

**BHUTAN ELECTRICITY AUTHORITY**

**GUIDELINES FOR  
FILING TARIFF APPLICATIONS**

**2019**

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## **INTRODUCTION**

This guideline outlines the procedure and format for the tariff applications to be used by the Licensee for filing tariff applications to the Authority for the determination of electricity prices in accordance with the Tariff Determination Regulation, 2016.

This guideline outlines the procedures and submission requirements for a tariff application. The guideline has outlined the detailed description of the submission requirements for Investment Plan as part of filing tariff application. This guideline also contains detailed description such as tariff application form/model, application for determination of generation prices and application for determination of end-user prices that the Licensee shall submit in the tariff application form/model for filing tariff applications.

## **TITLE AND COMMENCEMENT**

1. This Guideline:
  - (1) Be cited as the Guidelines for Filling Tariff Applications 2019 and;
  - (2) Come into force with effect from 1<sup>st</sup> January 2019.

## **TARIFF APPLICATION**

2. The Licensee shall submit the investment plans for the upcoming tariff period to the Authority, at least nine (9) months prior to the expiry of the current tariff period. The detailed submission of the investment plans by the Licensee is outlined in 'Investment Plan' of this guideline.
3. The Licensee shall submit tariff application for a revised Tariff Schedule along with the complete set of documents, at least four (4) months prior to the expiry of the current tariff period. The Licensee shall file the tariff application in the application form/model prescribed in the 'Application form/model for Determination of Generation Prices' and 'Application form/model for Determination of End-User Prices' of this guideline.
4. The tariff application shall include the proposal for Miscellaneous Charges for the proposed tariff period.
5. The Licensee shall submit Additional Information as outlined in this Guideline.
6. Every tariff application for determination of tariff or for continuation of previously determined tariff shall be accompanied with a tariff application fee as specified in the Schedule 1 (amended in January 2013) of the Regulatory Fees Regulation, 2006.
7. The Licensee shall designate a competent person 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.

8. The Authority shall as soon as possible after receipt of the tariff application either request additional information or confirm in writing to the Licensee that the tariff application is complete in all aspects.
9. The Licensee shall submit two (2) hard copies of the tariff application and related documents. In addition to the hard copies, the information shall be submitted in electronic form.
10. The Authority shall have the right to use the information submitted by the Licensee as it deems fit including publishing it on the Authority website or directing the Licensee to display the information on the Licensee's website. However, on request by the Licensee the Authority may omit publishing any information in order to prevent the revealing of business secrets and other sensitive matters.
11. Any delay in submission of the tariff application and any delay or non-submission of information required by the Authority may attract penalty/fines in accordance with the Section 11.1(vi) of the Electricity Act of Bhutan, 2001.

## **INVESTMENT PLAN**

12. The Licensee shall submit the investment plans for the upcoming tariff period as specified in Schedule B - Investments in the tariff application form/model.
13. The Licensee shall submit the investment plans in-line with the existing plans and policies of the Government and any up-gradation/augmentation and rehabilitation plans of the existing system.
14. The Licensee shall submit any other necessary investment plans, which are not a part of clause 13 of this guideline. For such investments, Licensee shall submit adequate justifications for the need of the investment in the tariff period.
15. The Licensee shall exclude any investment of the subsidiary company which is not directly related to licensed activities and investments which are not relevant for carrying out operation and maintenance of existing power plants and transmission & distribution infrastructures.
16. The Licensee shall submit the background and details of the investment plans covering:
  - (1) What is expected to be done within the project and explain the key prerequisites of the project;

- (2) The cost breakup and capitalization schedule on yearly basis for each project;
  - (3) The cost-benefit analysis for each project; and
  - (4) The financing plan of each project. If the project is financed through loan, the principal loan amount, interest rate and repayment schedule shall be included.
17. The Licensee shall submit the risks for completion of each project in the investment plans and grade each project as high, medium or low risk with justifications. The projects shall be listed in order of priority by indicating the need of the Licensee and the overall benefit to the country.
18. The Licensee shall submit the list of Associated Transmission System to be constructed for the hydropower projects.
19. The Licensee shall submit the list of Capital Work in Progress with its cost and year of completion.
20. The Licensee shall submit diesel generation investment plans separately.
21. Annual depreciations shall be calculated using depreciation rates as set out in Schedule B of the Tariff Determination Regulation, 2016.
22. Any adjustments and removals in the Schedule B - Investments shall be explained and supported by necessary documents.

