

BHUTAN ELECTRICITY AUTHORITY



GUIDELINE FOR FILING TARIFF PETITIONS 2022

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INTRODUCTION

This Guideline provides the procedure and submission requirements for filing of Generation, Transmission and Distribution Tariff Petition in line with the Tariff Determination Regulation, 2016.

TITLE AND COMMENCEMENT

1. This Guideline:
 - (1) Be cited as the Guideline for Filing Tariff Petitions 2022; and
 - (2) Come into force with effect from January 2022.

GENERAL GUIDELINES FOR TARIFF Petitions

2. The Licensee shall submit the investment plan for the upcoming tariff period in an electronic form to the Bhutan Electricity Authority, at least nine (9) months prior to the expiry of the current tariff period. The Generation Licensee shall submit the investment plan as per Clause 16-20 and the Transmission and Distribution Licensee as per Clause 31-37 of this Guideline.
3. The Licensee shall submit Tariff Petition for a revised Tariff Schedule along with the complete set of documents in an electronic form to Bhutan Electricity Authority, at least four (4) months prior to the expiry of the current tariff period. Any updates to the investment plan shall be submitted along with the Tariff Petition.
4. The Licensee shall propose a tariff period which shall normally be three years.
5. The Tariff Petition shall consist of the following:
 - (1) Tariff Petition form provided in Annexure I of this Guideline;
 - (2) Detailed write-up on tariff proposal including supporting documents and information mentioned in subsequent provisions;
 - (3) Tariff petition fee specified in the prevailing Schedule 1 of the Regulatory Fees Regulation, 2006; and
 - (4) Audited annual accounts and audit reports of last three years.
6. The Authority shall as soon as possible after receipt of the Tariff Petition either request additional information or confirm in writing to the Licensee that the Tariff Petition is complete in all aspects.

7. The Authority shall publish the Tariff Petition submitted by the Licensee on the Authority website for public viewing. Therefore, the Licensee shall inform the Authority of any information submitted in the Tariff Petition which may reveal business secrets and other sensitive matters to be excluded from being published.
8. The Licensee shall form a Tariff team responsible to provide clarifications or additional information on the Tariff Petition within the date stipulated by the Authority.
9. Any delay in submission of the Tariff Petition or non-submission of information required by the Authority may attract sanctions.

GENERATION TARIFF PETITION

10. The Licensee shall submit Generation Tariff Petition form for each power plant and one consolidated Tariff Petition form for all power plants owned by them.
11. The Licensee shall submit the following details in the “Input sheet” of Generation Tariff petition form provided in Annexure I (A) of this Guideline.

Weighted Average Cost of Capital (WACC) parameters

12. The Licensee shall propose the WACC parameters as follows:
 - (1) The Gearing ratio shall be proposed higher than the approved gearing ratio of previous tariff period till it reaches the optimum ratio of seventy percent (70%) or actual gearing ratio is higher than seventy percent;
 - (2) The Cost of Equity (CoE) shall be calculated as an average of all the long-term lending rates of the domestic financial institutions during the time of submission of the Tariff Petition. The Licensee shall submit the interest rates of all the long-term loans of the domestic financial institutions used to calculate CoE;
 - (3) The Cost of Debt (CoD) shall be the actual cost of debt of the Licensee for the tariff period, as a percentage, calculated as the weighted average interest rate of the Licensee’s loans. The Licensee shall submit all loan agreements; and
 - (4) The Tax shall be the prevailing rate prescribed in the Income Tax Act of the Kingdom of Bhutan, 2001.

Asset

13. The Licensee shall submit Gross asset value, accumulated and annual depreciation, for the reference year as per audited accounts as specified in Schedule A - Assets in the Generation Tariff Petition forming part of Annexure I (A) of this Guideline.
14. The reference year of the tariff period is the last year for which all audited accounts are available.
15. The Licensee shall submit the list of assets received free of cost from Government or Government owned Agency and any assets handed over by the Licensee to other Agency for the past three years.

