

**APR for FY 2021-22**  
**&**  
**ARR & Tariff Proposal for the**  
**FY 2022-23**

Submitted by:  
Department of Power  
Government of Nagaland

April, 2022

**BEFORE THE HON'BLE NAGALAND ELECTRICITY REGULATORY COMMISSION**

Filing No:

Case No:

IN THE MATTER OF:

Petition For Annual Performance Review of FY 2021-22 and Aggregate Revenue Requirement (ARR) & Tariff Proposal for FY 2022-23 of Department of Power, Govt. of Nagaland

AND IN THE MATTER OF:

Department of Power, Govt. of Nagaland, Electricity House, Kohima – 797 001, Nagaland  
**PETITIONER**

PETITIONER, UNDER SECTIONS 45, 46, 61, 62 AND 64 OF THE ELECTRICITY ACT, 2003 FILES FOR INITIATION OF PROCEEDINGS BY THE HON'BLE COMMISSION FOR DECIDING ON THE MATTERS CONCERNING THE APPROVAL OF THE ANNUAL PERFORMANCE REVIEW FOR FY 2021-22 AND TARIFF PETITION OF CHANDIGARH ELECTRICITY DEPARTMENT FOR FY 2022-23

The applicant respectfully submits hereunder:

- 1) The Petitioner, the Department of Power, Govt. of Nagaland (DPN) has been allowed to function as an integrated Distribution licensee for the license area of Nagaland.
- 2) Pursuant to the enactment of the Electricity Act, 2003, DPN is required to submit its Annual Revenue Requirement (ARR) and Tariff Petitions as per the procedures outlined in section 61, 62 & 64 of EA 2003, and the governing regulations thereof.
- 3) DPN has submitted its petition for determination of Annual Revenue Requirement and tariff proposal for FY 2022-23 on the basis of the principles outlined in the MYT Tariff Regulations 2014 notified by the Hon'ble Commission.
- 4) This petition includes the Review Petition for FY 2021-22 and ARR & Tariff Petition for FY 2022-23.
- 5) DPN shall further make available the additional/ supplementary data & information to the extent available with DPN as may be required by the Hon'ble Commission during its processing.

### **Prayers to the Commission**

DPN respectfully prays that the Hon'ble Commission may

- a. Examine the proposal submitted by the Petitioner for a favorable dispensation as detailed in the enclosed proposal;
- b. Consider the submissions and allow revised estimate for FY 2021-22 and approve Aggregate Revenue Requirement and Retail Tariff for DPN for FY 2022-23;
- c. Approve the revenue gap and appropriate tariff increase as detailed in the enclosed proposal;
- d. Pass suitable orders for implementation of the tariff proposals for the FY 2022-23.
- e. Approve the terms and conditions of Tariff Schedules and various other matters as and the proposed changes therein;
- f. Condone any inadvertent omissions/ errors/ shortcomings and permit DPN to add/ change/ modify / alter this filing and make further submissions as may be required at a future date;
- g. Pass such orders as the Hon'ble Commission may deem fit and proper, keeping in view the facts and circumstances of the case;

Department of Power, Govt. of Nagaland

Petitioner

Place: Kohima.  
Date: .....04.2022.

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## Chapter 1: Introduction and Background

### Department of Power, Government of Nagaland

The Department of Power of The State of Nagaland is responsible for power supply in the state of Nagaland. DPN has generation capacity of 24 MW of its own. Apart from this, the entire power requirements for DPN are met through its share from Central Sector Power generation, which is wheeled through the PGCIL network of North Eastern region and power purchases from electricity traders/ other sources.

The total area of the territory is 16,527 sq. kms. The State of Nagaland is having a population of around 19.81 lacs as per 2011 census spread over towns and villages. The State of Nagaland is located on 438 kms from Guwahati. The present demand for Nagaland is being met mainly by power from various central generating stations, and Likimro Hydro Electric Project. DPN has 3,03,440 consumers with an annual energy consumption of about 641.59 MUs for the FY 2020-2021. These consumers can be broadly classified into following five categories:

- Domestic
- Commercial
- Industrial both HT & LT
- Bulk
- Others -Public lighting, water works, Agricultural etc.

The Department of Power of Government of Nagaland hereinafter called "DPN", a deemed licensee under section 14 of the Electricity Act 2003, is carrying out the business of transmission, distribution and retail supply of electricity in the state of Nagaland. The Department of Power, Nagaland (DPN) has been allowed to function as an integrated distribution licensee of State of Nagaland. The Department of Power doesn't have its own generation except for 24 MW Likimro Hydro Electric Project and procures power from its allocation from central generating stations NTPC, NHPC, NEEPCO OTPC etc. The remaining is met through short term purchase under bilateral transactions and power exchange.

All the divisions of Nagaland are electrified and any desiring consumer can avail power supply by submitting requisition in the prescribed form to the appropriate office of the Department subject to fulfilment of the requisite conditions and payment of charges.

DPN has updated the Proforma Accounts up-to FY 2018-19. The Proforma Accounts has been audited by AG up-to FY 2014-15. DPN has updated its Fixed Asset Register upto 31.03.2020. True-up has been done till FY 2014-15. DPN shall submit the true-up for subsequent years after the accounts are audited. Hon'ble Commission may kindly allow the same.

## Filing of Multi Year Tariff Petition and Annual Performance Review Petition

The Nagaland Electricity Regulatory Commission (NERC), in exercise of powers conferred by sub section (1) of section 181 and clauses (zd), (ze) and (zf) of sub section (2) of section 181, read with sections 61, 62, 83 and 86, of the Electricity Act 2003 (36 of 2003) and all other powers enabling it in this behalf, has issued the NERC (Multi Year Tariff) Regulations, 2016, hereinafter referred to as "MYT Regulations".

As per the Regulations, the Distribution Licensee were required to file a Business Plan & Tariff Petition for Control Period of five financial years from April 1, 2020 to March 31, 2025, which shall comprise but not be limited to detailed category-wise sales and demand projections, power procurement plan, capital investment plan, financing plan and physical targets before the Hon'ble Commission as part of the Tariff Filing before the beginning of the Control Period.

Accordingly, the Department of Power, Nagaland had filed a Business Plan & Tariff Petition for approval of Annual Revenue Requirement for MYT Control period FY21 to FY25 and determination of retail tariff for FY21 in accordance to the principles laid down under section 61, 62 and 64 of the Electricity Act 2003, NERC MYT Regulations 2016, provisions of National Electricity Policy & National Tariff Policy, NERC (Conduct of Business) regulations 2010 and other relevant regulations. The Hon'ble Commission in its order dated 20.03.2020 approved the Business Plan & Annual Revenue Requirement for FY 2020-21 to FY 2024-25 and retail tariff for FY 2020-21.

As per the multi-year framework outlined in MYT Regulations 2016, the licensee is required to file Annual Performance Review petition in the subsequent years of the Control Period along with True-up of previous year and Retail Tariff proposal for ensuing year. However, the Proforma Accounts for the FY 2020-21 is yet to be finalised & audited by AG. Hence, the True-up for the FY 2020-21 is not submitted. Accordingly, Department of Power is filing the instant petition for approval of Annual Performance Review for the FY 2021-22 and retail tariff proposal for the FY 2022-23.

## Chapter 2: Review of ARR for FY 2021-22

The Nagaland Electricity Regulatory Commission had notified the Multi Year Distribution Tariff Regulations, 2016 (MYT Regulations).

DPN had filed a Business plan for the period of FY 2020-21 to FY 2024-25 along with requisite details as provided in NERC (Multi-Year Tariff) Regulations 2016. The Hon'ble Commission in the MYT Order dated 20-03-2020 had approved ARR for the Control Period of FY 2020-21 to FY 2024-25 as per the MYT Regulations 2016.

Regulation 5.2 (b) of the MYT Regulations 2016 states the following:

*“From the first year of the Control Period and onwards, the Petition shall comprise of:*

- i) Truing Up for previous years under Nagaland Electricity Regulatory Commission(Terms and Conditions for Determination of Tariff) Regulations, 2010 Annual Performance Review for current year in accordance with these Regulations;*
- ii) Revenue from the sale of power at existing tariffs and charges for the ensuing year;*
- iii) Revenue gap for the ensuing year calculated based on ARR approved in the Tariff Order or MYT Order and truing up for the previous year;*
- iv) Application for revision of tariff for the ensuing year.”*

The petitioner is hereby filing annual performance review for FY 2021-22 as per the MYT framework and request the Hon'ble Commission to consider the revision in parameters based on the 6 months actual figures and balance six months estimates.