#### **TARIFF APPLICATION FORM/MODEL**

23. The information to be filed by the Licensee shall be in the form prescribed below:
  - (1) Tariff application form/model for Generation Licensee as prescribed in Appendix 1. A Generation Licensee shall submit separate application form/model for each plant and one consolidated application form/model for all plants owned by the Generation Licensee; and
  - (2) Tariff application form/model for Transmission and Distribution Licensee as prescribed in Appendix 2.
24. The electronic copy of the application forms/models in Appendix 1 and 2 can be obtained from the Authority.
25. The Licensee shall propose a tariff period in the “Input” sheet in the tariff application form/model. The Reference Year of the tariff period is the last year for which all audited accounts are available.

26. The return on fixed assets shall be determined as the product of Weighted Average Cost of Capital (WACC) and net asset values at the start of any year.
27. The WACC is calculated in the “Input” sheet in both application forms/models by inserting the Cost of Debt, Cost of Equity, Gearing ratio and prevailing Corporate Income Tax rate, Cost of Equity and the gearing ratio are determined by the Authority. The Cost of Debt shall be determined as follows:
  - (1) The Cost of Debt (CoD) is the actual cost of debt of the Licensee for the tariff period, as a percentage, being the weighted average interest rate of the Licensee’s loans with suitable allowance made for currency risk of any loans not made in local currency and the Licensee’s liabilities to the customers (i.e. collected security deposits and capacity reserve charges);
  - (2) The estimation of the average cost of debt shall be explained by the Licensee. The Licensee shall submit loan details along with legal documents such as loan agreements and contract terms and conditions; and
  - (3) 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.

#### **APPLICATION FOR DETERMINATION OF GENERATION PRICES**

28. The total cost of supply for a Generation Licensee is determined as per Section 67 of the Tariff Determination Regulation, 2016. It is determined as the sum of the allowances for operating and maintenance, depreciation, return on fixed assets, return on working capital and regulatory fees and charges. The following has to be submitted in the tariff application form/model:
  - (1) Determination of O&M Costs
    - a. The Licensee 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 in the tariff application form/model. 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 justifications for the proposal in addition to the percentages submitted in the form;

- c. The Licensee shall include regulatory fees according to Schedule 1 (amended in January 2013) of the Regulatory Fees Regulation, 2006;
- d. The Licensee shall use inflation rate based on historical average inflation rates published by the National Statistics Bureau of Bhutan in the “Input” sheet in the tariff application form/model; and
- 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. A copy of report on asset revaluation shall be provided to explain the method and price index used for calculation of CRC. The replacement cost in the application document shall be consistent to the “Input” sheet in the tariff application form/model. In addition to the above information, the Licensee shall submit historical insurance costs for each plant for the last tariff period. The Licensee shall also provide any reason for the change in Insurance Policy.

(2) 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 tariff application form/model. The Licensee shall calculate annual depreciation and accumulated depreciation according to the life of asset using the depreciation rate as per Schedule B of Tariff Determination Regulation, 2016. The proposed gross asset value, accumulated depreciation and net asset value of each plant and corporate office shall be submitted separately. 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 of the asset;
- b. The asset values and depreciations shall be calculated according to the Tariff Determination Regulation, 2016. The asset and depreciation values shall be based on audited accounts; and
- c. Allowance for depreciation of assets is calculated from the figures submitted by the Licensee in Schedule A - Assets and Schedule B - Investments in the tariff application form/model.

(3) 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 Schedule A - Assets and Schedule B - Investments in the tariff application form/model reported by the Licensee. Any assets that were handed over to other agencies should be removed from Licensee's Asset Base.

