the use of unreasonably high numbers for depreciation lifetimes, the regulator may instruct the PGC to prepare a set of financial accounts for tariff making purposes, using depreciation lifetimes approved by the regulator.

- 4.2.4 The allowable rate of return on the Regulated Asset Base is calculated from an allowable rate of return on equity in the base year, an estimated 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 regulator so that the assumptions used to calculate the allowable rate of return will be clearly presented. The allowable rate of return on the Regulated Asset Base is:

$$r = roe * (1-d) + i * d$$

roe – allowable after-tax rate of return on equity; a target set by the regulator

d – debt ratio - i.e. the ratio of long-term debt to fixed assets - which is set by the regulator and applied to the Regulated Asset Base

i – weighted average interest rate on long-term debt

- 4.2.5 The allowable rate of return on equity should be set by ERE.
- 4.2.6 The weighted average interest rate on long-term debt should be determined as 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
- 4.2.7 Power stations operated by the PGC must be owned by the PGC and not leased. Payments associated with leasing (for example, motor vehicle leasing) may be included in operating expenditures.
- 4.2.8 Costs associated with the acquisition of intangible assets such as patents, licenses, trademarks, software licenses, and information obtained through research and development should be shown as operating expenses. For a PGC tariff calculation there is no reason to capitalize the value of intangible assets.

- 4.3 The PGC's operating costs include:

$$C_{\text{operating}} = C_{\text{metering}} + C_{\text{maintenance}} + C_{\text{salaries}} + C_{\text{fuel}} + C_{\text{outsource}}$$

C_{metering} - the cost of measuring the power and energy delivered to Distribution/supplier companies, and the cost of billing and settlement of accounts with Distribution/supplier companies¹

¹ 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 distribution/supplier company 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; this component excludes the maintenance costs that have been allocated to **C_{metering}**

C_{salaries} - salaries, wages, medical insurance, and costs (other than taxes) associated with employee benefit programs; this component excludes the salary costs that have been allocated to **C_{metering}**

C_{fuel} - cost of fuel used in power generation

C_{outsourcing} - expenditures for professional services including accounts, lawyers, financial advisors, consultants, IT specialists, and advertising agencies (excluding expenditures already included in salaries and wages)

4.3.1 In special circumstances the repair and maintenance of a generating station may be done by private firms rather than employees of the PGC. The costs should be included in **C_{outsourcing}**.

4.4 The **C_{tax}** component enables the regulator to show clearly the portion of the tariff which is attributable to taxes and therefore beyond the regulator's control.² Although it is possible to reduce electricity rates by lowering the contribution of the electric sector to tax revenues, the regulator's role is simply to provide the figures that show the tax component of electric sector tariffs including the PGC tariff. The tax component of the PGC's target revenue for the base year, excluding VAT, is:

$$C_{\text{tax}} = C_{\text{social tax}} + C_{\text{property tax}} + C_{\text{profit tax}} + C_{\text{ERE}}$$

4.4.1 The cost component labeled **C_{social tax}** includes all taxes related to salaries, such as pension taxes. This includes salary-related taxes that are used by the government to provide unemployment benefits and training to workers who lose their jobs. Insurance purchased by the PGC is considered a part of operating expenses, even if it is required by government regulations, and not a part of social taxes.

4.4.2 The cost component labeled **C_{property tax}** includes all taxes other than social taxes, income taxes and VAT. For example this component includes fees charged by government authorities other than ERE for permits and licenses. Property tax on buildings, constructions and land owned by the PGC is calculated based on the legal acts of the Republic of Albania.

4.4.3 The cost component labeled **C_{profit tax}** includes all profit taxes paid by the PGC to the Government of Albania. For the base year, this cost component may include an allowance for taxes paid in year 2 and subsequent years, but attributable to after-tax income earned in the base year.

² Under international financial accounting standards, salary-related taxes and property taxes are normally included in operating expenses, and profit taxes are included in income before tax, and therefore associated with the return on equity.

- 4.4.4 The cost component C_{ERE} includes all fees paid to ERE by the PGC.
- 4.4.5 VAT is not included in the formula shown above because it is calculated by the PGC for each distribution/supplier company's monthly bill, and shown as a separate item in the monthly bill.

5. Costs to be excluded from the generation tariff

- 5.1 The PGC's cost of providing balance power to the TSO must be recovered through ancillary services charges, which are paid by the TSO. This cost should be excluded from the PGC tariff.
- 5.2 If some portion of the firm generating capacity of the PGC is provided to the TSO and not to distribution/supplier companies, the payment for that capacity should be included in ancillary services revenue, which is collected from the TSO and represents a payment for ancillary services other than balance power.
- 5.3 In its tariff application the PGC must provide its best estimate of ancillary service revenue for the base year. The risk associated with the difference between forecast and actual ancillary service revenue is borne by the PGC.