### Energy sales and Connected Load

The sales for the FY 2021-22 has been estimated based on CAGR of actual sales for the FY 2014-15 to FY 2019-20. The CAGR for past five/three/two/one-year growth have been applied appropriately on the actual sales for the FY 2020-21 to arrive at the estimated sales for the FY 2021-22. The calculation of five/three/two/one-year CAGR is provided at Table 15 & 16 of this petition. The approved and estimated sales for FY 2021-22 is given in the table below:



Table 1: Energy sales for FY 2021-22 (MUs)

S. No.	Categories	Approved in MYT.O. dated 20th March 2020	Estimated for FY 2021-22
1	Domestic including BPL	410.74	407.46
2	Commercial	107.72	105.37
3	Industrial	68.95	46.84
4	Public Lighting	15.41	0.97
5	Public Water Works	12.64	0.42
6	Irrigation & Agriculture	0.02	0.02
7	Bulk Supply	107.24	105.66
	<b>Total Sale ( Within the State)</b>		<b>666.73</b>
8	Outside State Sale		26.04
	<b>Grand Total</b>	<b>722.73</b>	<b>692.77</b>

The details of estimated Post Paid & Prepaid sales is provided in the tables below:

Table 1a: Energy sales (Post-paid) for FY 2021-22 (MUs)

S. No.	Categories	Estimated for FY 2021-22
1	Domestic including BPL	401.95
2	Commercial	97.66
3	Industrial	46.44
4	Public Lighting	0.97
5	Public Water Works	0.42
6	Irrigation & Agriculture	0.02
7	Bulk Supply	105.65
	<b>Grand Total</b>	<b>653.12</b>

Table 1: Energy sales (Prepaid) for FY 2021-22 (MUs)

S. No.	Categories	Estimated for FY 2021-22
1	Domestic	5.51
2	Commercial	7.70
3	Industrial	0.40
4	Bulk Supply	0.01
	<b>Grand Total</b>	<b>13.62</b>

It is submitted that the Hon'ble Commission may kindly consider and approve the revised estimates of sales for the FY 2021-22.

### Intra-state T&D Losses

As per the Tariff Order dated 20-03-2020 the T&D loss as approved by the Commission for FY 2021-22 is 23.50% ( 20.50% distribution loss & 3% intra-state transmission loss).While DPN is dedicated for reducing the intra-state T&D losses in the state and targeting to achieving the T&D trajectory set by the Hon'ble Commission it requests the Hon'ble Commission to consider the geographical & topographical condition of the state for setting reasonable loss reduction target for the FY 2021-22.

One of the primary reasons of stagnation in losses is the dominance of domestic category in the sales mix. In spite of an increase in overall sale, maximum increase in sales have happened in the domestic category resulting in a higher proportion of the overall sales as compared to industrial consumers where the sales have remained stagnant leading to a reduction in overall share.

It is submitted to the Hon'ble Commission that T&D reduction is difficult because of topographical conditions apart from the fact that maximum in demand is to domestic category and the scope for addition of HT consumers is limited or negligible. As a result the sales to such categories is generally restricted leading to stagnation of T&D losses.

With sales mostly to LT consumers, DPN feels that further reduction in the T&D loss in the state shall be possible after implementation of its various IT/strengthening schemes.

In view of the above, DPN has considered T&D loss of 24.11% (21.11% distribution loss & 3% intra-state transmission loss).it is submitted that the Hon'ble Commission may kindly consider & revise the loss target to a level as proposed under the circumstances detailed above.

## Energy Requirement

For computation of energy requirement, DPN has estimated inter-state transmission losses as approved in the tariff order for the FY 2021-22.

The revised energy balance for FY 2021-22 is as given in the table below, the Hon'ble Commission is requested to approve the same:

Table 2: Energy Balance for FY 2021-22

Energy Available	Approved in MYT.O. dated 20th March 2020	FY 2021-22
Energy Sales with the State	722.73	666.73
Distribution Loss %	20.50	21.11
Distribution Loss (MUs)	<b>186.36</b>	<b>178.44</b>
Total Energy Requirement	909.09	845.17
<b>Energy Availability</b>		
Own Generation	91.00	65.85
Power from ER	93.50	92.49
ER Total Loss (%)	2.26	2.26
Regional Loss (MUs)	2.11	2.09
Net Energy from ER (MU's)	91.39	<b>90.40</b>
Power from NER	618.25	733.81
Total Power purchased	709.63	<b>824.20</b>
NER Tr. Loss %	2.66	2.66
NER Tr. Loss	18.88	21.92
<b>Net Energy Available</b>	<b>690.76</b>	<b>802.28</b>
Add: Over Drawn/Shortterm	155.44	23.32
Add: Banking (Import)	0.00	21.98
Less: Out side state sale	0.00	26.04
Less: Banking (Export)	0.00	16.09
<b>Total Energy Available at state periphery</b>	<b>937.20</b>	<b>871.31</b>
<b>Intra State Tr. Loss @3%</b>	<b>28.12</b>	<b>26.14</b>
<b>Net Energy available for Sale</b>	<b>909.09</b>	<b>845.17</b>
<b>Demand Supply (Gap) / Surplus</b>	<b>0.00</b>	<b>0.00</b>

## Power Purchase Quantum and Cost

The Petitioner submits that it procures power from various sources from:

- Central Generating Stations (CGS) such as that of NTPC, NHPC , OTPC and NEEPCO
- Other Sources such as bilateral agreement, banking arrangement, power exchange, UI etc.

For the purpose of review of FY 2021-22 power purchase quantum, DPN has considered actual power availability from April,21 to February,22 from various sources including short- term sources and estimated availability for March,22.

Shortfall in power from allocations, if any, based on the estimated sales and losses for FY 2021-22 has been considered to be procured from short term sources i.e. power exchange, other trading sources.

DPN is also required to procure power from renewable sources for meeting the RPO as per the renewable regulations. It is submitted that DPN procures power from its own generating station – Likhimro HEP to meet the Non-Solar RPO. However, with regard to Solar RPO, it is submitted that DPN does not have tied up sources of solar power as on date . However, new solar projects in the state are being developed and procurement from these sources shall help DPN meet the Solar RPO requirement. In view of the above, it is requested that the Commission may allow DPN to meet the Solar & Non-solar RPO through Non-Solar sources. Further, gaps may be allowed to be carried forward to be met in future years when solar sources are commissioned.

The power purchase cost for FY 2021-22 is computed based on the actual units & cost for the period April,21 to February,22 & estimated units to be procured from the generating stations as per the allocations for March,22.

- a. The fixed cost for each plant is computed based upon the plant wise actual fixed charges for the FY 2021-22 ( Upto,February,22).
- b. The variable charge for the thermal plants has been considered based on the actual variable charge for the FY 2021-22 (Upto February, 22).
- d. The generation units available from thermal plants & hydel plants are computed considering the actual power available during the FY 2021-22 (Upto February,22 & estimated for March, 22).

- e. The deficit in energy is proposed to be met through short term power.
- f. PGCIL, NRLDC and reactive Energy charges are computed based upon actual expenditure for FY 2021-22 (actual up to February,22 & estimated for March,22).

Based on the actual power purchase cost up to February,22 & estimate for March,22, the revised estimation of annual power purchase units and cost is summarized in the table below:

Table 3: Estimated Power Purchase Quantum and Cost for FY 2021-22

Particulars	Approved in MYT.O. dated 20th March 2020		Estimated for FY 2021-22		
	Units (in MUs)	Cost (in Rs. Cr.)	Units (in MUs)	Cost (in Rs. Cr.)	
<b>NEEPCO</b>					
Khandang	16.75	4.28	17.76	116.02	
Koppili - I	63.34	7.61	-		
Koppili - II	6.31	1.64	0.64		
Ranganadi	73.94	26.74	59.85		
Pare HEP	41.63	22.59	22.55		
Kameng			37.41		
Doyang	15.48	8.84	5.63		
Free Power	31.19		11.39		
<b>NEEPCO - Gas Based</b>					
AGBPP	79.62	41.43	98.57		
AGTPP	34.22	21.05	51.72		
<b>NHPC</b>					
Loktak	55.04	19.34	25.33		10.86
<b>NTPC</b>					
Farakka	40.79	19.20	41.86	171.43	
Kahalgaon	23.52	10.01	23.27		
Talcher	29.19	8.88	27.36		
BGTPP	69.64	66.41	218.73		
<b>ONGCTPC</b>					
PALATANA	131.09	48.79	184.24	52.27	
<b>OTHER</b>					
DEVIATION/SHORTTERM	155.44	41.58	45.30	6.82	
<b>Total</b>	<b>867.19</b>	<b>348.41</b>	<b>871.59</b>	<b>357.40</b>	
<b>REC Purchase</b>		<b>7.19</b>			
Other Charges				1.81	
<b>Total power purchase</b>	<b>867.19</b>	<b>355.60</b>	<b>871.59</b>	<b>359.21</b>	
PGCIL- Transmission Charges		44.49		88.29	
NERLDC/NERPC Charges		0.56		0.62	
<b>Grand Total</b>	<b>867.19</b>	<b>400.65</b>	<b>871.59</b>	<b>448.12</b>	

In view of above, DPN proposes total power purchase units of 871.59 MUs and power purchase cost of Rs. 448.12 Crores for the FY 2021-22.

