

ELECTRICITY REGULATORY ENTITY

Publicly-owned Generation Tariff Calculation Methodology

PART I

Purpose

The purpose of this methodology is to set public-owned generation tariffs based on sound tariff principles and detailing the necessary data needed for fair and transparent tariff setting.

Objective

The objective of this tariff methodology is to provide separate tariffs for publicly-owned power plants (PGs) in anticipation of their eventual entry into the regional competitive power market. The tariff methodology will introduce the concepts of separately priced ancillary services by generating plants for system security and reliability.

1. Terms used in the methodology

Standard terms used in this regulation are defined in Law No. 9072, dated on May 22, 2003 “On Power Sector”, the Market Rules, the Meter Code, the Transmission Grid Code, and other secondary legislation approved by ERE. Terms introduced in this methodology have the following meanings.

- 1.1 **Ancillary Services** – Services provided by a PG for system security and reliability to the OST at prices set by the ERE.
- 1.2 **Base year** – the 12-month period in which a PG’s tariffs approved by ERE are applied to invoices to Wholesale Public Supplier (or “WPS”). The beginning of the base year is the date on which the cost of electricity from a PG is charged to the WPS according to the new PG tariffs.
- 1.3 **Firm generating capacity** – installed generating capacity which is available to meet the forecast peak load of the Albanian power system. For hydroelectric power plants, firm generating capacity is the average capacity available during the peak months of the year based on both equipment and normal year water availability. For thermal power plants, firm generating capacity is the net generation of the plant with an equivalent adjustment for standard scheduled and forced outages.
- 1.4 **Generating Economical Unit** – A hydro cascade, similar-sized groups of medium or small hydro power plants or a thermal power plant.

- 1.5 **PG tariff for energy and capacity** – a differentiated tariff calculated for each generating economical unit according to forecasted costs in the base year; the tariff for sales tariffs that include capacity-related charges, energy-related charges, according to the terms of the internal protocol/agreement with the wholesale public supplier.
- 1.6 PG Tariff for ancillary services – a tariff which has to be calculated according to the respective methodology for ancillary services approved by ERE.
- 1.7 Priority of Services – The generating plants must provide services in the following order – ancillary services to the TSO, sales to the TSO to cover the technical losses to transmission network , energy and capacity to the Wholesale Public Supplier and sales to the competitive power market.
- 1.8 **Regulated asset base (RAB)** – the value of fixed assets that are owned by a PG and are used to provide energy, capacity to the WPS and ancillary services to the OST to fulfill a PG’s obligation to ensure the reliability and security of the electric system. The ERE has to approve the RAB.
- 1.9 **Regulatory period** – the time period for which new tariffs become effective and are adjusted according to a decision taken by the ERE.

2. General regulations and basic principles

- 2.1 Non-compliance with any part of this Regulation may result in a rejection by the ERE of a tariff application by a PG.
- 2.2 This methodology is developed in conformity with Law on Power Sector and the Government-approved Albanian Market Model (“AMM”) as well as other legal acts which are in force in the Republic of Albania and other secondary legislation approved by the ERE.
- 2.3 The ERE will establish tariffs based on the principles that:
 - Tariffs should reflect the cost of service.
 - Tariffs should provide incentives for the appropriate level of investments into the generating plants and related facilities to ensure the generating facilities provide reliable and secure energy supply throughout their useful lives;
 - All generation tariffs should become competitively priced by the date of Regional Electricity Market establishment.
 - Rates should provide proper price signals for the efficient use of generating facilities;
 - Expenses included in regulated tariffs should be transparent to all stakeholders;
 - The tariffs should allow a generating company a reasonable opportunity to earn the ERE-approved allowed rate of return on the ERE-approved rate asset base;

