

BHUTAN ELECTRICITY AUTHORITY

**GUIDELINES
FOR
FILING TARIFF APPLICATIONS**

2012

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1. INTRODUCTION

This Guideline outlines the procedure and format for the tariff applications to be used by the Licensees for filing tariff applications to the Bhutan Electricity Authority for the determination of electricity prices in accordance with the Tariff Determination Regulation. Section 2 of the Guideline outlines the procedures and submission requirements for a tariff application. Section 3 consists of a detailed description on the figures the Licensees shall submit in the application forms for filing tariff applications. Section 4 outlines the additional information the Authority requires from the Licensees for reviewing the tariff applications.

2. TARIFF APPLICATION

- 2.1 At least four months prior to the expiry of the period for application of prevailing tariffs charged by a Licensee, the Licensee shall, as per Section 4.1 of the Tariff Determination Regulation, file with the Authority a tariff application in the application form prescribed in the Section 3.
- 2.2 The application shall include the proposal for Miscellaneous Charges for the proposed tariff period and additional information outlined in Section 4.
- 2.3 The Licensee shall propose any necessary amendments to the Tariff Determination Regulation at least three months prior to the submission of the tariff application.
- 2.4 Every application for determination of tariff or for continuation of previously determined tariff shall be accompanied with a tariff application fee as specified in the Regulatory Fees Regulation.
- 2.5 The Licensees shall designate persons responsible for communication with the Authority and provide any necessary clarification or additional information on the tariff application. The Licensee shall provide the clarifications within the date stipulated by the Authority.
- 2.6 Any delay / non-submission of the tariff application / information may attract penalty / fines in accordance with the Section 11.1(vi) of the Electricity Act of Bhutan, 2001.
- 2.7 The Authority shall have the right to use the information submitted by the Licensees as it deems fit including publishing it or placing it on the Bhutan Electricity Authority website or directing the Licensee to display the information on the Licensee's website. The Authority may on request by the Licensee omit publishing any information due to security or trade secrecy reasons.
- 2.8 The Licensee shall submit two hard copies of the Tariff Application and related documents. In addition to the hard copies, the information shall be submitted in electronic form.

3. TARIFF APPLICATION FORMS

3.1 The information to be filed by the Licensee shall be in the forms prescribed below:

- i. Tariff application form for Generation Licensees as prescribed in Appendix 1. A Generation Licensee shall submit separate application forms for each plant and one consolidated application form for all plants owned by the Generation Licensee.
- ii. Tariff application form for Transmission and Distribution Licensee as prescribed in Appendix 2.

3.2 The electronic copy of the application forms in Appendix 1 and 2 can be obtained from the Authority.

3.3 The Licensee shall propose a tariff period in the “Input” sheet in the application forms. The Reference Year is the last year for which all audited accounts are available.

3.4 The return on fixed assets is calculated as the Weighted Average Cost of Capital (WACC) and determined according to Section 6.6.3 in the Tariff Determination Regulation. The equation is the same for both Generation and Transmission and Distribution Licensees.

- i. The WACC is calculated in the “Input” sheet in both application forms by inserting the Cost of Debt and tax parameters.
- ii. Cost of Equity and the gearing ratio are determined by the Authority.
- iii. Cost of Debt;
 - a. The Cost of Debt is to be proposed by the Licensee, and shall be calculated as the weighted average interest rate of the Licensees’ current loans, loans which have zero interest rate, loans which will be availed during the tariff period and the Licensees’ liabilities to the customers (i.e. collected security deposits and capacity reserve charges).
 - b. The estimation of the average cost of debt shall be explained by the Licensee. The Licensee shall submit loan details along with legal documents, loan agreements, and contract terms and conditions.
 - c. The Cost of Debt of assets that are work in progress will be covered through Interest during Construction (IDC) at the actual rate and will be capitalized with asset values. The Licensee shall submit detail calculation of IDC. The Licensee shall include IDC when capitalizing the assets.

- iv. The Licensees shall insert the actual Corporate Income Tax as the tax parameter.