The Hon'ble Commission may kindly consider the above submissions and approve the power purchase units & cost as proposed.

## Cost of Generation

DPN has it's won 24 MW Likimro HEP. The cost of generation approved by the Hon'ble Commission and revised estimates for the FY 2021-22 is provided below. Hon'ble Commission may kindly consider and approve the same.

*Table 4: Approved and Estimated Cost of Generation for FY 2021-22 (Rs Crores)*

Particulars	Approved in MYT.O. dated 20th March 2020	Estimated for FY 2021-22
Cost of Generation	18.50	11.82

## Operations and Maintenance Expenses

Operation & Maintenance Expenses consists of three elements viz Employee Expenses, A&G Expenses and R&M Expenses. As per the MYT Regulations, O&M expenses shall be treated as controllable parameter and shall not be revised except those attributable to directions of the Hon'ble Commission.

DPN has estimated the Employee Expenses, A&G Expenses and R&M Expenses for the FY 2021-22 based on the actual for the period April, 2021 to March, 2022.

Based on the above, the figures of various heads under O&M expenses for the FY 2021-22 is provided in the table below along with the respective approved expenses:

Table 5: Approved and Estimated O&amp;M Expenses for FY 2021-22 (Rs Crores)

Particulars	Approved in MYT.O. dated 20th March 2020	Estimated for FY 2021-22
Employee Expenses	134.71	139.35
R&M Expenses	35.50	30.63
A&G Expenses	3.88	3.57
<b>Total O&amp;M Expenses</b>	<b>174.09</b>	<b>173.55</b>

The Hon'ble Commission is requested to consider and approve the total O&M expenses as computed in the table above.

## Capital Expenditure and Capitalization

The Hon'ble Commission had approved a capital expenditure of Rs. 100.00 Crores for FY 2021-22. DPN plans to meet the approved capital expenditure during the financial year.

## GFA and Depreciation

DPN has considered the opening GFA of Rs. 1249.40 Crores for the FY 2020-21 and considered the actual additions of Rs. 100.00 Crores during the year to arrive at the opening GFA of Rs. 1,349.40 Crores for the FY 2021-22.

For the FY 2021-22, approved capitalization as per the MYT Order has been considered and any variation shall be submitted at the time of truing-up for the year.

DPN requests the Hon'ble Commission to approve the fixed assets in the table below:

Table 6: Approved and Estimated Assets Addition for FY 2021-22 (Rs Crores)

Particulars	Approved in MYT.O. dated 20th March 2020	Estimated for FY 2021-22
Opening GFA	3,228.59	1,349.40
Asset Capitalized	100.00	100.00
Closing GFA	3,328.59	1,449.40

The petitioner submits that it has initiated activities with respect to the preparation/up-dation of Fixed Asset Register for the FY 2020-21 and request the Hon'ble Commission to approve the same as and when they are prepared.

Depreciation has been calculated on the basis of the opening GFA & proposed additions during the FY 2021-22 at the rate prescribed in the MYT Regulations. The approved and revised depreciation for FY 2021-22 is provided below:

*Table 7: Approved and Estimated Depreciation for FY 2021-22 (Rs Crores)*

Particulars	Approved in MYT.O. dated 20th March 2020	Estimated for FY 2021-22
Opening Assets at the Beginning of the year	3,228.59	1,349.40
Addition of assets during the year	100.00	100.00
Gross Fixed assets at the end of the year	3,328.59	1,449.40
<b>Depreciation for the year</b>	<b>146.74</b>	<b>60.22</b>

## Interest on Loan

It is submitted that the entire capital employed has been funded through infusion of funds by Government of Nagaland through budgetary support without any external borrowings on part of the DPN. As such, the DPN has not considered interest on loan for the FY 2021-22.

## Interest on Working Capital

As per clause 29.4 of NERC MYT Regulations 2016 the working capital of a licensee shall consist of -

- a. Operation and maintenance expenses for one month; plus
- b. Maintenance spares at one (1) per cent of the historical cost escalated at 6% from the date of commercial operation; plus
- c. Receivables equivalent to one (1) month of the expected revenue from sale of electricity at the prevailing tariffs; minus
- d. Amount held as security deposits under clause (a) and clause (b) of sub-section (1) of Section 47 of the Act from consumers except the security deposits held in the form of Bank Guarantees;



The SBI Advance rate as on 1<sup>st</sup> April, 2021 (current applicable rate) of 12.20% is considered for computation of interest on working capital.

In this regard it is submitted that the entire operating expenses of the Department is provided by the Government of Nagaland without any external borrowings toward working capital. Hence, DPN does not have any working capital loan. As such, the DPN has not claimed interest on Working Capital for the FY 2021-22.

## Return on Equity

Regulation 26 of MYT Regulations 2016 provides for Return on Equity (RoE) as follows:

*“Return on equity shall be computed on the paid up equity capital determined in accordance with Regulation 22 relating to the Generating Company or Transmission Licensee or Distribution Licensee as the case may be and shall be allowed at the rate of 15.5% for Generating Companies, including hydro generation stations above 25 MW, Transmission Licensee, and Distribution Licensee”*

It is submitted that the entire capital employed has been funded through infusion of funds by Government of Nagaland through budgetary support. There is no paid up equity capital nor DPN is paying any return on equity to the Government of Nagaland. In view of the above, the DPN has not claimed Return on Equity for the FY 2021-22.

## Provision for Bad and Doubtful Debt

Regulation 89.8 of NERC MYT Regulations, 2016 provides as follows:

*“ The Commission may allow bad debts written off as a pass through in the aggregate revenue requirement, subject to prudence check.”*

DPN proposes to claim the Bad debt after the Annual Accounts for the year are finalised and audited. Hence, the same shall be claimed at the time of True-up for the FY 2021-22. Hon'ble Commission may allow the same.

## Non-Tariff Income

DPN is not proposing any revision in the Non-Tariff Income approved for the FY 2021-22. The actual shall be submitted for true-up along with the audited accounts. Hon'ble Commission may kindly consider the same.

Table 8: Approved and estimated Non-Tariff Income for FY 2021-22 (Rs Crores)

Particulars	Approved in MYT.O. dated 20th March 2020	Estimated for FY 2021- 22
Non-Tariff Income	13.91	13.91

## Revenue on Current Tariff

The revised estimation of revenue based on the estimated sales and approved tariff for FY 2021-22 is provided in the table below:

Table 9: Approved and Estimated Revenue on Existing Tariff for FY 2021-22 (Rs Crores)

S. No.	Category / Slab of Consumers	Approved in MYT.O. dated 20th March 2020	Estimated for FY 2021-22
1	Domestic	126.19	138.64
2	Industrial	38.48	30.08
3	Bulk Supply	63.45	69.73
4	Commercial	70.52	76.95
5	Public water works & sewage	7.59	0.29
6	Public Lighting	4.38	2.81
7	Agriculture	0.01	0.01
8	Single Point Metered Rural	68.2	71.31
9	Single Point Metered Urban	11.14	11.01
10	<b>Total ( Within the State)</b>	<b>389.96</b>	<b>400.83</b>
11	Outside state sale	0.00	17.56
12	<b>Total Sale</b>	<b>389.96</b>	<b>418.39</b>

The details of estimated Post Paid & Prepaid revenue is provided in the tables below:

Table 9a: Approved and Estimated Revenue on Existing Tariff (Post-paid) for FY 2021-22 (Rs Crores)

S. No.	Category / Slab of Consumers	Estimated for FY 2021-22
1	Domestic	135.80
2	Industrial	29.84
3	Bulk Supply	69.73
4	Commercial	71.17
5	Public water works & sewage	0.29
6	Public Lighting	2.81
7	Agriculture	0.01
8	Single Point Metered Rural	71.31
9	Single Point Metered Urban	11.01
10	<b>Total</b>	<b>391.98</b>

Table 9b: Approved and Estimated Revenue on Existing Tariff (Prepaid) for FY 2021-22 (Rs Crores)

S. No.	Category / Slab of Consumers	Estimated for FY 2021-22
1	Domestic	2.84
2	Industrial	0.24
3	Bulk Supply	0.00
4	Commercial	5.78
5	<b>Total Sale</b>	<b>8.86</b>