Investment Plan

16. The Licensee shall submit the investment plans for the upcoming tariff period as specified in Schedule B - Investments in the Generation Tariff Petition forming part of Annexure I (A) of this Guideline.
17. For the individual investments above Ngultrum fifty million (Nu. 50 million), the Licensee shall submit the following information:
 - (1) Name of the project;
 - (2) Background and need for the investment;
 - (3) Annual Capitalization Schedule;
 - (4) Project cost breakdown;
 - (5) Source of funding;
 - (6) Cost benefit analysis;
 - (7) Risk for executing the Project such as risk for completion of each project in the Investment plan and graded as high, medium and low risk with justification;
 - (8) Fulfilment of due process such as planning, study reports, decision making and project approvals and concurrence from the Ministry of Economic Affairs;
 - (9) Current status of the Project (Planning, approval, under construction, clearance, etc);
and
 - (10) Priority ranking of each Project.
18. The Licensee shall not include investment of the subsidiary companies and investments not directly related to licensed activities. .

19. The Licensee shall submit the proposed capitalized amount and actual capitalized amount for the investments in the past three years as per format specified in the Schedule B-Investment of the Generation Tariff Petition forming part of Annexure I (A) in this Guideline.
20. In case of over-capitalization of asset in comparison to Investment Plan reviewed by Authority of the past three years, the Licensee shall submit the justification for such over-capitalization.

Operation and Maintenance Costs

21. The Licensee shall submit the following details for the determination of operation and maintenance cost (O&M) for the upcoming tariff period:
 - (1) The historical O&M Costs for the past three years as per audited accounts;
 - (2) The Corporate Social Responsibility (CSR) expenses, community welfare expenses, donations and other incomes from hiring, rentals and any electricity revenue from staff;
 - (3) The number of employees for the past three years in each power plant and Corporate Office (CO) separately;
 - (4) The remuneration and benefits, and other expenses for employees working for new projects under CO;
 - (5) Annual regulatory fees and charges for the past three years;
 - (6) Average historical inflation rates for the past three years based on the historical average inflation rate published by the National Statistics Bureau of Bhutan. The historical inflation rate for a year shall be calculated by taking the non-food inflation rate for the month of December in that year and the inflation rate for the month of December in the previous year as shown below and same shall be applied for two consecutive years:

$$\text{Inflation rate (2019)} = \frac{\text{Inflation rate of December 2019}}{\text{Inflation rate of December 2018}} - 1$$

- (7) The inflation rate for the past three years computed using above formula and calculate the average inflation rate for the past three years which shall be the proposed inflation rate for the upcoming tariff period;
- (8) The proposed O&M cost determined by using the average O&M cost for past three years adjusted with inflation to arrive at the reference year price level;

- (9) The proposed efficiency gain targets for each year in the tariff period and include justifications for the proposal;
- (10) The Current Replacement Cost (CRC) of the assets in the reference year and the methodology used to calculate the CRC;
- (11) The O&M benchmark based on the benchmark set by the Authority. However, the Licensee may propose changes to the benchmark set by the Authority with adequate justifications. The proposed O&M benchmark for the new investments shall be proposed lower than that of older assets.

Regulatory fees allowances

22. The Licensee shall propose the annual licence fees for the tariff period as specified in the Schedule 1 of the Regulatory Fees Regulation, 2006.

Cost of Working Capital

23. The Licensee shall submit the following details for determination of Cost of Working Capital:
 - (1) The interest on the working capital of all Financial Institutions in Bhutan;
 - (2) The inventories shall be based on percentage of O&M expenses or capital cost based on industrial practice or applicable benchmark with an explanation on the rationale behind the proposed methodology. The licensee shall submit the list of inventories for the past three years; and
 - (3) The arrears in average number of days based on efficient duration of average energy consumption, bill preparation, delivery and payment. The Licensee shall submit the agreement signed between the Generation Licensee and Transmission and Distribution Licensee for the sale and purchase of electrical energy.

System Operator Charges

24. The System Operator Charges payable by Generation Licensee shall be as per the System Operator Charges Regulation 2022.

Energy Volume

25. The Licensee shall submit the following information for determination of Annual energy volume:
- (1) Historical energy generation for past three years of each power plant;
 - (2) Calculated monthly water utilization factor for past three years of each hydropower plant;
 - (3) Actual auxiliary consumption for past three years of each hydropower plant; and
 - (4) Any expected additional energy generation from diversion schemes during the tariff period.