- Only prudently acquired services and products by the electricity PG licensee will be accepted into the generation tariffs; and,
 - Prices for energy services should remain relatively stable over time.
- 2.4 Payments to a PG for energy and capacity will be made by the WPS, in accordance with internal protocol/agreements, based on the PG tariff. Payments to a PG for ancillary services will be made by the TSO according to the ASC (Ancillary Service Contract).
- 2.5 A PG tariff should not be used to recover the cost of any activity not related to the provision of energy and capacity for transmission losses; energy and capacity to the WPS or ancillary services to the OST. Each PG has an obligation to provide electric energy and capacity to the WPS and ancillary services at regulated prices based on its own production costs and not related to market prices of electric energy.
- 2.6 Ancillary services will be introduced at regulated prices. Once the ERE determines that sufficient market conditions exist for an ancillary service, a competitive market will be created for pricing of that ancillary service.
- 2.7 The ERE will adopt template tables for tariff applications. The generating company shall use the template tables provided by ERE when filing a rate application for a regulatory period. The format of the tables can be modified as long as the information is organized in a similar manner and the breakdown of information in no less than that provided in the approved template tables.
- 2.8 The template tables will show test year results, adjustments made to test year and resulting base year including but not limited to company expenses, capital expenditures, and rate asset base by regulated service. Capacity and energy expenses from the USoA will be separately listed on the tables based on the ERE-approved regulatory chart of account numbering.
- 2.9 A PG tariff shall be based on costs that would be incurred by a well-managed generating company which makes prudent investments and avoids wasteful expenditures. When setting a PG tariff, the ERE has the right to investigate the cost levels reported by the PG, and benchmark its unit costs against other generating companies in Albania and in the region.

3. Test Year, Base Year and Regulatory Periods

- 3.1 The ERE decides on the appropriate regulatory periods for the public-owned generating company. The existing tariff review process is for annual reviews of revenue requirements for each PG and the setting tariffs for generating capacity and energy and to set prices for ancillary services.
- 3.2 In the future, the ERE may approve the use of either a price or revenue cap tariff methodology for publicly-owned generating companies.
- 3.3 The first regulatory period will be the calendar year 2009 under this tariff methodology.

- 3.4 If the ERE approves a cap tariff methodology for the publicly-owned generation, the regulatory periods for the generators will follow the same regulatory periods as for the transmission system operator, distribution system operator and the wholesale public supplier.

4. Net generation and installed generating capacity

- 4.1 The total amount of electric energy to be delivered by the PG to the transmission network will be in accordance with an agreed-upon hourly dispatch schedule. Any shortfall or surplus generation in an hour by the PG will be the responsibility of the PG which will be subject to balancing regulations administered by the OST.
- 4.2 A PG should establish the available installed generating capacity for the company according to the market rules. A PG should also estimate the level of firm generating capacity at each generating unit. This information should be verified by the OST and then provided to ERE and to the WPS.
- 4.3 Any capacity required to satisfy ancillary services including balancing requirements for the OST will be reserved by the PG and not offered for sale to the WPS. All remaining capacity and energy will be offered to the WPS up to amounts needed to satisfy tariff customer loads. The ERE will set amounts released for open market customers become eligible. Once all customers become eligible, all publicly-owned generation will be free to sell to the open market. If some customers remain as tariff customers and the publicly-owned generation is unable to sell into the competitive market, then the WPS is free to negotiate with the generators at rates no higher than approved by the ERE for each generating company.
- 4.4 If the WPS determines that not all the generation from a PG is needed to serve tariff customers energy needs, the PG may sell any unneeded (or surplus) capacity and energy into the competitive electricity market.

5. Revenue Requirements and Tariff Calculations for Ancillary Services

- 5.1 The PG will provide the ancillary services in accordance with the Market Rules and the services requested of the PG by the OST.
- 5.2 The regulated prices of ancillary services will be developed by the ERE for the initial years of regulated tariffs. The PGs in cooperation with the OST will undertake an engineering, accounting and power market study of the generation and transmission costs related to provision of ancillary services.
- 5.3 The engineering aspects of the study will identify the facilities and activities related to the provision of the service. The generating units that typically provide the ancillary services should be identified by the OST (such as the unit(s) that provide frequency control or those units capable of black start).