## Estimated Aggregate Revenue Requirement and Gap for FY 2021-22

Based on the revised ARR and revenue projection, the revenue deficit for FY 2021-22 shall be as below:

Table 10: Estimated Aggregate Revenue Requirement and Surplus for the FY 2021-22 (Rs Crores)

S. No.	Particulars	Approved in MYT.O. dated 20th March 2020		Estimated for FY 2021-22	
1	Cost of power purchase	355.60		359.21	
2	Transmission charges	45.04		88.91	
3	Total cost of power purchase (1+2)		400.64		448.12
4	Cost of Generation		18.50		11.82
5	Employee Expenses	134.71		139.35	
6	Repair & Maintenance Expenses	35.50		30.63	
7	Administration & General Expenses	3.88		3.57	
8	Total O & M Expenses (5+6+7)		174.09		173.55
9	Interest and finance charges				
10	Depreciation		146.74		60.22
11	Interest on working capital		11.39		0.00
12	Return on Equity		-		-
<b>13</b>	<b>Total Revenue Requirement (3+4+8+9+10+11+12)</b>		<b>751.35</b>		<b>693.70</b>
14	Less: Non-Tariff Income		13.91		13.91
<b>15</b>	<b>Net Revenue Requirement (13-14)</b>		<b>737.44</b>		<b>679.79</b>
16	Revenue from Sales		389.96		418.39
17	Revenue Subsidy- Govt. of Nagaland				173.55
<b>18</b>	<b>Revenue Surplus/(Gap) for the Year (16+17- 15)</b>		<b>(347.48)</b>		<b>(87.85)</b>

**The revenue deficit determined for the FY 2021-22 amounts to Rs. 87.85 Crores and the Hon'ble Commission is requested to approve the same. This revenue deficit has not been carried forward as the same has been funded as budgetary support from the Govt. of Nagaland.**

## **Chapter 3: Approval of the various ARR Components for FY 2022-23**

The Hon'ble Commission in the MYT Order had approved ARR for the Control Period FY 2020-21 to FY 2024-25 as per the NERC MYT Regulations, 2016.

The petitioner is hereby filing the review of ARR for FY 2022-23 and Tariff Proposal for the year based on the changes in uncontrollable parameters i.e. sales, power purchase, etc. as per the MYT framework and request the Hon'ble Commission to consider the revision in the ARR based on the actual of FY 2020-21 and estimated for FY 2021-22. The section below covers each parameter in detail along with justification for revision.

### **Revised Projections for Number of Consumers, Connected Load and Energy sales**

The number of consumers, connected load & energy sales for the FY 2022-23 has been projected based on CAGR of actual figures for the FY 2014-15 to FY 2019-20. The CAGR for past five/three/two/one-year growth have been applied year over year appropriately on the actual figures for the FY 2020-21 to arrive at the projected number of consumers, connected load & Energy sales for the FY 2022-23. The calculation of CAGR & revised projection of number of consumers, connected load & energy sales is provided in Tables below.

Table 11: Calculation of CAGR for Number of consumers

S. No.	Categories	FY15	FY16	FY17	FY18	FY19	FY20	CAGR for 5 Years	CAGR for 3 Years	CAGR for 1 Years
1	Domestic including BPL	2,09,019	2,42,270	2,51,173	2,58,429	2,68,719	2,68,954	5.17%	2.31%	0.09%
2	Commercial	19,181	19,846	21,968	22,071	22,194	23,295	3.96%	1.97%	4.96%
3	Industrial	2,604	2,896	4,677	4,690	4,729	4,729	12.67%	0.37%	0.00%
4	Public Lighting	600	600	621	621	621	621	0.69%	0.00%	0.00%
5	Public Water Works	30	30	34	38	38	38	4.84%	3.78%	0.00%
6	Irrigation & Agriculture	1	1	1	1	1	1	0.00%	0.00%	0.00%
7	Bulk Supply	775	1,050	1,500	1,522	1,962	2,186	23.05%	13.38%	11.42%
<b>8</b>	<b>Total</b>	<b>2,32,210</b>	<b>2,66,693</b>	<b>2,79,974</b>	<b>2,87,372</b>	<b>2,98,264</b>	<b>2,99,824</b>			

Table 12: Category wise Number of Consumers considered for FY 22-23

S. No.	Categories	20-21 (Actual)	CAGR Used	21-22 (Est.)	22-23 (Proj.)
1	Domestic including BPL	2,71,033	5.17%	2,85,050	2,99,791
2	Commercial	24,594	3.96%	25,569	26,582
3	Industrial	4,729	12.67%	5,328	6,004
4	Public Lighting	621	0.69%	625	630
5	Public Water Works	38	4.84%	40	42
6	Irrigation & Agriculture	1	0.00%	1	1
7	Bulk Supply	2,424	23.05%	2,983	3,670
<b>8</b>	<b>Total</b>	<b>3,03,440</b>		<b>3,19,596</b>	<b>3,36,719</b>

It is submitted that the Hon'ble Commission may kindly consider and approve the number of consumers as projected above.

Table 13: Calculation of CAGR for Connected load

S. No.	Categories	FY15	FY16	FY17	FY18	FY19	FY20	CAGR for 5 Years	CAGR for 3 Years	CAGR for 1 Years
1	Domestic including BPL	95,000	1,01,200	1,02,300	1,03,198	1,08,209	1,08,334	2.66%	1.93%	0.12%
2	Commercial	14,460	15,724	17,200	17,266	17,434	18,519	5.07%	2.49%	6.22%
3	Industrial	10,225	11,054	11,400	11,418	11,484	11,484	2.35%	0.25%	0.00%
4	Public Lighting	8,000	8,000	8,000	8,000	8,000	8,000	0.00%	0.00%	0.00%
5	Public Water Works	750	750	750	750	750	750	0.00%	0.00%	0.00%
6	Irrigation & Agriculture	10	10	10	10	10	10	0.00%	0.00%	0.00%
7	Bulk Supply	27,000	29,400	31,400	31,468	36,898	39,471	7.89%	7.92%	6.97%
<b>8</b>	<b>Total</b>	<b>1,55,445</b>	<b>1,66,138</b>	<b>1,71,060</b>	<b>1,72,110</b>	<b>1,82,784</b>	<b>1,86,567</b>			

Table 14: Category wise Connected Load considered for FY22-23

S. No.	Categories	20-21 (Actual)	CAGR Used	21-22 (Estimated)	22-23 (Projected)
1	Domestic including BPL	1,09,665	2.66%	1,12,584	1,15,580
2	Commercial	19,749	5.07%	20,751	21,803
3	Industrial	11,484	2.35%	11,754	12,030
4	Public Lighting	8,000	0.00%	8,000	8,000
5	Public Water Works	750	0.00%	750	750
6	Irrigation & Agriculture	10	0.00%	10	10
7	Bulk Supply	42,425	7.89%	45,773	49,384
<b>8</b>	<b>Total</b>	<b>1,92,083</b>		<b>1,99,621</b>	<b>2,07,558</b>

It is submitted that the Hon'ble Commission may kindly consider and approve the connected load as projected above.

Table 15: Calculation of CAGR for Energy sales

S. No.	Categories	FY15	FY16	FY17	FY18	FY19	FY20	CAGR for 5 Years	CAGR for 3 Years	CAGR for 2 Years	CAGR for 1 Year
1	Domestic including BPL	298.51	284.48	342.00	348.60	350.85	381.07	5.00%	3.67%	4.55%	8.61%
2	Commercial	64.68	82.64	82.58	84.88	82.56	96.17	8.26%	5.21%	6.44%	16.48%
3	Industrial	51.29	63.36	61.29	64.29	51.80	43.91	-3.06%	-10.52%	-17.36%	-15.23%
4	Public Lighting	9.48	11.00	14.60	15.80	11.58	0.91	-37.42%	-60.35%	-76.00%	-92.14%
5	Public Water Works	4.67	4.59	9.24	10.56	9.50	0.40	-38.83%	-64.89%	-80.54%	-95.79%
6	Irrigation & Agriculture	0.02	0.02	0.02	0.02	0.02	0.02	0.00%	0.00%	0.00%	0.00%
7	Bulk Supply	81.52	102.84	100.10	102.20	88.83	98.71	3.90%	-0.47%	-1.72%	11.12%
8	Outside state	12.07	23.68	25.00	29.52	44.35	41.04	27.73%	17.97%	17.91%	-7.46%
<b>9</b>	<b>Total</b>	<b>522.24</b>	<b>572.60</b>	<b>634.83</b>	<b>655.87</b>	<b>639.49</b>	<b>662.23</b>				

