

APR for FY 2019-20 &
Business Plan, ARR for 5-Year MYT
2nd Control Period from FY 2020-21 to
FY 2024-25

&

Tariff Proposal for the FY 2020-21

for

Distribution Total Business

Submitted by:
Department of Power
Government of Nagaland

November, 2019

BEFORE HON'BLE ELECTRICITY REGULATORY COMMISSION
FOR THE STATE OF NAGALAND

AND

.....Petitioner

2. I, the deponent named above do hereby verify that the contents of the accompanying petition are based on the records of the Power Department, Government of Nagaland maintained in the ordinary course of business and believed by them to be true and I believe that no part of it is false and no material has been concealed there from.

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LIST OF ABBREVIATIONS

Abbreviation	Description
A&G	Administration & General
ARR	Aggregate Revenue Requirement
CAGR	Compound Annual Growth Rate
CD	Contract Demand
CERC	Central Electricity Regulatory Commission
CGS	Central Generating Stations
CoS	Cost of Supply
CPSU	Central Power Sector Undertakings
Crs	Crore
D/E	Debt Equity
DPN	Department of Power, Govt. of Nagaland
FAC	Fuel Adjustment Costs
FDR	Fixed Deposits Receipts
FY	Financial Year
GFA	Gross Fixed Assets
HP	Horse Power
HT	High Tension
NERC(M&M)	Joint Electricity Regulatory Commission for Manipur & Nagaland
KV	Kilovolt
KVA	Kilovolt Amps
kWh	kilo Watt hour
LT	Low Tension
LTC	Leave Travel Concession
MU	Million Units
MVA	Million Volt Amps
MW	Mega Watt
O&M	Operation & Maintenance
PLF	Plant Load Factor
PLR	Prime Lending Rate
R&M	Repairs and Maintenance
RoE	Rate of Return
S/s	Sub Station
SBI	State Bank of India
T&D	Transmission & Distribution
UI	Unscheduled Interchange

1. INTRODUCTION

1.1 Historical Perspective

The Department of Power of The State of Nagaland is responsible for power supply in the state of Nagaland. DPN has generation capacity of 27.50 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 projected 2,98,264 consumers with an annual energy consumption of 595.14MUs for the FY 2018-2019. These consumers can be broadly classified into following five categories:

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

1.2 NERC Formation

In exercise of the powers conferred by the Electricity Act 2003 the Government of Nagaland constituted an Electricity Regulatory Commission to be known as “Nagaland Electricity Regulatory Commission” as notified on 21-02-2008.

The Hon’ble Commission is a one-member body designated to function as an autonomous authority responsible for regulation of the power sector in the State of Nagaland. The powers and the functions’ of the Hon’ble Commission are as prescribed in the Electricity Act 2003. The Head Office of the Commission presently is located at Kohima, Nagaland.

The Nagaland Electricity Regulatory Commission started to function with effect from 21-02-2008 with the objectives and purposes for which the Commission has been established.

1.3. Multi Year Distribution Tariff Regulations, 2016

DPN’s tariff determination is governed by “Nagaland Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2016” (referred to as “MYT Regulations, 2016”) which came into force from 21.04.2016. The 1st control period as per the MYT Regulations was for 3 years from FY 2016-17 to FY 2019-20. The 2nd control period shall be for 5 years i.e FY 2020-21 to FY 2024-25. The MYT Regulations, 2016 provide a framework for calculating tariffs on a cost-plus basis and allow the licensee to recover operational expenses including depreciation, interest on working capital and debt, and return on equity amongst others. The MYT Regulations, 2016 segregate the items impacting tariffs into controllable and uncontrollable factors. Items that are uncontrollable are passed through to the consumers. Further, the MYT Regulations, 2016 identifies the uncontrollable and controllable parameters as follows:

1.3.1. Uncontrollable factors

The “uncontrollable factors” comprises of the following factors:

- (i) Force Majeure events;
- (ii) Change in law, judicial pronouncements and Orders of the Central Government, State Government or Commission;