TRANSMISSION AND DISTRIBUTION TARIFF PETITION

26. The Licensee shall provide the following details in the “Input sheet” of Transmission and Distribution Tariff Petition form which is provided in Annexure I (B) of this Guideline.

Weighted Average Cost of Capital (WACC) parameters

27. The Licensee shall propose the WACC parameters separately for each Consumer category as follows:
- (1) The Gearing ratio shall be proposed higher than the approved gearing ratio of previous tariff period till it reaches the optimum ratio of seventy percent (70%) or actual gearing ratio is higher than seventy percent;
 - (2) The Cost of Equity (CoE) shall be calculated as average of all the long-term lending rates of the domestic financial institutions during the time of submission of the Tariff Petition. The Licensee shall submit the interest rates of all the long-term loans of the domestic financial institutions used to calculate CoE;
 - (3) The Cost of Debt (CoD) shall be proposed based on the actual cost of debt for each Consumer category as a percentage. In order to determine the actual CoD for Wheeling, HV, MV and LV Consumer category, the Licensee’s loans and liabilities to the Consumers (energy security deposits) shall be allocated as follows:
 - a) The loans availed for assets and associated costs and proposed investment which are exclusively used by a particular Consumer category shall be allocated to particular Consumer category;
 - b) The loans availed for Transmission and Distribution assets and their associated costs and proposed investment which are meant for joint usage by more than one Consumer category shall be allocated to those Consumer categories based on proposed asset allocation factor; and

- c) The energy security deposits collected from particular Consumer category shall be allocated to particular Consumer category.
- (4) The CoD shall be calculated as weighted average interest rate of total loan balances as of 31st December of each year for each Consumer category;
- (5) The final cost of debt for individual Consumer category shall be the average of cost of debt for the tariff period;
- (6) The Licensee shall submit loan agreements and energy security deposits collected from each Consumer category; and
- (7) The Tax shall be the prevailing rate prescribed in Income Tax Act of the Kingdom of Bhutan, 2001.

Asset

- 28. The Licensee shall submit gross asset value, accumulated and annual depreciation for the reference year as per audited account as specified in Schedule A - Assets in the Transmission and Distribution Tariff Petition form as provided in Annexure I (B) of this Guidelines.
- 29. The reference year of the tariff period is the last year for which audited accounts are available.
- 30. The Licensee shall submit the list of assets received free of cost from Royal Government or Government owned Agency or consumer and any assets handed over by the Licensee to other Agency for the past three years.

Investment plan

- 31. The Licensee shall submit the investment plans for the upcoming tariff period as specified in Schedule B - Investments in the Transmission and Distribution Tariff Petition forming part of Annexure I (B) of this Guideline.
- 32. For individual Transmission investments of Ngultrum fifty million (Nu 50 million) and Distribution investments of Ngultrum ten million (Nu 10 million) and above, the Licensee shall submit the following information:
 - (1) Name of the project;
 - (2) Background and need for the investment;
 - (3) Annual Capitalization Schedule;
 - (4) Project cost breakdown (where applicable);

- (5) Source of funding;
 - (6) Cost benefit analysis (where applicable);
 - (7) Risk for executing the projects (Such as risks for completion of each project in the investment plans and graded as high, medium or low risk with justifications);
 - (8) Fulfilment of due process (where ever applicable such as planning, study reports, decision making and project approvals and clearance from the Ministry); and
 - (9) Priority ranking of each project.
33. The Licensee shall not propose investments not directly related to licensed activities.
 34. The Licensee shall submit the list of on-going major deposit works.
 35. The Licensee shall submit the list of Capital Work in Progress with its cost and year of completion.
 36. The Licensee shall submit the proposed capitalized amount and actual capitalized amount for the investment completed in the past three years as per the format specified in the Schedule B-Investment in the Transmission and Distribution Tariff Petition form.
 37. In case of over-capitalization of asset in comparison to Investment Plan reviewed by Authority of the past three years, the Licensee should submit the justification for such over-capitalization.