Table 16: Category wise Energy Sales considered for FY 22-23

S. No.	Categories	20-21 (Actual)	CAGR Used	21-22 (Estimated)	22-23 (Projected)
1	Domestic including BPL	393.03	3.67%	407.46	422.42
2	Commercial	100.15	5.21%	105.37	110.86
3	Industrial	45.35	3.28%	46.84	48.37
4	Public Lighting	0.94	3.30%	0.97	1.00
5	Public Water Works	0.41	2.50%	0.42	0.43
6	Irrigation & Agriculture	0.02	0.00%	0.02	0.02
7	Bulk Supply	101.69	3.90%	105.66	109.78
8	Outside state	67.05	0.00%	26.04	26.04
<b>9</b>	<b>Total</b>	<b>708.64</b>		<b>692.77</b>	<b>718.92</b>



Table 17: Energy Sales for FY 22-23 (In Mus)

S. No.	Categories	Approved in MYT.O. dated 20th March 2020	Projected
1	Domestic including BPL	432.90	422.42
2	Commercial	117.71	110.86
3	Industrial	75.84	48.37
4	Public Lighting	16.95	1.00
5	Public Water Works	13.91	0.43
6	Irrigation & Agriculture	0.02	0.02
7	Bulk Supply	114.19	109.78
8	<b>Total ( Within the State)</b>		<b>692.88</b>
9	Outside state sale		26.04
<b>10</b>	<b>Total</b>	<b>771.52</b>	<b>718.92</b>

The details of estimated Post Paid & Prepaid sales is provided in the tables below:

Table 17a: Energy Sales (Post-paid) for FY 22-23 (In Mus)

S. No.	Categories	Projected
1	Domestic including BPL	414.15
2	Commercial	99.30
3	Industrial	47.78
4	Public Lighting	1.00
5	Public Water Works	0.43
6	Irrigation & Agriculture	0.02
7	Bulk Supply	109.77
8	<b>Grand Total</b>	<b>672.46</b>

Table 17b: Energy Sales (Prepaid) for FY 22-23 (In Mus)

S. No.	Categories	Projected
1	Domestic	8.27
2	Commercial	11.55
3	Industrial	0.59
4	Bulk Supply	0.01
5	<b>Grand Total</b>	<b>20.42</b>

In view of the above submissions it is requested that the Hon'ble Commission may kindly approve the energy sales of 718.92 Mus for the FY 2022-23 as projected.

### Energy Availability and Power Purchase Quantum

Since, DPN does not have any generation capacity of its own, except for 24 MW Likhimro HEP, it relies entirely on the allocation of power from the Central Generating Stations like NTPC, NHPC, NEEPCO & OTPC. The current firm and unallocated power allocation from the various Central Generating Stations have been considered while projecting the power purchase from various generating stations.

The Energy availability to DPN from various plants is considered on the below mentioned methodology

- a. The current firm and unallocated power allocation from the various Central Generating Stations have been considered as per the recent revised allocation statement issued by Northern Regional Power Committee. Current allocation from different plants to DPN has been considered for the availability to DPN for FY 2022-23.
- b. The generation units available from each plant are computed considering the availability from the plants during the FY 2020-21 & FY 2021-22.
- c. The deficit in energy is proposed to be met through short term power.

Based on the above assumptions and methodology, the power availability to DPN from various generating stations during FY 2022-23 is as summarized below:

Table 18: Energy Available from different plants for FY 2022-23

S. No.	Source	Name of Project	Type	Capacity	Total Avg Entitlement in %	Entitlement in MW
1	NTPC	Farakka STPS	Coal	1600.00	0.43	6.88
2		Kahalgaon STPS	Coal	840.00	0.42	3.57
3		Talcher STPS	Coal	1000.00	0.42	4.25
4		BGTTP	Coal	250.00	4.93	12.33
5	NHPC	Loktak HEP	Hydel	105.00	6.44	6.76
6	NEEPCO	DOYANG HEP	Hydel	75.00	17.81	13.35
7		AGBPP	Gas	291.00	5.81	16.89
8		AGTTP	Gas	84.00	5.74	4.82
9		KHANDONG HEP	Hydel	50.00	6.65	3.33
10		KOPILI HEP	Hydel	200.00	6.15	12.29
11		RANGANADI HEP	Hydel	405.00	5.34	21.61
12		KOPILI - II HEP	Hydel	25.00	5.74	1.43
13		PARE	Hydel	110.00	5.40	5.94
14		KAMENG	Hydel	600.00	1.50	9.00
15	OTPC	Palatana	Gas	726.00	7.16	52.00
16	LHEP	Own Generation	Hydel	24.00	100.00	24.00

Based on the above entitlements and reasonable assumptions, the energy availability to DPN from various generating stations during the FY 2022-23 is as summarized below:

Table 19: Energy Available from different plants for FY 2022-23 (in MUs)

S. No.	Name of Project	Approved in MYT.O. dated 20th March 2020	Projected
	<b>Central Sectors</b>		
1	Farakka STPS	40.79	41.86
2	Kahalgaon STPS	23.52	23.27
3	Talcher STPS	29.19	27.36
4	BGTPP	69.64	218.73
5	Loktak HEP	55.04	25.33
6	DOYANG HEP	15.48	5.63
7	AGBPP	79.62	98.57
8	AGTPP	34.22	51.72
9	KHANDONG HEP	16.75	17.76
10	KOPILI HEP	63.34	-
11	RANGANADI HEP	73.94	59.85
12	KOPILI - II HEP	6.31	0.64
13	Pare HEP	41.63	22.55
14	Kameng		37.41
15	Palatana	131.09	184.24
	<b>Others</b>		
16	DEVIATION/SHORTTERM	215.57	51.90
17	Free Power	31.19	11.39
18	Own Geheration	91.00	83.63
	<b>Total</b>	<b>1,018.32</b>	<b>961.83</b>

## Power Purchase from Renewable Sources/RECs

DPN is also required to procure power from renewable sources for meeting the RPO as per the renewable regulations. It is submitted that DPN procures power from its own generating station – Likhimro HEP to meet the Non-Solar RPO. However, with regard to Non-solar RPO as submitted in the APR section above, DPN does not have tied up sources of solar power as on date. However, new solar projects in the state are being developed and procurement from these sources shall help DPN meet the Solar RPO requirement. In view of the above, it is requested that the Commission may allow DPN to meet the Solar & Non-solar RPO through Non-Solar sources. Further, gaps may be allowed to be carried forward to be met in future years when solar sources are commissioned.

## Power Purchase cost

It is submitted that CERC has issued new Tariff Orders for the period of FY 2019-24 for a number of generating stations based on which the fixed and energy charges from these stations have undergone a change. Therefore, it is important to consider the revised Tariff Orders of these generating stations for projection of power purchase cost.

Also, the actual power purchase cost from other generating sources is available for FY 2020-21 and April, 2021 to February, 2022 (FY 2021-22). The assumptions considered for projection of power purchase cost from various generating station are detailed below:

- a. The Fixed Cost for each plant is computed based upon the % allocation of the plant capacity to DPN and corresponding annual fixed charges approved for the generating stations as per their recent tariff orders for the control period (FY 2019-24) approved by CERC. For generating plants where tariff orders are still pending, actual fixed charges for April, 2021 to February, 2022 & estimated for March, 2022 have been considered along with escalation of 2.42% (Average increase in WPI for the last 3 financial years).
- b. The Energy Charges for thermal plant are computed based on actual fixed charges for April, 2021 to February, 2022 & estimated for March, 2022 along with escalation of 2.42% (Average increase in WPI for the last 3 financial years).

- c. In case of hydro plants the variable charge has been computed based on actual fixed charges for April,21 to February,22 & estimated for March, 2022 along with escalation of 2.42% (Average increase in WPI for the last 3 financial years).
- d. PGCIL Charges, NERLDC Charges, Reactive Energy charges are computed based on actual fixed charges for April,21 to February,22 & estimated for March, 2022 along with escalation of 2.42% (Average increase in WPI for the last 3 financial years).
- e. Shortfall in power after accounting for energy availability from all stations has been considered to be met from short term sources. The cost of short term power has been projected by escalating the actual per unit cost for April,21 to February,22 & estimated for March, 2022 by 2.42% (Average increase in WPI for the last 3 financial years).