- (iii) Variation in the price of fuel and/or price of power purchase according to the FPPPA formula approved by the Commission from time to time;
- (iv) Variation in the number or mix of consumers or quantities of electricity supplied to consumers
- (v) Transmission Loss;
- (vi) Variation in market interest rates;
- (vii) Taxes and Statutory levies;
- (viii) Taxes on Income;
- (ix) Non-Tariff Income;

1.3.2. Controllable factors

Controllable factors include, but are not limited to the following:

- (i) Variations in capitalization on account of time and/or cost overruns/ efficiencies in the implementation of a capital expenditure project not attributable to an approved change in scope of such project, change in statutory levies or force majeure events;
- (ii) Variation in Interest and Finance Charges, Return on Equity, and Depreciation on account of variation in capitalisation, as specified in clause(i) above;
- (iii) Variations in technical and commercial losses of Distribution Licensee;
- (iv) Variations in performance parameters;
- (v) Variations in working capital requirements;
- (vi) Failure to meet the standards specified in the Nagaland Electricity Regulatory Commission (Standard of Performance for Distribution and Transmission) Regulations, 2011, as amended from time to time except where exempted in accordance with those Regulations;
- (vii) Variations in labour productivity;
- (viii) Variation in operation & maintenance expenses;
- (ix) Variation in Wires Availability.

1.4. Filing of Business Plan & ARR for 5-Year MYT Control Period from FY 2020-21 to 2024-25 & Tariff Proposal for the FY 2020-21

DPN hereby submits its Business Plan & MYT petition for approval of ARR for the second control period i.e. FY 2020-21 to FY 2024-25 & Tariff proposal for the FY 2020-21. It is being submitted in compliance with the provisions of MYT Regulations, 2016.

2. OVERALL APPROACH FOR PRESENT FILING

2.1 Business Plan, ARR for 5-Year MYT Control Period from FY 2020-21 to FY 2024-25 & Tariff proposal for the FY 2020-21

DPN hereby submits its Business Plan & MYT petition for approval of ARR for the second control period i.e. FY 2020-21 to FY 2024-25 & Tariff proposal for the FY 2020-21. This Plan is being submitted in compliance with the provisions of MYT Regulations, 2016. The petitioner is attempting to comply with the various guidelines in the EA Act, 2003 and NERC regulations within the limitations of availability of data

DPN is filing the petition based on the past performance and expected changes in each element of cost and revenue during each year of the control period. DPN has studied the past trends and has taken cognizance of other internal and external developments to estimate the likely performance during the control period i.e. FY 2020-21 to FY 2024-25.

2.2 Approach for the Filing

The subsequent sections provide projection for various expenses, the proposed investment plan for the control period and the expected revenue projections.

Projections of various cost components required for determination of Aggregate Revenue Requirement along with the rationale for estimation of such cost, the philosophy adopted by DPN for projecting sales, number of consumers and generation & purchase cost for the control period has been covered in various sections.

For the purpose of projecting the financial & technical parameters, DPN has considered its actual performance during FY 2015-16, FY 2016-17, FY 2017-18, FY 2018-19 and FY 2019-20(H1) as base and has projected the figures for the control period with supporting rationales.

3. Review of ARR for FY 2019-20

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 2017-18 to FY 2019-20 along with requisite details as provided in NERC (Multi-Year Tariff) Regulations 2016. The Hon'ble Commission in the MYT Order dated 28-03-2017 had approved ARR for the Control Period of FY 2017-18 to FY 2019-20 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 2019-20 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.