Operation and Maintenance Costs

38. The Licensee shall submit the following details for the determination of operation and maintenance cost(O&M):
 - (1) The historical O&M Costs for the past three years as per audited accounts;
 - (2) The Corporate Social Responsibility (CSR) expenses, community welfare expenses and donations, fines and penalties, and O&M contribution from other Agencies and consumers;
 - (3) Annual regulatory fees and charges for the past three years;
 - (4) Average historical inflation rates for the past three years based on the historical inflation rate published by the National Statistics Bureau of Bhutan. The historical inflation rate for a year shall be calculated by taking the non-food inflation rate for

the month of December in that year and the inflation rate for the month of December in the previous year as shown below and same shall be applied for two consecutive years:

$$\text{Inflation rate (2019)} = \frac{\text{Inflation rate of year December 2019}}{\text{Inflation rate of year December 2018}} - 1$$

- (5) The inflation rate for the past three years calculated using above formula and the average inflation rate of the past three years shall be the proposed inflation rate for the upcoming tariff period.
- (6) The proposed O&M cost determined by using the average O&M cost for past three years adjusted with inflation to arrive at the reference year price level;
- (7) The proposed efficiency gain targets for each year in the tariff period and include justifications for the proposal;
- (8) The Current Replacement Cost (CRC) of the assets in the reference year and the methodology used to calculate the CRC; and
- (9) The O&M benchmark based on the benchmark set by the Authority. However, the Licensee may propose changes to the benchmark set by the Authority with adequate justifications. The proposed O&M benchmark for the new investments shall be maintained lower than that of older assets.

Regulatory fees

39. The Licensee shall propose annual licence fees for Transmission and Distribution as per Schedule 1 of the Regulatory Fees Regulation, 2006.

Import Cost

40. The Licensee shall submit the historical energy import for the past three years from West Bengal State Electricity Board (WBSEB) and Assam State Electricity Board (ASEB).
41. The import price and the average import volume from WBSEB and ASEB for the tariff period shall be proposed in the “Input sheet” in the Tariff Petition form.
42. The Licensee shall submit copy of bills raised by WBSEB and ASEB for past three years.

Energy Sales Forecast

43. The Licensee shall propose the energy sales forecast for LV, MV, HV and Wheeling in the “Input sheet” in the Tariff Petition form. The calculations, assumptions and methodology

adopted for energy sale forecast for LV (category wise), MV and HV (Consumer wise) for existing and upcoming industries for the tariff period shall be submitted.

44. The Licensee shall submit the following information:

- (1) Historical energy sales for LV (consumer category wise) for the past ten (10) years;
- (2) Historical energy sales, contract demand and load factor for existing MV and HV Consumers for past three years;
- (3) List of industries to be commissioned in the upcoming tariff period with the location, type, contract demand and the year of drawl of power.

Energy Purchase Forecast

45. Energy purchased from DGPC, MHPA and other Generation Licensees for the past three years.

46. The net energy to be wheeled shall be calculated as sum of average generation of DGPC, MHPA and DHPC and any other hydropower plants schedule to be commissioned during the tariff period after deducting following:

- (1) Transmission and auxiliary losses;
- (2) Energy to be purchased by BPC considering the proposed loss allowances; and
- (3) Energy to be imported

Technical and Commercial losses

47. The Licensee shall propose technical and commercial losses for Wheeling, HV, MV and LV and submit the losses calculation methodology and formula for each Consumer category.

48. The Licensee shall also submit actual historical technical and commercial losses for particular Consumer category of past three years.

49. For the determination of commercial losses, the Licensee shall submit the records of electricity theft cases, collection efficiency and unpaid energy bills for each Consumer category of past three years.

Power Purchase Price

50. The Licensee shall propose domestic Power Purchase Price (PPP) by considering the proposed energy volume and prevailing generation tariffs of DGPC and MHPA.

51. The PPP is determined as weighted average price of generation of existing hydropower plants as of 2015 to the extent that they are able to meet demand followed by next least cost of hydropower generation of the additional plant(s) for meeting the domestic demand with energy to be supplied as weights.

Cost of Working Capital

52. The Licensee shall submit the following details for determination of Cost of Working Capital:
- (1) The interest on the working capital loan of all Financial Institutions in Bhutan;
 - (2) The inventories for each Consumer category which shall be based on percentage of O&M expenses or capital cost based on industrial practice or applicable benchmark with an explanation on the rationale behind the proposed methodology. The Licensee shall submit the list of inventories of past three years; and
 - (3) The arrears in average number of days based on efficient duration of average energy consumption, bill preparation, delivery and payment. The Licensee shall submit the agreement signed between the Generation Licensee and Transmission and Distribution Licensee for the sale and purchase of electrical energy.