(4) Determination of Cost of Working Capital

- a. The allowance for return on working capital is determined by using the interest on working capital, the Licensee's revenue, proposed arrears and allowance for inventories. The interest on the working capital shall be the lowest short-term lending rate of financial institution in Bhutan. Arrears and allowances for inventories shall be proposed by the Licensee in the "Input" sheet in the tariff application form/model. 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 Licensee;
  - b. The proposed arrears shall be in average number of days and the Licensees shall submit a justification of the proposal; and
  - c. The proposed amount for the inventories shall also be submitted with an explanation on the calculation of the proposed amount.
- (5) The annual energy volume is determined as per Section 68 of the Tariff Determination Regulation, 2016. The Licensee shall submit historical energy generation for each generating station for past three (3) years. The annual energy volume shall be calculated as average annual generation for past three (3) years less royalty energy in the tariff period in the "Input" sheet in the tariff application form/model. The licensee shall submit the allowance for auxiliary consumption, royalty energy and monthly water utilization factor for each plant for past three (3) years with detailed calculation.
- (6) The average cost of supply is determined as per Section 69 of the Tariff Determination Regulation, 2016 and it is the ratio of discounted annual cost of supply to the discounted energy volumes, with discounting applied over the tariff period using the WACC.
- (7) The Licensee shall submit detailed calculation of the average import cost along with volumes and prices. Any power purchase by the Licensee must be supported by legal documents such as Agreements, Memorandums (MoUs) and other relevant documents.



## APPLICATION FOR DETERMINATION OF END-USER PRICES

29. The annual network cost of the Licensee is determined as per Section 74 of the Tariff Determination Regulation, 2016. According to Section 73 of the Tariff Determination Regulation, 2016 the costs shall comprise of the sum of the allowance for return on fixed assets, allowance for depreciation, operating and maintenance allowance (O&M), and any allowances for fees and charges. The following has to be submitted in the application form/model:

(1) 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 Schedule A - Assets and Schedule B - Investments in the tariff application form/model reported by the Licensee. Any assets that were handed over to other agencies should be removed from Licensee's Asset Base.

(2) Determination of Depreciation

- a. The Licensee shall submit the gross and net asset value, lifetime of fixed assets, accumulated and annual depreciation for the reference year as specified in Schedule A - Assets in the tariff application form/model. The asset values shall be calculated as per Section 41 to 48 and depreciations as per Section 49 to 52 of the Tariff Determination Regulation, 2016. The asset and depreciation values shall be based on audited accounts;
- b. Allowance for depreciation of assets is calculated from the figures in Schedule A – Assets; and
- c. The allocation factors used for the allocation of asset-related costs, O&M costs, inventories and fees and charges are given in Schedule F in the Tariff Determination Regulation, 2016. Any changes to the allocation factors for assets shall be proposed in Schedule A - Assets of the tariff application form/model and any changes to allocation factors for O&M costs, inventories and fees shall be proposed in the “Input” sheet in the tariff application form/model along with justifications. The changes to be made to the allocation factors shall be determined as per Section 62 of Tariff Determination Regulation, 2016.

(3) Determination of O&M Costs

- a. The Licensee shall report the historical O&M costs for each year in the last tariff period and propose an allowance for average O&M costs for the tariff

period in figures in the “Input” sheet in the tariff application form/model 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 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 and charges;

- b. The Licensee shall propose efficiency gain targets for each year in the tariff period and include justifications of the proposal;
- c. The Licensee shall propose regulatory fees and charges according to Schedule 1 (amended in January 2013) of the Regulatory Fees Regulation, 2006;
- d. The Licensee shall use inflation rate based on historical average inflation rates published by the National Statistics Bureau of Bhutan in the “Input” sheet in the tariff application form/model; and
- 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.

(4) Determination of Cost of Working Capital

- a. The allowance for Return on Working Capital is determined as per Section 76 of the Tariff Determination Regulation, 2016. It is determined by using the interest on working capital, the Licensee’s revenue, proposed arrears and allowance for inventories. The interest on the working capital shall be the lowest short-term lending rate of financial institution in Bhutan. The Licensee shall propose arrears and allowance for inventories for the tariff period. Both figures shall be reported in the “Input” sheet in the tariff application form/model;
- 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; and
- c. The proposed amount for the inventories shall also be submitted with justifications.

30. The domestic Power Purchase Price (PPP) is determined as per Section 85 of the Tariff Determination Regulation, 2016. The domestic PPP for determination of Average Costs

shall comprise of the weighted average of purchases from domestic generation plants at their Average Costs. The Licensee shall provide the following information:

- (1) 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 in the tariff application form/model; and
- (2) The expected generation from own generation shall be deducted from the total power purchase forecasted by the Licensee.