3.1 Energy sales

The sales for the FY 2019-20 have been estimated based on CAGR of actual sales for the FY 2012-13 to FY 2018-19. The CAGR for past five/three/one-year growth have been applied appropriately on the actual sales for the FY 2018-19 to arrive at the estimated sales for the FY 2019-20. The calculation of five/three/one-year CAGR is provided at Table 15 & 16 of para 4.1.1 of this petition. The approved and estimated sales for full year and actual sales for six months of FY 2019-20 is given in the table below:

Table 1: Energy sales for FY 2019-20 (MUs)

S. No.	Categories	Approved in T.O. dated 28th March 2017	Approved in T.O. dated 23rd April 2019	Estimated for FY 2019-20
1	Domestic including BPL	316.28	386.58	369.47
2	Commercial	120.99	101.74	90.39
3	Industrial	110.81	74.74	52.18
4	Public Lighting	16.11	18.50	14.42
5	Public Water Works	7.85	12.78	12.16
6	Irrigation & Agriculture	0.05	0.02	0.02
7	Bulk Supply	150.57	118.83	88.55
8	Power Trading			44.35
	Grand Total	722.65	713.19	671.55

It is submitted that the Hon'ble Commission may kindly consider and approve the revised estimates of sales for the FY 2019-20.

3.2 Intra-state T&D Losses

As per the Tariff Order dated 28-03-2017 the T&D loss as approved by the Commission for FY 2018-19 is 24% (21% 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 2019-20. As discussed in the previous chapter, DPN has highlighted 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. 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 demand is from 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.

DPN shall make all efforts to achieve the T&D loss target as set by the Hon'ble Commission, however, in view of the above submission the Hon'ble Commission may kindly consider & revise the loss target to a level which is achievable under the circumstances detailed above.

3.3 Energy Requirement

For computation of energy requirement, DPN has estimated inter-state transmission losses as approved in the tariff order for the FY 2019-20.

The revised energy balance for FY 2019-20 is as given in the table below, the Hon'ble Commission is requested to approve the same:

Table 2: Energy Balance for FY 2019-20

Energy Available	FY 2019-20
Energy Sales	671.55
Distribution Loss %	21.00
Distribution Loss (MUs)	178.51
Total Energy Requirement	850.06
Energy Availability	
Own Generation	91.00
Power from ER	93.50
ER Total Loss (%)	2.26
Regional Loss (MUs)	2.11
Net Energy from ER (MU's)	91.39
Power from NER	576.63
Total Power purchased	668.02
NER Tr. Loss %	2.66
NER Tr. Loss	17.77
Net Energy Available	650.25
Over Drawn/Shortterm	135.10
Total Energy Available at state periphery	876.35
Intra State Tr. Loss @3%	26.29
Net Energy available for Sale	850.06
Demand Supply (Gap) / Surplus	0.00

3.4 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, NEEPCO and other Sources such as bilateral agreement, banking arrangement, power exchange, UI etc.

For the purpose of review of FY 2019-20, DPN has considered actual six months power availability from various sources including short- term sources and balance six months availability has been computed based on the firm and unallocated power allocation from the various Central Generating Stations as per the revised allocation statement issued by North Eastern Regional Power Committee.

Shortfall in power from allocations, if any, based on the estimated sales and losses for FY 2019-20 has been considered to be procured from short term sources i.e. power exchange, other trading etc.

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 2019-20 is computed based on the estimated units to be procured from the generating stations as per the allocations.

- a. The fixed cost for each plant is computed based upon the plant wise actual fixed charges for the FY 2018-19 & H1 of FY 2019-20.
- b. The variable charge for the thermal plants has been considered based on the actual variable charge during the first six months of FY 2019-20.

- c. The generation units available from thermal plants are computed considering the actual power available during the FY 2018-19 & H1 of FY 2019-20. For hydel plants, the design energy or actual generation in the past three years has been considered as the basis for projections.
- d. The deficit in energy is proposed to be met through short term power.
- e. PGCIL, NRLDC and reactive Energy charges are computed based upon the half yearly figures available and have been pro-rated for the balance period.