Non-Tariff Revenue

53. The Licensee shall submit the historical non-tariff revenues collected from rental, revenue from construction contracts, hire charges, miscellaneous charges, etc. from the LV, MV, HV Consumer, and other agency based on audited account.
54. The Licensee shall propose non-tariff revenues for particular Consumer category for the tariff period.

System Operator Charges

55. The System Operator Charges payable by Transmission and Distribution Licensee shall be as per the System Operator Charges Regulation, 2022.

Allocation Factor

56. The Licensee shall propose allocation factor for the assets and associated costs like operation and maintenance costs, inventories, fees and levies, and loans for Consumer category based on the following along with justification:

- (1) Where assets and associated costs are exclusively used by a particular Consumer category, the same shall be allocated fully to this Consumer category;
- (2) Where assets and associated costs are for export purpose, the entire allocation shall be to the export category;
- (3) Where transmission and distribution assets and their associated costs are meant for joint usage by different Consumers, the allocation factor shall be based on capacity demand; and
- (4) From the above (1), (2), and (3), weighted average allocation factors for all the Consumer categories shall be determined for allocating assets and associated costs that do not fall under the above three items including fees and levies of BEA.

57. The Licensee shall submit following:

- (1) Dzongkhag wise line length with voltage level and peak demand for reference year of each transmission and distribution lines, consumers connected to the transmission and distribution lines with their contract demand; and
- (2) Dzongkhag wise list of substations with peak load for reference year with the details of the HV, MV and LV consumers connected.

Tariff structure

58. The Licensee shall provide billing data assumption for the tariff period. The billing data shall comprise of the energy sales forecast for LV (rural), LV high lander, LV others (Block I, II & III and Bulk), MV (energy demand and energy sales), HV (energy demand and energy sales) and wheeling in the “Tariff Structure sheet” of the Tariff Petition Form. The billing data assumptions shall be consistent with the energy sales forecasts in the “Input sheet” of the Tariff Petition Form.

59. The Licensee shall provide the following details in the “Tariff Structure sheet” of Transmission and Distribution Tariff Petition Form:

- (1) The tariff structure for general LV Consumers shall comprise of single-part tariff 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. Any proposed changes to the existing blocks or tariff structure shall be supported by adequate justifications;
- (2) The tariff structure for the MV and HV Consumers shall consist of two-part tariff: energy charge (Nu/kWh) and demand charge (Nu/KVA/month); and

- (3) The wheeling charge shall consist of single-part tariff levied per unit of energy wheeled for export purpose.

ANNEXURE I: TARIFF PETITION FORMS

A. Generation Tariff Petition Form

A1- Input

Inputs

Name of the Plant	Generation	
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Tariff period	
Reference year:	
Tariff period:	years
Starting in year:	
<i>These are regulatory parameters</i>	

WACC parameters	
Gearing:	
CoE	
CoD	
Tax	
WACC:	0.00%
<i>Set by BEA for the company</i>	

Colour code of inputs		Comment
	Is an input set by BEA	Enter figures from the Tariff Determination Regulation
	In an input provided by the company	Enter figures as per the relevant sections of the guideline
	Is a calculated field.	DO NOT ENTER ANY FIGURES

Int. on working capital	
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Fixed assets	
Asset values:	See Schedule A
Investments:	See Schedule B
INVENTORIES	mill Nu
<i>As reported by the company</i>	

Benchmark O&M	Replacement Cost (2018)	2018	2019	2020	2021	2022	2023	2024
Benchmark:	of capex	Mill Nu	-	-	-	-	-	-
<i>Benchmarks determined by BEA</i>		<i>Estimated by Licensee</i>	<i>Calculated</i>	<i>Calculated based on forecasted investments, Schedule B - Investments</i>				

Historical O&M costs	2016	2017	2018	Average
Nominal costs				-
<i>As reported by the Licensee</i>				