The projected power purchase cost is as illustrated in the table below:

Table 20: Projected Power Purchase Cost for FY 2022-23 (Rs. Crores)

Plant	Approved in MYT.O. dated 20th March 2020	Projected Cost (in Rs. Cr.)
<b>Central Sectors</b>		
Farakka STPS	20.16	175.58
Kahalgaon STPS	10.51	
Talcher STPS	9.33	
BGTPP	69.73	
Loktak HEP	20.30	11.13
DOYANG HEP	9.28	118.83
AGBPP	43.50	
AGTPP	22.10	
KHANDONG HEP	4.50	
KOPILI HEP	7.99	
RANGANADI HEP	28.08	
KOPILI - II HEP	1.72	
Pare HEP	23.72	
Palatana	51.23	53.54
<b>Others</b>		
DEVIATION/SHORTTERM	60.55	8.96
Free Power		
<b>Total</b>	<b>382.72</b>	<b>368.02</b>
Cost of REC certificates	7.69	
Other Charges		1.83
<b>Grand Total</b>	<b>390.41</b>	<b>369.86</b>

- a. The other charges comprising of inter-state transmission charges, scheduling charges etc. are projected considering an increase of 2.42% (Average increase in WPI for the last 3 financial years) over actual cost for the period April,21 to February,22 & estimated cost for March, 2022.

The projected charges are as summarized in the table below:

Table 21: Transmissions and Other Charges projected for FY 2022-23 (Rs. Crore)

Particulars	Approved in MYT.O. dated 20th March 2020	Projected
PGCIL Charges	46.71	92.93
NERLDC/NERPC fees and charges	0.58	0.63
<b>Total</b>	<b>47.30</b>	<b>93.56</b>

Total cost projected for FY 2022-23 with respect to approved power purchase cost is as provided in table below. The Hon'ble Commission is requested to approve the same.

Table 22: Projected Power Purchase Cost for FY 2022-23 (Rs. Crores)

Particulars	Approved in MYT.O. dated 20th March 2020	Projected
<b>Total Power Purchase Cost</b>	<b>390.41</b>	<b>369.86</b>

## T&D Losses and Energy Requirement

As per the Tariff Order dated 20-03-2020 the T&D loss as approved by the Commission for FY 2022-23 is 23.25% ( distribution loss – 20.25% & Intra-state Transmission loss -3%). DPN is dedicated for reducing the intra-state T&D losses in the state, however, as discussed in the previous chapter, it is submitted that that while the sales have increased in the last three years, losses remained stagnant without much improvement due to majority of the increase in the sales in the LT category. DPN submits to the Hon'ble Commission that the losses have been in the range of 26%-24% during the period of FY 2014-15 to FY 2019-20. DPN has restricted the T&D loss for the FY 2020-21 to target approved by the Hon'ble Commission. It is difficult to bring the losses substantially from this level.



One of the primary reasons of stagnation in losses is the dominance of domestic category in the sales mix. In spite of an increase in overall sale, maximum increase in sales have happened in the domestic category resulting in a higher proportion of the overall sales as compared to industrial consumers where the sales have remained stagnant leading to a reduction in overall share.

It is submitted to the Hon'ble Commission that T&D reduction is difficult because of topographical conditions apart from the fact that maximum in demand is to domestic category and the scope for addition of HT consumers is limited or negligible. As a result the sales to such categories is generally restricted leading to stagnation of T&D losses.

With sales mostly to LT consumers, DPN feels that further reduction in the T&D loss in the state shall be possible after implementation of its various IT/strengthening schemes.

In view of the above, it is submitted that the Hon'ble Commission may kindly consider the above submission while deciding the T&D loss trajectory.

The Transmission losses in the interstate circuit is considered at the levels approved by the Hon'ble Commission in the MYT order for the FY 2022-23. The Hon'ble Commission may kindly consider & approve the same.

Table 23: Energy Balance for FY 2022-23

Particulars	Approved in MYT.O. dated 20th March 2020	Projected
Energy Sales within the State	<b>771.52</b>	<b>692.88</b>
Distribution Loss %	20.25%	20.25%
Distribution Loss (MUs)	195.90	175.93
Total Energy Requirement	<b>967.42</b>	<b>868.82</b>
<b>Energy Availability</b>		
Own Generation	91.00	83.63
Power from ER	<b>93.50</b>	<b>92.49</b>
ER Total Loss (%)	2.26%	2.26%
Regional Loss (MUs)	2.11	2.09
Net Energy from ER (MU's)	91.39	90.40
Power from NER	618.25	733.81
Total Power purchased	709.63	824.20
NER Tr. Loss %	2.66%	2.66%
NER Tr. Loss	18.88	21.92
<b>Net Energy Available</b>	690.76	802.28
Add: Over Drawn/Shortterm	215.57	29.92
Add: Banking (Import)	0.00	21.98
Less: Out side state sale	0.00	26.04
Less: Banking (Export)	0.00	16.09
<b>Total Energy Available at state periphery</b>	<b>997.33</b>	<b>895.69</b>
<b>Intra State Tr. Loss @3%</b>	<b>29.92</b>	<b>26.87</b>
<b>Net Energy available for Sale</b>	<b>967.42</b>	<b>868.81</b>
<b>Demand Supply (Gap) / Surplus</b>	<b>0.00</b>	<b>0.00</b>

## Cost of Generation

DPN has its won 24 MW Likimro HEP. The cost of generation approved by the Hon'ble Commission and revised estimates for the FY 2022-23 is provided below. Hon'ble Commission may kindly consider and approve the same.

Table 24: Approved and Projected Cost of Generation for FY 2022-23 (Rs Crores)

Particulars	Approved in MYT.O. dated 20th March 2020	Projected
Cost of Generation	19.43	15.00

## Operations and Maintenance Expenses

Operation & Maintenance Expenses consists of three elements viz. Employee Expenses, A&G Expenses and R&M Expenses. As per the MYT Regulations, O&M expenses shall be treated as controllable parameter and shall not be revised except those attributable to directions of the Commission.

- b. Accordingly, DPN has revised employee expenses and A&G expenses & R & M for FY 2022-23 by considering an increase of 2.42% (Average increase in WPI for the last 3 financial years) over actual cost for the period April,21 to March, 2022.

The O&M expenses for the FY 2022-23 is provided in the table below:

Table 25: Approved and Projected O&M Expenses for FY22-23 (Rs Crores)

Particulars	Approved in MYT.O. dated 20th March 2020	Projected
Employee Expense	142.42	142.72
R&M Expense	37.53	31.38
A&G Expense	4.10	3.65
<b>Total O&amp;M Expenses</b>	<b>184.05</b>	<b>177.75</b>

The Hon'ble Commission is requested to approve the total O&M expenses as computed in the above table for the FY 2022-23.

## GFA and Depreciation

DPN has considered the opening GFA of Rs. 1349.40 Crores for the FY 2021-22 as submitted in the APR section above and considered the approved additions of Rs. 100.00 Crores for the FY 2021-22 to arrive at the opening GFA of Rs. 1449.40 Crores for the FY 2022-23.

For the FY 2022-23, approved capitalization as per the MYT Order has been considered and any variation shall be submitted at the time of truing-up for the year.

DPN requests the Hon'ble Commission to approve the fixed assets in the table below:

*Table 26: Approved and Projected Assets Addition for FY 2022-23 (Rs Crores)*

Particulars	Approved in MYT.O. dated 20th March 2020	Projected
Opening GFA	3,328.59	1,449.40
Asset Capitalized	100.00	100.00
Closing GFA	3,428.59	1,549.40

The petitioner submits that it has initiated activities with respect to the preparation/up-dation of Fixed Asset Register for the FY 2020-21 and it is requested that the Hon'ble Commission may kindly approve the same as and when they are prepared.

Depreciation has been calculated on the basis of the opening GFA & proposed additions during the FY 2022-23 at the rate prescribed in the MYT Regulations. The approved and revised depreciation for FY 2022-23 is provided below:

*Table 27: Approved and Projected Depreciation for FY 2022-23 (Rs Crores)*

Particulars	Approved in MYT.O. dated 20th March 2020	Projected
Depreciation for the year	<b>150.05</b>	<b>64.37</b>

## Interest on Loan

It is submitted that the entire capital employed has been funded through infusion of funds by Government of Nagaland through budgetary support without any external borrowings on part of the DPN. As such, the DPN has not considered interest on loan for the FY 2022-23.

## Interest on Working Capital

As per clause 29.4 of NERC MYT Regulations 2016 the working capital of a licensee shall consist of -

- e. Operation and maintenance expenses for one month; plus
- f. Maintenance spares at one (1) per cent of the historical cost escalated at 6% from the date of commercial operation; plus
- g. Receivables equivalent to one (1) month of the expected revenue from sale of electricity at the prevailing tariffs; minus
- h. Amount held as security deposits under clause (a) and clause (b) of sub-section (1) of Section 47 of the Act from consumers except the security deposits held in the form of Bank Guarantees;

The SBI Advance rate as on 1<sup>st</sup> April, 2021 (current applicable rate) of 12.20% is considered for computation of interest on working capital.