- 5.4 The allocation factors for each facility related to the service and the amount of effort required to provide the service is determined by the engineering experts. The accounting aspect is to monetize the engineering results into revenue requirements. The final aspect of the study is to determine an appropriate cost determinant for the service and forecasted level of service required in the market in the forecast period. The final results are separate regulated tariff for each ancillary service.
- 5.5 In lieu of a detailed study for the first regulatory period, the ERE may approve nominal amounts for the tariff level for the ancillary services. The PGs will still receive their revenue requirements through the energy and capacity sales to the WPS, while establishing the procedure for provision and sale of ancillary services in the power sector.

6. Revenue Requirements for Energy and Capacity Services

- 6.1 A PG's regulated tariffs 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.
- 6.2 The regulated company shall clearly and unambiguously report the costs of each regulated service including only the assets and activities related to regulated services using the ERE-approved template tables for tariff application. The cost allocation method shall be comprehensive and will be approved by the ERE.
- 6.3 Any forecasted revenues from the sale of energy for technical losses and ancillary services to the OST in the base year are not to be included in the base year revenue requirements for the sale of energy and capacity to the WPS.
- 6.4 Any costs related to the marketing and sale of surplus capacity and energy must not be included in the revenue requirements for regulated energy and capacity services.
- 6.5 Only economically justified costs that pertain to the provision of regulated energy and capacity services shall be included in tariff calculation.
- 6.6 In preparing a tariff application, the PG shall try to present all costs with precision up to 100,000 Leke. The regulator should not question amounts less than 100,000 Leke unless there is a dispute about compensation or payment to specific physical persons.

7. Return on Regulatory Asset Base

- 7.1 The regulatory asset base for a licensed service includes both tangible and intangible assets less accumulated depreciation plus a working capital component. The RAB is calculated according to the following formula:

$$RAB = A - CG - D + WC + INV ;$$

where:

RAB the Regulatory Asset Base;

- A the recognized value of used and useful assets at the beginning of regulatory period;
- CG the value of assets acquired through gratuitous transfer;
- D the accumulated depreciation for the past period of asset used to perform the licensed activity; Depreciation for new investments during the regulatory period will equal the mid year average annual cumulative depreciation
- WC the working capital requirement;
- INV the forecast of the mid year average cumulative nominal amount of investments approved by the ERE, which will be invested during the base year.
- 7.2 Not all assets of the publicly-owned generating company may be included in the regulatory asset base for a separately priced licensed service. Assets that do not support the licensed service will be disallowed from the regulatory asset base. Examples of disallowed assets include but not limited to assets used for non-licensed activities, recreational facilities, and assets purchased by the generating company above market value. The ERE based on its consultant or its own staff evaluation, should determine the market value only in cases of disputed levels of investment.
- 7.3 Land and rights-of-way used by a PG may be valued at original purchase cost, adjusted for inflation. It is not necessary to estimate the market value of this land.
- 7.4 The PG's long-term 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.
- 7.5 Depreciation of assets will be based on the most recent deprecation study provided by the PG and approved by the ERE that will show the lives of assets by category based on an engineering study. The ERE will apply tax lives on assets for regulatory purposes, but it may decide to use other depreciation rates in specific cases.
- 7.6 The working capital allowance in the regulatory rate base should be based on a study of the funds required to maintain a suitable level of material and supplies and the cash required to meet current obligations. Any such study will be included in the rate application by the generating company to the ERE. In absence of the study, the generating company may provide an estimate of the working capital allowance with written evidence justifying such an estimate.
- 7.7 Rate of return for the generating company should not reflect any assets acquired through gratuitous transfer. The generating company will be allowed to recover depreciation on such assets.
- 7.8 The generating company will provide the results of any revaluation of tangible assets which was performed in accordance with the Albanian Accountancy Act and International Accounting Standards and which was completed after the last rate

application proceeding for the generating company. The generating company will provide a breakdown of the asset, by categories, included in the regulatory asset base, before and after the revaluation. (Aspects of evaluation should be provided in the Corporate Accounting Practices and Procedures).