O&M allowance	
7.1 Allowance:	Mill Nu
7.2 Inflation:	
<i>As proposed by the Licensee</i>	

Regulatory fees	2018	2019	2020	2021	2022
Annual Licence Fees:					Mill Nu
<i>As prescribed in the Regulatory Fees Regulations 2006</i>					

Inflation	Rate	Index
<i>Historical data as reported by Licensee</i>		

Design energy:	1	2	3	4	5
ENERGY _i					GWh
<i>Design energy for the power station: Any annual changes based on company forecast</i>					

Average annual energy:	1	2	3	4	5
Average annual energy					GWh
<i>Expected average energy for the power station: Any annual changes based on company forecast</i>					

Royalty Energy Proportion:	
Proportion	of the annual generation from all existing generation plants fully owned by RGoB
<i>Royalty Energy Proportion proposed by Licensee</i>	

Targets	1	2	3	4	5
AUX					
ARREARS (days):					
O&M efficiency gain (%):					

A2- Schedule A-Assets

Asset values as at end 2018						
	Life-time	Gross value	Acc. Dep	Net value	Depreciation	
Land	N/A	-	-	-	0	
Buildings		-	-	-	-	
Permanent	30					
Semi-permanent	30					
Temporary	30					
Civil structures		-	-	-	-	
Walls & fencing	30					
Roads & culverts	30					
Dam complex		-	-	-	-	
Civil	30					
Mechanical	30					
Water conductor		-	-	-	-	
Civil	30					
Mechanical	30					
Power house		-	-	-	-	
Civil	30					
Generator- runners	5					
Plant & machinery	30					
Mechanical	30					
Transmission equipment		-	-	-	-	
HV lines	30					
LV lines	30					
Civil	30					
Sub-station	30					
Meters	10					
Equipment		-	-	-	-	
Vehicles	6.67					
Fire-fighting	10					
R&D equipment	5					
Workshop machinery	6.67					
Loose tools	10					
Boat	10					
Office equipment		-	-	-	-	
Telephone exchange	5					
Office equipment	5					
Furniture & fixtures	10					
Data processing equipment	5					
Other equipment	5					
TOTAL		-	-	-	-	

A3. Schedule B-Investment

Asset additions during year (incl. IDC)		Mill nu				
		2018	2019	2020	2021	2022
Land		-	-	-	-	-
Buildings		-	-	-	-	-
	Permanent	-	-	-	-	-
	Semi-permanent	-	-	-	-	-
	Temporary	-	-	-	-	-
Civil structures		-	-	-	-	-
	Walls & fencing	-	-	-	-	-
	Roads & culverts	-	-	-	-	-
Dam complex		-	-	-	-	-
	Civil	-	-	-	-	-
	Mechanical	-	-	-	-	-
Water conductor		-	-	-	-	-
	Civil	-	-	-	-	-
	Mechanical	-	-	-	-	-
Power house		-	-	-	-	-
	Civil	-	-	-	-	-
	Generator	-	-	-	-	-
	Plant & machinery	-	-	-	-	-
	Mechanical	-	-	-	-	-
Transmission equipment		-	-	-	-	-
	HV lines	-	-	-	-	-
	LV lines	-	-	-	-	-
	Civil	-	-	-	-	-
	Sub-station	-	-	-	-	-
	Meters	-	-	-	-	-
Equipment		-	-	-	-	-
	Vehicles	-	-	-	-	-
	Fire-fighting	-	-	-	-	-
	R&D equipment	-	-	-	-	-
	Workshop machinery	-	-	-	-	-
	Loose tools	-	-	-	-	-
	Boat	-	-	-	-	-
Office equipment		-	-	-	-	-
	Telephone exchange	-	-	-	-	-
	Office equipment	-	-	-	-	-
	Furniture & fixtures	-	-	-	-	-
	Data processing equipment	-	-	-	-	-
	Other equipment	-	-	-	-	-
TOTAL		-	-	-	-	-

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B. Transmission and Distribution Tariff Petition Form. B1.Input Sheet

Inputs

Tariff period	
Data reference year:	2018
Tariff period:	3 years
Starting in year:	2019
<i>As proposed by Licensee</i>	

Colour codes	
	is an input set by BEA
	In an input provided by the company
	is a calculated field