In this regard it is submitted that the entire operating expenses of the Department is provided by the Government of Nagaland without any external borrowings toward working capital. Hence, DPN does not have any working capital loan. As such, the DPN has not claimed interest on Working Capital for the FY 2022-23.

## Return on Equity

Regulation 26 of MYT Regulations 2016 provides for Return on Equity (RoE) as follows:

*“Return on equity shall be computed on the paid up equity capital determined in accordance with Regulation 22 relating to the Generating Company or Transmission Licensee or Distribution Licensee as the case may be and shall be allowed at the rate of 15.5% for Generating Companies, including hydro generation stations above 25 MW, Transmission Licensee, and Distribution Licensee”*

It is submitted that the entire capital employed has been funded through infusion of funds by Government of Nagaland through budgetary support. There is no paid up equity capital nor DPN is paying any return on equity to the Government of Nagaland. In view of the above, the DPN has not claimed Return on Equity for the FY 2022-23.

## Provision for Bad and Doubtful Debt

Regulation 89.8 of NERC MYT Regulations, 2016 provides as follows:

*“ The Commission may allow bad debts written off as a pass through in the aggregate revenue requirement, subject to prudence check.”*

DPN proposes to claim the Bad debt after the Annual Accounts for the year are finalised and audited. Hence, the same shall be claimed at the time of True-up for the FY 2022-23. Hon'ble Commission may allow the same.

## Non-Tariff Income

DPN is not proposing any change in the Non-tariff income approved by the Hon'ble Commission for FY 2022-23. The proposed Non-tariff Income for the FY 2022-23 as shown in the below table:

Table 28: Projected Non-Tariff Income for FY 2022-23 (Rs. Crores)

Particulars	Approved in MYT.O. dated 20th March 2020	Projected
<b>Non-Tariff Income</b>	<b>14.60</b>	<b>14.60</b>

### Aggregate Revenue Requirement of FY 2022-23

Based on the above discussion, the revised projection for Aggregate Revenue Requirement for FY 2022-23 is as given in the table below:

Table 29: Projected Aggregate Revenue Requirement for FY 2022-23 (Rs. Crores)

S. No.	Particulars	Approved in MYT.O. dated 20th March 2020		Projected	
1	Cost of power purchase	390.41		369.86	
2	Transmission charges	47.30		93.56	
3	Total cost of power purchase (1+2)		437.71		463.42
4	Cost of Generation		19.43		15.00
5	Employee Expenses	142.42		142.72	
6	Repair & Maintenance Expenses	37.53		31.38	
7	Administration & General Expenses	4.10		3.65	
8	Total O & M Expenses (5+6+7)		184.05		177.75
9	Interest and finance charges		-		-
10	Depreciation		150.05		64.37
11	Interest on working capital		11.97		-
12	Return on Equity		-		-
<b>13</b>	<b>Total Revenue Requirement (3+4+8+9+10+11+12)</b>		<b>803.21</b>		<b>720.54</b>
14	Less: Non-Tariff Income		14.60		14.60
<b>15</b>	<b>Net Revenue Requirement (13-14)</b>		<b>788.61</b>		<b>705.94</b>

## Revenue based on Existing Tariff

Based on the revised projection of sale and the existing tariff approved by the Commission as per the Tariff Order for the FY 2021-22, the estimated revenue for FY 2022-23 is summarized in table below:

Table 30: Revised Projections for Revenue on Existing Tariff for FY 2022-23 (Rs Crores)

S. No.	Category / Slab of Consumers	Projected
A	Domestic	143.66
B	Industrial	31.06
C	Bulk Supply	72.45
D	Commercial	81.09
E	Public water works & sewage	0.30
F	Public Lighting	3.04
H	Agriculture	0.01
I	Single Point Metered Rural	73.93
J	Single Point Metered Urban	11.42
K	<b>Total - within the state</b>	<b>416.96</b>
L	Outside state sale	17.56
M	<b>Total Sale</b>	<b>434.52</b>

Table 30a: Revised Projections for Revenue on Existing Tariff(Postpaid) for FY 2022-23 (Rs Crores)

S. No.	Category / Slab of Consumers	Projected
1	Domestic	139.40
2	Industrial	30.71
3	Bulk Supply	72.45
4	Commercial	72.43
5	Public water works & sewage	0.30
6	Public Lighting	3.04
7	Agriculture	0.01
8	Single Point Metered Rural	73.93
9	Single Point Metered Urban	11.42
10	<b>Total</b>	<b>403.68</b>



Table 30b: Revised Projections for Revenue on Existing Tariff(Prepaid) for FY 2022-23 (Rs Crores)

S. No.	Category / Slab of Consumers	Projected
1	Domestic	4.26
2	Industrial	0.36
3	Bulk Supply	0.01
4	Commercial	8.67
5	<b>Total Sale</b>	<b>13.28</b>

### Revenue Gap for FY 2022-23

Based on the revised ARR and revenue for FY 2022-23, the expected revenue gap is summarized in table below:

Table 31: Proposed Revenue Gap on Existing Tariff for FY 2022-23 (Rs. Crore)

S. No.	Particulars	FY 2022-23
1	Net Revenue Requirement	705.94
2	Revenue from sale of energy at Existing Tariff	434.52
3	Revenue Subsidy- Govt. of Nagaland	177.75
4	<b>Revenue Surplus/(Gap) for the Year (2+3-1)</b>	<b>(93.67)</b>

**The above revenue gap for FY 2022-23 only and does not include any revenue gap for APR for FY 2021-22. The proposed treatment for coverage of the revenue gap along with carrying cost is detailed in the subsequent Chapter.**

## Chapter 4: Revenue Gap and Basis of proposal for revision of Tariff

The revenue gap on account of revised ARR for the FY 2022-23 is Rs. 93.67 Crores. There is substantial gap between cost of supply and average revenue. DPN does not propose to recover the entire Gap in cost of supply & average revenue as these may result in huge burden on the consumers. Tariff is a sensitive subject having substantial impact on social, economic and financial well-being of the public at large as well as the viability and growth of power sector. Recovery of entire Gap through tariff increase is not practicable as this would make power unaffordable to the general consumers. DPN being a Government Department funded by budgetary support from State Government, it proposes to absorb the unrecovered gap.

In view of the above, the tariff proposal for FY 2022-23 for individual categories is given below along with the comparison of existing and proposed energy charges. The table below presents the existing and proposed tariff for various categories.

*Table 32: Existing and Proposed Tariff*

SI No.	CATEGORY	Existing Rate Rs./kwh	Proposed Rate Rs./kwh
1	2	3	4
A	<b>1 CATEGORY 'A' DOMESTIC</b>		
	(a) 0 to 30 kwh	4.70	5.10
	(b) 31 to 100 kwh	5.45	5.60
	(c) 101 to 250 kwh	6.00	6.20
	(d) > 250 kwh	7.00	7.00
	<b>2 CATEGORY 'B' INDUSTRIAL</b>		
	(a) < 500 kwh	6.00	6.20
	(b) 501 to 5000 kwh	6.50	6.70
	(c) > 5000 kwh	7.30	7.30
	<b>3 CATEGORY 'C' BULK</b>	6.60	6.80
	<b>4 CATEGORY 'D' COMMERCIAL</b>		
	(a) < 60 kwh	7.10	7.35
(b) 61 to 240 kwh	8.20	8.50	
(c) > 240 kwh	8.90	8.90	
<b>5 CATEGORY 'E' P.W.W.</b>	7.00	7.25	
<b>6 CATEGORY 'F' Public Light</b>	To be recovered from consumers *	To be recovered from consumers *	
<b>7 CATEGORY 'G' INTERSTATE</b>	6.00	6.00	
<b>8 CATEGORY 'H' AGRICULTURE</b>	3.10	3.20	
<b>9 CATEGORY 'I' TEMPORARY CONNECTION</b>	DLF Rs.11.00 Others Rs.14.00	DLF Rs.11.00 Others Rs. 14.00	
<b>10 Kutir Jyoti(point)</b>	Same as DLF	Same as DLF	
<b>11 SINGLE POINT METERED RURAL</b>	5.00	5.15	
<b>12 SINGLE POINT METERED URBAN</b>	5.20	5.40	
*	Charges for public lighting have to be recovered from the Consumers of Domestic, Commercial, Industrial and Bulk categories at the rates shown below:		
	Domestic	Rs. 10 per connection / month	Rs. 10 per connection / month
	Commercial	Rs. 15 per connection / month	Rs. 15 per connection / month
	Industrial	Rs. 20 per connection / month	Rs. 20 per connection / month
	Bulk Supply	Rs. 25 per connection / month	Rs. 25 per connection / month

The Revenue from proposed tariff at the projected energy sales for the FY 2022-23 is provided in the below.