- 7.9 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 before tax allowable rate of return on the Regulated Asset Base is:

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

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

Where:

ES = Target for equity ratio of the RAB

T = Corporate Tax Rate

ARoE = Allowed return on equity after tax

DS = Target for debt ratio of the RAB

CoD = Cost of debt

- 7.10 The ERE will determine the appropriate after-tax Rate of Return on Equity for the generating company which will be the rate for a riskless security in Albania plus a risk premium related to the risk inherent in an electricity generating company. The ERE will may use various methodologies for determining an appropriate rate of return on equity. The ERE may use a number of factors for consideration, including, but not limited to: (1) comparisons with other companies having corresponding risks; (2) the attraction of capital; (3) current financial and economic conditions; (4) the cost of capital; (5) the risk of the enterprise; (6) the financial policy and capital structure of the utility; (7) the competence of management; and, (8) the company's financial history.
- 7.11 The ERE will determine the normalized cost of debt for calculating the debt component interest rates. The calculation will be based on interest rates for outstanding debt of the generating company. The interest rates used for determining revenue requirements may or may not be the same as actual interest rates for debt. The generating company must show that the interest rates for debt are in-line with interest rates for debt assumed by other companies with similar credit risks. Any debt included in the calculation of average debt interest rate that has an interest rate significantly higher than the current market level will be adjusted downward to the market level.

7.11.1 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.

7.11.2 The long-term debt ratio and the interim transitional targets are set by the ERE within a rate decision and applied to the Regulated Asset Base for a regulatory period.

8. Annual review of a PG's ability to finance capital expenditures

8.1 Each PG 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.

8.2 Each PG 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.

9. Allocation of costs to capacity and energy

9.1 The public supplier must pay a capacity charge, in leke/kW/Month, based on the contractually guaranteed capacity of the PG.

9.1.1 For hydropower plants the guaranteed capacity is based on the adopted annual generation plan in accordance with the market rules.

9.1.2 The capacity charges for a hydropower plant include 85% of total fixed costs of the plant.

9.1.3 For thermal plants, the guaranteed capacity is the lower of the contractual capacity or the calculation of actual availability of the plant during the peak hours of a billing month. The OST will maintain a record of plant availability and report on each plant's availability to the ERE each month.

9.1.4 The capacity charges for a thermal power plant includes all fixed costs of the plant (all costs other than fuel, fuel-related and variable O&M costs).

9.2 The WPS must pay an energy charge, in leke/kWh, based on the number of kWh delivered to by the generating company during a billing month.

9.2.1 The energy charges for a hydropower plant include all variable costs plus 15% of total fixed costs of the plant to provide incentive for the power plant to remain available and produce energy. The energy tariff for the hydropower plants is calculated as the total annual above costs divided by the expected energy production in the year.

- 9.2.2 The energy charges for a thermal power plant include all variable costs of the plant (fuel, fuel-related and variable O&M costs). The energy tariff for the thermal power plants is calculated as the total annual plant variable costs divided by the expected energy production in the year. The tariff for energy charges is calculated as the annual variable costs for the plant divided by the expected annual energy production. The energy charge will be modified each month based on plant efficiency, and a regional Fuel Price Index.

10. Deadlines

- 10.1 POG will file for each generator economic the specifics of its RAB for the 2009 tariff application filing.
- 10.2 Based on this methodology, a public-owned generating company 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.
- 10.3 For the first three regulatory periods, the targeted capital structure for the PG Company will be as per the published ERE Regulatory Statement.
- 10.4 The allowed after-tax return on equity will be initially set as per the published ERE Regulatory Statement.
- 10.5 The POG will coordinate a study with the TSO to develop an engineering, accounting and marketing study on ancillary services for determination of ancillary tariffs for the period 2010-2014. The study should be completed and submitted to the ERE by December 31, 2008.

11. Final provisions

The methodology of public-owned generating company tariff calculation was approved by ERE's Board of Commissioners by Decision Nr.77, dated on June 26, 2008..

Part II: Application Form