31. The cost of supply for a Customer Group in a particular year shall be determined as per Section 86 of the Tariff Determination Regulation, 2016. It is determined by the sum of energy purchase cost, valued at the domestic Power Purchase Price, import price, network costs allocated to Customer Group, the cost of Working Capital allocated to that Customer Group less any Non-Tariff Revenue from the Customer Group. The Licensee has to submit the following to determine the cost of supply:

- (1) The import price and the average import volume for the tariff period shall be proposed in the “Input” sheet in the tariff application form/model. 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;
- (2) The Licensee shall propose the forecasted energy sales for LV, MV, HV and Wheeling customers in the “Input” sheet in the tariff application form/model with calculations and assumptions made and the basis for the assumptions reported separately. The Licensee shall submit the historical energy sales figures for LV, MV, HV and wheeling customers for the past ten (10) years;
- (3) The Licensee shall calculate the wheeling forecast by considering the energy generation from Druk Green Power Corporation Limited, Dagachhu Hydro Power Corporation Limited and generation from on-going projects which may be commissioned in the upcoming tariff period;
- (4) The Licensee shall report historical non-tariff revenues and their sources. The historical non-tariff revenue shall be based on audited financial statement. The Licensee shall propose non-tariff revenues for the tariff period supported with calculations such as volumes and prices for each customer group and their sources of the revenue. The non-tariff revenue includes all revenue stemming from sources other than tariffs, such as revenues from rental, fund deposits, deposit works, hire charges, miscellaneous charges etc. All non-tariff revenue that is not directly collected from the LV, MV or HV 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, 2016; and

- (5) The Licensee shall propose losses as per Schedule E of Tariff Determination Regulation, 2016. If the Licensee proposes any other figure for the losses, the proposal shall be supported by justifications and method of calculating losses. The Licensee shall also submit actual historical losses for various customer groups for the last tariff period.
32. The Average Price for a customer group is determined as per Section 87 of the Tariff Determination Regulation, 2016. The average price for a Customer Group is determined as the ratio of the discounted costs of supply for that Customer Group to the discounted energy sales to that Customer Group, where sales are adjusted for an allowance collection rate, and where discounting occurs over the Tariff Period at the WACC applicable to the Customers. The cost of supply and the energy sale is determined and proposed as per Section 86 of the Tariff Determination Regulation, 2016. The collection rate is a target set by the Authority as a percentage as per Schedule E of the Tariff Determination Regulation, 2016.
33. The Licensee shall propose a price path (average tariff in Nu/kWh) per customer group for the tariff period in the “Output” sheet in the tariff application form/model. The price path shall be consistent with the proposed allowances.
34. The Licensee shall provide billing data assumption for the tariff period. The billing data comprises of the energy sales forecast for LV (rural), LV others (Block I, II & III and Bulk), MV (energy demand and energy sales), HV (energy demand and energy sales) and wheeling. The billing data assumptions shall be consistent with the energy sales forecasts in the “Input” sheet in the tariff application form/model. The average tariffs for LV, MV, HV and wheeling 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 in the tariff application form/model.
35. The Licensee shall propose a tariff structure in the “Tariff Structure” sheet as follows:
- (1) LV Tariff structure

The tariff structure for general LV customers shall comprise of only energy charge with progressive blocks and tariff starting with a lifeline block to ensure that the energy is provided at minimal rate for meeting the basic energy requirements. The tariff structure for other LV customers such as commercial, industrial, institutions, street lightings, temporary connections etc. shall consist of single tier energy charge. Any proposed changes to the existing blocks or tariff structure shall be supported by adequate justifications by Licensee.

(2) MV and HV Tariff Structure

The tariff structure for the MV and HV customers shall consist of energy charge (Nu/kWh) and demand charge (Nu/KVA/month).

(3) Wheeling charge

The wheeling charge shall consist of common single charge levied per unit of energy wheeled through the network for export purpose.

**ADDITIONAL INFORMATION REQUIREMENTS**

36. The Licensee shall also submit the following as applicable:

- (1) Profit and Loss Account, Balance Sheet and Cash Flow Statement for the previous tariff period;
- (2) Audit reports of the Royal Audit Authority, Bhutan and the Statutory Auditors for the previous tariff period;
- (3) Explanations for assumptions made for calculations of Miscellaneous Charges and data on the frequency and type of the Miscellaneous Charges paid by different customers during the previous tariff period and projections for the proposed tariff period; and
- (4) Any additional information required by the Authority.

[APPENDIX 1 – Generation tariff application form/model.](#)

[APPENDIX 2 – Transmission and Distribution tariff application form/model.](#)