Table 33: Revenue from Proposed Tariff (Rs. Crores)

S. No.	Category / Slab of Consumers	Projected
A	Domestic	147.99
B	Industrial	31.91
C	Bulk Supply	74.65
D	Commercial	83.89
E	Public water works & sewage	0.31
F	Public Lighting	3.04
G	Agriculture	0.01
H	Single Point Metered Rural	76.15
I	Single Point Metered Urban	11.85
K	<b>Total within the State</b>	<b>429.80</b>
L	Outside state sale	17.56
M	<b>Total Sale</b>	<b>447.36</b>

The details of estimated Post Paid & Prepaid Revenue is provided in the tables below:

Table 33a: Revenue from Proposed Tariff (Post paid) (Rs. Crores)

S. No.	Category / Slab of Consumers	Projected
1	Domestic	143.61
2	Industrial	31.54
3	Bulk Supply	74.64
4	Commercial	74.76
5	Public water works & sewage	0.31
6	Public Lighting	3.04
7	Agriculture	0.01
8	Single Point Metered Rural	76.15
9	Single Point Metered Urban	11.85
10	<b>Total</b>	<b>415.92</b>

Table 33b: Revenue from Proposed Tariff (Prepaid) (Rs. Crores)

S. No.	Category / Slab of Consumers	Projected
1	Domestic	4.38
2	Industrial	0.37
3	Bulk Supply	0.01
4	Commercial	9.13
5	<b>Total Sale</b>	<b>13.89</b>

The Additional Revenue from proposed tariff at the projected energy sales for the FY 2022-23 is provided in the below.

Table 34: Additional Revenue from Proposed Tariff (Rs. Crores)

S. No.	Particular	2022-23
		Projected
1	Revenue from Existing Tariff	434.52
2	Revenue from Proposed Tariff	447.36
3	<b>Additional Revenue from Proposed Tariff (2-1)</b>	<b>12.84</b>

The recovery of the Revenue Gap based on the proposed tariff is detailed in the table below.

Table 35: Revised Revenue Gap based on Proposed Tariff (Rs. Crore)

Particulars	FY 2022-23
ARR for FY 2022-23	705.94
Revenue at Existing Tariff	434.52
Revenue Subsidy- Govt. of Nagaland	177.75
Surplus/ (Gap) for the year	(93.67)
Additional Revenue from Proposed Tariff	12.84
<b>Net Surplus/ (Gap)</b>	<b>(80.83)</b>

In view of the above submissions, it can be seen that the tariff structure proposed by DPN for the FY 2022-23 along with revenue subsidy from the Govt. of Nagaland shall recover 88.55% of the ARR for the FY 2022-23.

**Impact of Tariff on Consumers**

The revenue gap and the average tariff hike proposed are presented in the table below:

Table 36: Impact of Tariff on Consumers

Sr. No.	Particulars	Units	FY 2022-23	
			Existing	Proposed
1	Net ARR	Rs. Crores	705.94	705.94
2	Revenue from tariff	Rs. Crores	416.96	429.80
3	Revenue from sale of power out side the State	Rs. Crores	17.56	17.56
4	<b>Total Revenue</b>	Rs. Crores	434.52	447.36
5	Revenue Subsidy- Govt. of Nagaland	Rs. Crores	177.75	177.75
6	<b>Gap (1-4-5)</b>	Rs. Crores	93.67	80.83
7	Sales within State	MU's	692.88	692.88
8	Sale of power out side the State	MU's	26.04	26.04
9	Total Sales	MU's	718.92	718.92
10	Average Cost of Supply $\{(1-3) / 7 \times 10\}$	Rs. per kWh	9.94	9.94
11	Average Revenue $(2 / 7 \times 10)$	Rs. per kWh	6.02	6.20
12	Pure Gap (10-11)	Rs. per kWh	3.92	3.73
13	Average Hike in Tariff	Rs. per kWh		0.19
14	Average Hike	%		3.08

**In light of the above submission the DPN requests the Hon'ble Commission to approve the revised tariff proposals as below.**

Table 37: Tariff Schedule

SI No.	CATEGORY	Proposed Rate Rs./kwh
1	2	3
A	1	<b>CATEGORY 'A' DOMESTIC</b>
		(a) 0 to 30 kwh
		(b) 31 to 100 kwh
		(c) 101 to 250 kwh
		(d) > 250 kwh
		Monthly minimum charges - Rural
		Monthly minimum charges - Urban
	2	<b>CATEGORY 'B' INDUSTRIAL</b>
		(a) < 500 kwh
		(b) 501 to 5000 kwh
		(c) > 5000 kwh
		Monthly minimum charges
	3	<b>CATEGORY 'C' BULK</b>
		Monthly minimum charges
	4	<b>CATEGORY 'D' COMMERCIAL</b>
		(a) < 60 kwh
		(b) 61 to 240 kwh
		(c) > 240 kwh
		Monthly minimum charges
	5	CATEGORY 'E' P.W.W.
		Monthly minimum charges
	6	CATEGORY 'F' Public Light
	7	CATEGORY 'G' INTERSTATE
8	CATEGORY 'H' AGRICULTURE	
	Monthly minimum charges	
9	CATEGORY 'I' TEMPORARY CONNECTION	
10	Kutir Jyoti(point)	
11	SINGLE POINT METERED RURAL	
12	SINGLE POINT METERED URBAN	
*	Charges for public lighting have to be recovered from the Consumers of Domestic, Commercial, Industrial and Bulk categories at the rates shown below:	
	Domestic	Rs. 10 per connection / month
	Commercial	Rs. 15 per connection / month
	Industrial	Rs. 20 per connection / month
	Bulk Supply	Rs. 25 per connection / month

<b>B</b>	<b>OTHER CHARGES</b>		
	(a)	Disconnection charges	Rs.
		i. Single phase L.T.	150/connection
		ii. Three phase L.T.	250/connection
		iii. H.T. consumers (11KV above)	1500/connection
	(b)	Reconnection charges	
		iii. H.T. consumers (11KV above)	1500/connection
<b>C</b>	<b>METER RENT</b>		Rs. per meter/month
	i.	Single phase L.T.	20.00
	ii.	Three phase L.T. (whole current)	50.00
	iii.	Three phase L.T. (CT operated)	100.00
	iv.	<b>11 kv H.T.</b>	500.00
	v.	<b>33 kv H.T.</b>	750.00
	vi.	<b>66 kv EHV</b>	900.00
	vii.	<b>132 kv EHV</b>	<b>1000.00</b>
<b>D</b>	<b>METER TESTING CHARGES</b>		<b>Rs. per meter per test</b>
	i.	Single phase L.T.	100.00
	ii.	Three phase L.T.	300.00
	iii.	Three phase L.T. (11 KV above)	1,000.00
<b>E</b>	<b>SECURITY DEPOSIT</b>		Rs. per connection
	i.	Single phase L.T.	250.00
	ii.	Three phase L.T.	750.00
	iii.	Three phase L.T. (11 KV above)	3,000.00
<b>F</b>	<b>SURCHARGES (DELAYED PAYMENT)</b>		Re.0.10/kwhpm or part thereof
<b>G</b>	<b>BILLING PERIODICALLY</b>		Monthly
<b>H</b>	<b>CHARGES OF POLES USAGE FOR ADVERTISEMENT</b>		Rupees
	1	Charges for application and agreement forms	100.00
	2	Charges towards dismantling of hoardings/banners	300.00
	3	The pole rental charges for advertisements: -	Rs./per month
		a. Category I-Commercial area (Max size 3'x2')	100
		b. Category II-Residential area (Max size 3'x2')	60
		c. Category III-National Highway (Max size 3'x2') (Outside the city/town limit)	40



Tariff Schedule proposed for the prepaid metered consumers is provided below. It is submitted that Hon'ble Commission may kindly consider & approve the same.

Table 38: Tariff Schedule for Prepaid Metered Consumers

SI No.	CATEGORY	Proposed Rate Rs./kwh
<b>1</b>	<b>CATEGORY 'A' DOMESTIC</b>	
	All Units	5.30
<b>2</b>	<b>CATEGORY 'B' INDUSTRIAL</b>	
	All Units	6.30
<b>3</b>	<b>CATEGORY 'C' BULK</b>	
	All Units	6.60
<b>4</b>	<b>CATEGORY 'D' COMMERCIAL</b>	
	All Units	7.90
<b>5</b>	<b>CATEGORY 'H' AGRICULTURE</b>	
	All Units	3.15

- Meter Rent: Same as post-paid.