6. Annual review of the PGC's ability to finance capital expenditures

- 6.1 The PGC should provide ERE with an annual financial statement for the most recent year ending December 31 as well as a pro forma forecast of financial statements for each of the following three years. The financial statements shall include a statement of cash flows indicating the sources and uses of funds.
- 6.2 The PGC provides a pro forma forecast of financial statements for three years, which identifies the sources of funds used to cover annual capital expenditures. The statement should also be accompanied by a document explaining the need for the reconstruction or construction projects in the annual capital expenditure program. Finally, the statement should be accompanied by a letter from the TSO confirming that these capital expenditures are needed to ensure the long-term security of supply of energy from the PGC.

7. Allocation of costs to capacity and energy

- 7.1 Each distribution/supplier company must pay a capacity charge, in leke/kW/Month, based on the supplier's peak load during the 12-month period ending with the billing month. If the supplier has signed an agreement with the PGC in which the supplier must pay for a specific amount of capacity guaranteed by the agreement, then the capacity charge is applied to whichever is higher – the contractually guaranteed capacity, or the supplier's peak load during the 12-month period ending with the billing month.
- 7.2 Each distribution/supplier company must pay an energy charge, in leke/kWh, based on the number of kWh delivered to the distribution/supplier company during that month.

7.3 The total revenue requirement is covered by capacity charges and energy charges:

$$\mathbf{RR} = \mathbf{C}_{\text{capacity}} + \mathbf{C}_{\text{energy}}$$

7.4 Metering, billing, and settlement costs incurred by the PGC to provide service a distribution/supplier company are included in the costs allocated to the energy charge. Therefore it is not necessary to include a fixed monthly charge in the tariff.

7.5 In a tariff application the PGC must provide a forecast of:

- a) the total capacity in kW that will be shown in Distribution/supplier companies' bills in each month of the base year, and the sum of these monthly totals
- b) the total energy in kWh that will be shown in Distribution/supplier companies' bills in each month of the base year, and the sum of these monthly totals

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

$$\mathbf{C}_{\text{capacity}} = \mathbf{C}_{\text{capital}} + \mathbf{C}_{\text{profit tax}} - 0.65 \mathbf{X}$$

$$\begin{aligned} \mathbf{X} &= \text{export revenue} \\ &= \text{export quantity} \times \text{average price per kWh exported} \end{aligned}$$

7.7 The capacity charge for firm generating capacity, in leke per kW per month, equals:

$$\mathbf{P}_{\text{capacity}} = \mathbf{C}_{\text{capacity}} / \mathbf{L}$$

\mathbf{L} - total firm generating capacity under contract to Distribution/supplier companies during the base year

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

$$\begin{aligned} \mathbf{C}_{\text{energy}} = & \mathbf{C}_{\text{metering}} + \mathbf{C}_{\text{maintenance}} + \mathbf{C}_{\text{salaries}} + \mathbf{C}_{\text{fuel}} + \mathbf{C}_{\text{outsource}} \\ & + \mathbf{C}_{\text{social tax}} + \mathbf{C}_{\text{property tax}} + \mathbf{C}_{\text{ERE}} \end{aligned}$$

7.9 The average energy charge, in leke per kWh, equals:

$$\mathbf{P}_{\text{energy}} = \mathbf{C}_{\text{energy}} / \mathbf{E}$$

\mathbf{E} - total energy in kWh delivered to distribution/supplier companies during the base year

7.10 If the PGC has a significant level of thermal generation and if the cost of fuel \mathbf{C}_{fuel} is significant, separate prices for peak and off-peak energy should be calculated so that the average price equals $\mathbf{P}_{\text{energy}}$. Thermal generation costs (as shown in paragraph 7.8 above) would be allocated to the peak period only.

8. Calculation of the average tariff for the PGC

8.1 The average tariff for the PGC for a 12-month period equals:

$$\mathbf{P}_{\text{average}} = \mathbf{RR} / \mathbf{E} = (\mathbf{C}_{\text{capacity}} + \mathbf{C}_{\text{energy}}) / \mathbf{E}$$

$\mathbf{P}_{\text{average}}$ - average tariff for the PGC

- 8.2 The average tariff for the PGC may be calculated for any 12-month period. The monthly data may be forecast or historical or a combination of forecast data for future months and estimated data for recent months.

9. Deadlines

- 9.1 Based on this methodology, the PGC shall submit to ERE a request for the approval of new tariffs, no later than 6 months before the day that the new proposed tariffs are required to enter in force.

10. Final provisions

The methodology of public generating company tariff calculation was approved by ERE's Board of Commissioners on June 24, 2005.