3.5 **Application form for determination of generation prices**

3.5.1 The total cost of supply for a generation Licensee is determined as per Section 8.1.1 of the Tariff Determination Regulation. It is determined as the sum of the allowances for operating and maintenance, the depreciation of assets and the return on fixed assets and working capital. The following has to be submitted in the application form:

i. Determination of O&M Costs

- a. The Licensees shall report the historical O&M costs for the years in the last tariff period and propose an allowance for average O&M costs in the tariff period in figures in the “Input sheet”. The proposed allowance for O&M costs shall be the estimated average O&M costs per year in the tariff period, neither adjusted for inflation, efficiency gains, net investments nor the regulatory fees.
- b. The Licensee shall propose efficiency gain targets for each year in the tariff period and include a justification for the proposal in addition to the percentages submitted in the form.
- c. The Licensees shall propose regulatory fees according to the Regulatory Fees Regulation.
- d. The Licensee shall propose the historical inflation rates as estimated by the National Statistics Bureau in the input sheet. The Licensee shall propose a forecast of the average annual inflation rate for the tariff period. The sources of the forecasted average annual inflation rate shall be submitted in addition to the proposed inflation rate.
- e. The Licensees shall calculate the Current Replacement Cost (CRC) of the assets in the reference year. This information will be used for reviewing the benchmark O&M cost. The CRC shall either be estimated by using current prices on the current assets or by using historical capital expenditure inflated to current price level using a relevant price index. The method and price index used for calculation of the CRC shall be explained. A copy of report on asset revaluation shall be provided to explain the method and price index used for calculation of Current Replacement Cost and the replacement cost in the application document shall be consistent to the excel input sheets. In addition to the above information, the Licensee shall submit historical insurance costs per Plant for the last Tariff period. The Licensee shall also provide any reason for the change in insurance Policy.

ii. Determination of Depreciation:

- a. The Licensee shall submit the gross and net asset value, lifetime, accumulated and annual depreciation, for the reference year as specified in Schedule A- Assets in the application form. This shall be reported for granted and non-granted assets separately. Depreciations on granted assets shall be included in the allowances. The Licensee shall also explain any increase in accumulated depreciation over annual depreciation and must make sure that net asset value is consistent with the depreciations and lifetime.
- b. The asset values and depreciations shall be calculated according to the Tariff Determination Regulation. The data shall be based on audited accounts.
- c. Allowance for depreciation of assets is calculated from the figures submitted by the Licensee in Schedule A – Assets and Schedule B- Investments of the application form.
- d. The Licensee shall submit the investment forecast for the tariff period as specified in Schedule B- Investments of the application form.
 - The Licensee shall submit the detailed and correct Investment plan which shall be consistent with the application form and should submit the total amount of capitalized investment per year per project in the investment Plan. Each project in the investment plan shall be explained in detail.
 - Any adjustments and removals in the Schedule B-Investments shall be explained and supported by necessary documents.
 - The Licensee shall explain any reason for increasing inventories and must define the inventories and mention whether they are included in the Investment plan or not.
 - The diesel generation investment shall be separated due to different depreciation rates.
 - Annual depreciations shall be calculated using depreciation rates as set out in Schedule B of the Tariff Determination Regulation.

iii. Determination of Return on Fixed Assets

- a. The return on fixed assets is determined as the product of WACC and the net value of all fixed assets determined at the start of each year. The net asset value is calculated from the Schedules A and B reported by the Licensee. The allowances for return on fixed assets shall not include any return on granted assets. Any assets that were handed over to other

agencies should be removed from Licensee's Regulatory Asset Base (RAB).

iv. Determination of Cost of Working Capital

- a. The allowance for return on working capital is determined by using the WACC, the Licensees' revenue, proposed arrears and allowance for inventories. Arrears and allowances for inventories shall be proposed by the Licensee in the "Input" sheet. Arrears are the allowed days receivables in days. The arrears for an individual generation Licensee is calculated as weighted average using generation forecast of the plants owned by the Licensees.
- b. The proposed arrears shall be in average number of days and the Licensees shall submit a justification of the proposal.
- c. The proposed amount for the inventories shall also be submitted with an explanation on the calculation of the proposed amount.

3.5.2 The annual energy volume is determined as per Section 8.1.2 of the Tariff Determination Regulation. The Licensees shall submit the design energy for each generating station in the tariff period in the "Input" sheet. The allowance for auxiliary consumption and availability at each plant is set out in Schedule D of the Tariff Determination Regulation.

3.5.3 The average cost of supply is determined as per Section 8.1.3 in the Tariff Determination Regulation and it is the ratio of discounted annual cost of supply to the discounted energy volumes.

3.5.4 The Royalty Price is determined as per Section 8.2.3 in the Tariff Determination Regulation. The Royalty Price is determined as average cost of supply less the ratio of the discounted subsidy amounts in Million Ngultrum to the discounted Royalty energy. The Licensees shall submit the following:

- a. Proposal for annual subsidy amount in the "Input" sheet. The Authority shall use the amount of subsidy for each Licensee as determined by the Minister.
- b. The average annual energy volume for the tariff period in the "Input" sheet. The Royalty Energy volume is determined as per Section 8.2.1 of the Tariff Determination Regulation.
- c. The additional energy shall be determined as per Section 8.3 of the Tariff Determination Regulation. Any energy delivered by generation Licensee to a distribution Licensee above the royalty energy shall be termed as additional energy.