Power purchase prices		
Royalty Price (RP)		Nu/KWh
Additional Price (AP)		Nu/KWh
Average import price (IP)		Nu/KWh
<i>As proposed by Licensee</i>		

Import cost	Volume	Price	Cost
BPC import			
BPC Jaldaka			
DGPC			
Other			
TOTAL			

WACC parameters	
Gearing:	
CoE	
CoD	
Tax	
WACC:	
<i>As determined by BEA</i>	

WACC parameters	Export wheeling	HV	MV	LV
Gearing:				
CoE				
CoD				
Tax				
WACC:				

Int. on Working Capital

Unsubsidized cost

Fixed assets	
Asset values: See Schedule A	
Investments: See Schedule B	
Inventories	Mill Nu
<i>As reported by Licensee</i>	

Granted assets	
Asset values: See Schedule A	
Investments: See Schedule B	
<i>As reported by Licensee</i>	

Benchmark O&M		Replacement Cost (2018)		2018	2019	2020	2021	2022	2022
Microhydel	2.50% of capex	Mill Nu	Mill Nu						
Diesel generation	10.00% of capex	Mill Nu	Mill Nu						
Transmission	1.00% of capex	Mill Nu	Mill Nu						
Distribution	3.00% of capex	Mill Nu	Mill Nu						
Other	2.00% of capex	Mill Nu	Mill Nu						
		Mill Nu							
<i>Benchmarks determined by BEA</i>		<i>Estimated by Licensee</i>		<i>Calculated</i>	<i>Annual increase in O&M Benchmark, mill Nu.</i>				

Historical O&M costs	2016	2017	2018	Average
Generation				
Transmission				
Distribution				
Other				
TOTAL				
Inflation rate				
Inflation index				
<i>Historical O&M reported by Licensee</i>				

O&M allowance	
Generation	0 Mill Nu
Transmission	0 Mill Nu
Distribution	0 Mill Nu
Other	0 Mill Nu
TOTAL	0 Mill Nu
Inflation:	per annum
<i>As proposed by Licensee</i>	

Regulatory fees	2019	2020	2021	2022	2023
Annual Licence Fees:					
<i>As prescribed in the Regulatory Fees Regulations 2006</i>					

Energy sales forecast	2019	2020	2021	2022	2023	Ave
Export wheeled						GWh
HV						GWh
MV						GWh
LV						GWh
TOTAL						GWh
<i>As proposed by Licensee</i>						

Energy flows	2019	2020	2021	2022	2023	Ave
Ex LV system						GWh
Ex MV system						GWh
Ex HV system						GWh
Into HV system						GWh
<i>Calculated</i>						

Energy purchases		2019	2020	2021	2022	2023
Royalty Energy Available		0	0	0		GWh
Own generation						GWh
Imports						GWh
Royalty						GWh
Additional Energy						GWh
Total						GWh

Calculated. Imports reported by Licensee

Losses		2019	2020	2021	2022	2023
Purchase from DGPC		-	-	-		Purc Ex Wh Losses
LV technical losses:						
MV technical losses:						
HV technical losses:						
Commercial losses:						
LV Loss factor:						
MV Loss factor:						
HV Loss factor:						

Losses by voltage level as determined by BEA

Other targets		2019	2020	2021	2022	2023
LV arrears:						days
MV arrears:						days
HV arrears:						days
Wheeling arrears:						days
Collection rate:						
O&M efficiency gain:						

As proposed by Licensee

Non-tariff revenue		2016	2017	2018	2019	2020	2021	2022	2023	2024
LV										
MV										
HV										

As proposed by Licensee

As reported by Licensee

Forecasted by Licensee

0.00000

Subsidy		2019	2020	2021	
LV		-	-	-	Mill Nu
MV		-	-	-	Mill Nu
HV		-	-	-	Mill Nu
TOTAL		-	-	-	Mill Nu

As proposed by Licensee

Allocation factors	
Asset allocation factors	See Schedule A

As determined by BEA in Schedule F of the Tariff Determination Regulation

O&M allocation factors		Export	HV	MV	LV
Generation					
Transmission					
Distribution					
Other					