3.5.5 The Licensee shall submit detailed calculation of the average import cost along with volumes and prices. Any power purchase from other Licensee must be supported by legal documents such as Agreements, Memorandums (MoUs) and other relevant documents.

3.6 Application form for determination of end-user prices

3.6.1 The annual network cost of the Licensee is determined as per Section 9.3.2 in the Tariff Determination Regulation. According to Section 9.3.1 the costs shall comprise of the sum of the operating and maintenance allowance (O&M), any allowances for fees and levies, the allowance for depreciation, and the allowance for return on assets. The following has to be submitted in the application form:

i. Determination of O&M costs

- a. The Licensee shall report the historical O&M costs for the last tariff period and propose an allowance for average O&M costs for the tariff period in figures in the “Input sheet” for Generation, Transmission, Distribution and Others separately. The Licensees shall explain how the apportioning of the total historical O&M cost to Generation, Transmission, Distribution and Others was done. The proposed for O&M costs allowance shall be the estimated average O&M costs per year in the tariff period, neither adjusted for inflation, efficiency gains, net investments nor the regulatory fees.
- b. The Licensee shall propose efficiency gain targets for each year in the tariff period and include a justification of the proposal.
- c. The Licensee shall propose regulatory fees according to the Regulatory Fees Regulation.
- d. The Licensee shall propose the historical inflation rates as estimated by the National Statistics Bureau in the input sheet. The Licensee shall propose a forecast of the average annual inflation rate for the tariff period. The sources of the forecasted average annual inflation rate shall be submitted with justification in addition to the proposed inflation rate.
- e. The Licensee shall calculate the Current Replacement Cost (CRC) of the assets in the reference year. This information will be used for reviewing the benchmark O&M cost. The CRC shall either be estimated by using current prices on the current assets or by using historical capital expenditure inflated to current price level using a relevant price index. The method and price index used for calculation of the CRC shall be explained.

ii. Determination of Depreciation

- a. The Licensee shall submit the gross and net asset value, lifetime, accumulated and annual depreciation, for the reference year as specified in Schedule A- Assets of application form. The asset values and depreciations shall be

calculated according to Section 6.4 and 6.5 of the Tariff Determination Regulation. The data shall be based on audited accounts. Any investment contributions from the customers are not to be included in the assets.

- b. The Licensee shall submit the investment forecast for the tariff period as specified in Schedule B- Investments of the application form.
 - The Licensee shall submit the detailed and correct Investment plan which shall be consistent with the application form and should submit the total amount of capitalized investment per year per project in the investment Plan. Each project in the investment plan shall be explained in detail. Any adjustments and removals in the Schedule B- Investment shall be explained and supported by necessary documents
 - Any investment contributions from the customers are not to be included in the assets.
 - The Licensee shall treat the capital drawdown amounts as per the investment forecast excluding project financed through grants.
 - The Licensee shall provide detail information on the “Outside the Plan Works”, what are they and how will they be treated in their accounts.
- c. The Licensee shall submit figures for non-granted and granted assets separately. The Licensee shall provide a list of the granted assets. Depreciations on granted assets will be included in the depreciation allowances.
- d. Allowance for depreciation of assets is calculated from the figures in Schedule A – Assets and Schedule B- Investments submitted by the Licensee in the application form.
- e. The allocation factors used for the allocation of asset-related costs, O&M costs, inventories and fees are given in Schedule F in the Tariff Determination Regulation. Any changes to the allocation factors for assets shall be proposed in Schedule A - Assets of the application form and any changes to allocation factors for O&M costs, inventories and fees shall be proposed in the Input Sheet of the application form along with justifications.

iii. Determination of Return on Fixed Assets

- a. The return on fixed assets is determined as the product of WACC and the net value of all fixed assets determined at the start of the year. The net asset value is calculated from the Schedules A- Assets and Schedule B - Investments reported by the Licensee. The allowances for return on fixed assets shall not include any return on rural electrification assets provided through capital grants.

iv. Determination of Cost of Working Capital

- a. The allowance for Return on Working Capital is determined as per Section 9.4.2 of the Tariff Determination Regulation. The Licensee shall propose arrears and allowance for inventories for the tariff period. Both figures shall be reported in the “Input” sheet in the application form.
- b. The Licensee shall propose arrears for HV, MV, LV and Wheeling customers in days along with justification of the proposal. The Licensee shall also provide details of bill delivery and receipt of bill payment.
- c. The proposed amount for the inventories shall also be submitted with justification of the proposed amount.