As determined by BEA in Schedule F of the Tariff Determination Regulation

Other allocation factors		Export	HV	MV	LV
Inventory allocations					
Fees allocation					

As determined by BEA in Schedule F of the Tariff Determination Regulation

B2. Schedule A-Assets

Asset values as at end 2018						
NON-GRANTED ASSETS	Schedule A - Assets	Life-time	Gross value	Acc. Dep	Net value	Depreciation
		Buildings & land		-	-	-
	Land	N/A				
	Buildings	30				
	Civil structures	30				
	Generation		-	-	-	-
	Civil structures	30				
	Electro-mechanical	30				
	Mini & micro hydel	20				
	Diesel generator sets	20				
	Transmission		-	-	-	-
	Civil structures	30				
	400+ kV lines	30				
	220 kV lines	30				
	132 kV lines	30				
	66 kV lines	30				
	Substations	30				
	Meters	10				
	Distribution		-	-	-	-
	Civil structures	30				
	33 kV lines	30				
	11 kV lines	30				
	6.6 kV lines	30				
	LV lines	30				
	Substations & transformers	30				
	Meters	10				
	Vehicles		-	-	-	-
	Heavy vehicles	6.67				
	Light vehicles	6.67				
	Tx Smartgrid Hardware	7.5				
	Tx Smartgrid software	5				
	Office equipment		-	-	-	-
	Computers & accessories	5				
	Printers	5				
	Dx Smart Grid Hardware	8				
	Dx Smart Grid Software	5				
	Software	5				
	Telecomms	5				
	Other office equipment	5				
	Furniture & fixtures	10				
	Tools		-	-	-	-
	Tools & plants	10				
	Firefighting equipment	10				
	Electrical equipment	10				
	TOTAL		-	-	-	-

B3. Schedule B-Investments

Asset additions during year (incl. IDC)		Mill nu				
Schedule B		2018	2019	2020	2021	2022
NON-GRANTED ASSETS	Buildings & land	-	-	-	-	-
	Land					
	Buildings					
	Civil structures					
	Generation	-	-	-	-	-
	Civil structures					
	Electro-mechanical					
	Mini & micro hydel					
	Diesel generator sets					
	Transmission	-	-	-	-	-
	Civil structures					
	400+ kV lines					
	220 kV lines					
	132 kV lines					
	66 kV lines					
	Substations					
	Meters					
	Distribution	-	-	-	-	-
	Civil structures					
	33 kV lines					
11 kV lines						
6.6 kV lines						
LV lines						
Substations & transformers						
Meters						
Vehicles	-	-	-	-	-	
Heavy vehicles						
Light vehicles						
Tx Smartgrid Hardware						
Tx Smartgrid software						
Office equipment	-	-	-	-	-	
Computers & accessories						
Printers						
Dx Smart Grid Hardware						
Dx Smart Grid Software						
Software						
Telecomms						
Other office equipment						
Furniture & fixtures						
TOTAL	-	-	-	-	-	

B4.Tariff Structure Shee

Billing data		2019/20	2020/21	2021/22
LV	Cust nos.			
Block I	0-100(Rural)			
Block I	0-200(Highlanders)			
Block II	0-100(Others)			
Block III	101-500(All)			
	>500(All)			
	Total			
	LV bulk			
	LV total			
MV	GWh			
	MVA			
HV	GWh			
	MVA			
Wheeling	GWh			

Table A

Tariff structures		2018/19	2019/20	2020/21	2021/22
LV					
Block I	0-100(Rural)				
Block I	0-200(Highlanders)				
Block II	0-100(Others)				
Block III	101-500(All)				
	>500(All)				
LV Bulk	Energy				
MV	Nu/kWh				
	Nu/kVA				
HV	Nu/kWh				
	Nu/kVA				
Wheeling	Nu/kWh				

Table B

		Annual Tariff			Levelized Tariff		
		2019/20	2020/21	2021/22	Unsub	Subsidized	Subsidy
Average tariffs	LV						
	MV						
	HV						
	Wheeling						
		5.15	5.15	5.15			

Table C

NPV of revenues		Output	Structure	Diff	Subsidies		
		2019/20	2020/21	2021/22	2019/20	2020/21	2021/22
	LV						
	MV						
	HV						
	Wheeling						
Total							