3.6.2 The Power Purchase Price (PPP) is determined as per Section 9.5.1 of the Tariff Determination Regulation. The PPP is a weighted average price of power purchases from domestic generators at their additional price. The Licensee shall provide the following information:

- i. The Licensee shall propose a figure for the Additional Price in the “Input” sheet.
- ii. The Licensee shall submit the historical energy volume and forecasted energy volume for the tariff period from own generation (mini-/micro-hydels, diesel generators) in the “Own Generation” sheet.
- iii. The expected generation from own generation shall be deducted from the total power purchase forecasted by the Licensee.

3.6.3 The cost of supply for each Customer Group is determined as per Section 9.5.2 of the Tariff Determination Regulation. It is determined by the sum of energy purchase cost valued at the Power Purchase Price, the cost of imported energy valued at the import price, network costs, and the cost of working capital less any subsidies. The Licensee has to submit the following to determine the cost of supply:

- i. The import Price and the average import volume for the tariff period shall be proposed in the “Input” sheet. The Licensee shall submit details on the forecasted power purchase from other Licensees and imports in volumes and prices, along with the Power Purchase Agreement indicating the price.
- ii. The Licensee shall propose the forecasted energy sales for LV, MV, HV and Wheeling in the “Input” sheet, with calculations and assumptions made and the basis for the assumptions reported separately.
- iii. The Licensee shall report historical non-tariff revenues and their sources. The Licensee shall propose non-tariff revenues for the tariff period supported with calculations such as volumes and prices for each category and their sources of these revenues.

- iv. The non-tariff revenue includes all revenue stemming from other sources than tariffs, such as, income from deposit works, rental income, hire charges, miscellaneous charges etc. All non-tariff revenue that is not directly collected from the HV, MV or LV customers shall be allocated to these customer groups based on the same allocations as the cost related to providing the services as prescribed in Schedule F of the Tariff Determination Regulation.
 - v. The Licensee shall propose subsidy amounts per year in the “Input” sheet which are consistent with the proposed tariffs in the “Tariff Structure” sheet. Only under special circumstances and as a transition mechanism will the Authority allow cross-subsidies from one customer group to another.
 - vi. The Licensee shall propose losses as per Schedule E of Tariff Determination Regulation. If the Licensee proposes any other figure for the losses, the proposal shall be supported by justification and method of calculating losses.
- 3.6.4 The Average Price for a consumer group is determined as per Section 9.5.3 of the Tariff Determination Regulation. The average price for each consumer group is determined as the ratio of the discounted costs of supply to the discounted electricity sales, where sales are adjusted for an allowance collection rate. The cost of supply and the electricity sale is determined and proposed as per Section 9.5.2 of the Tariff Determination Regulation. The collection rate is a target set by the Authority as a percentage as per Schedule E of the Tariff Determination Regulation.
- 3.6.5 The Licensee shall propose a price path (average tariff in Nu/kWh) per customer group for the tariff period in the “Output” sheet. The price path shall be consistent with the proposed allowances and subsidies.
- 3.6.6 The Licensee shall propose a tariff structure in the “Tariff Structure” sheet. The tariff structure shall include proposed block-wise energy charges for LV customers, and energy and demand charges for MV and HV customers. The tariff structure shall be accompanied by the billing data assumption for the tariff period. The billing data assumptions shall be consistent with the energy sales forecasts in the “Input” sheet. The average tariffs for LV, MV and HV customers shall be calculated using the proposed tariffs and billing data assumptions, and shall be consistent with the average tariffs calculated in the “Output” sheet.

4. ADDITIONAL INFORMATION REQUIREMENTS

- 4.1 In addition to the information to be submitted according to the forms in Section 3.1 the Licensee shall also submit the following as applicable:
- i. Profit and Loss Account, Balance Sheet and Cash Flow Statement for the previous tariff period.
 - ii. Audit reports of the Royal Audit Authority, Bhutan and the Statutory Auditors for the previous tariff period.

- iii. Brief description of geographic, technical and financial aspects of the assets financed through grants.
- iv. The Licensee shall also provide explanations for assumptions made for calculations of Miscellaneous Charges and data on the frequency and type of the Miscellaneous Charges paid by different consumers during the previous tariff period and projections for the proposed tariff period.

APPENDIX 1 – GENERATION TARIFF APPLICATION FORM

APPENDIX 2 – TRANSMISSION AND DISTRIBUTION TARIFF APPLICATION FORM