Based on the actual six months power purchase cost and projected six months power purchase quantum and cost, 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 2019-20

Particulars	Approved in T.O. dated 28th March 2017		Approved in T.O. dated 23rd April 2019		Estimated for FY 2019-20	
	Units (in MUs)	Cost (in Rs. Cr.)	Units (in MUs)	Cost (in Rs. Cr.)	Units (in MUs)	Cost (in Rs. Cr.)
NEEPCO						
Khandang	12.44	2.89	16.75	3.89	16.75	109.04
Koppili - I	45.91	5.01	63.34	6.90	63.34	
Koppili - II	5.96	1.41	6.31	1.49	6.31	
Ranganadi	77.35	25.33	73.94	24.25	73.94	
Doyang	10.16	5.26	15.48	8.02	15.48	
Free Power	20.43		31.19		31.19	
NEEPCO - Gas Based						
AGBPP	106.87	50.49	79.62	37.58	79.62	
AGTPP	40.03	22.34	34.22	19.09	34.22	
NHPC						
Loktak	36.99	16.04	55.04	23.89	55.04	14.63
NTPC						
Farakka	45.94	19.63	40.79	17.42	40.79	89.76
Kahalgaon	28.59	11.04	23.52	9.08	23.52	
Talcher	32.05	8.86	29.19	8.06	29.19	
BGTTP	45.74	39.59	69.64	60.24	69.64	
ONGCTPC						
PALATANA	136.84	49.33	131.09	47.19	131.09	29.33
OTHER						
GEPL	62.93	19.85	-	-		
PTC	12.02	4.68	-	-		

Particulars	Approved in T.O. dated 28th March 2017		Approved in T.O. dated 23rd April 2019		Estimated for FY 2019-20	
	Units (in MUs)	Cost (in Rs. Cr.)	Units (in MUs)	Cost (in Rs. Cr.)	Units (in MUs)	Cost (in Rs. Cr.)
APPCPL						
DEVIATION/SHORTTERM	154.30	42.59	182.05	50.25	135.10	32.78
Total	874.54	324.34	852.17	317.34	805.23	275.54
REC Purchase		0.80		5.50		
Total power purchase	874.54	325.14	852.17	322.85	805.23	275.54
PGCIL- Transmission Charges		44.73		38.66		40.35
NERLDC Charges		0.98		0.52		0.50
Grand Total	874.54	370.85	852.17	362.03	805.23	316.40

In view of above, DPN proposes total power purchase units of 805.23 MUs and power purchase cost of Rs. 316.40 Crores for the FY 2019-20.

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

3.5 Cost of Generation

DPN has it's won 24 MW Likimro HEP. DPN does not propose to revise the cost of generation approved by the Hon'ble Commission for the FY 2019-20 is provided below. Hon'ble Commission may kindly consider and approve the same.

Table 4: Approved and Estimated Cost of Generation for FY 2019-20 (Rs Crores)

Particulars	Approved as per T.O. dated 28th March 2017	Approved in T.O. dated 23rd April 2019	Estimated for FY 2019-20
Cost of Generation	16.81	16.96	16.78

3.6 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 2019-20 based on the actual for the period April 2019 to September, 2019 and projected figures for the period of October, 2019 to March, 2020.

The actual O&M expenses for first six months of FY 2019-20 under the three heads Employee expenses, R&M expenses and A&G expenses are summarized in table below:

Table 5: Actual O&M Expense for six months of FY 2019-20 (Rs. Crore)

Particulars	Approved as per T.O. dated 28th March 2017	Approved in T.O. dated 23rd April 2019	Actual FY 2019-20 (Apr-Sep)
Employee Expenses	113.78	113.78	58.26
R&M Expenses	6.39	26.67	15.88
A&G Expenses	3.46	2.67	1.27
Total O&M Expenses	123.63	143.12	75.40

Based on the actual for the FY 2018-19 & 1st six months of FY 2019-20, the estimated figures of various heads under O&M expenses for the FY 2019-20 are provided in the table below along with the respective approved expenses:

Table 6: Approved and Estimated O&M Expenses for FY 2019-20 (Rs Crores)

Particulars	Approved as per T.O. dated 28th March 2017	Approved in T.O. dated 23rd April 2019	Estimated for FY 2019-20
Employee Expenses	113.78	113.78	129.46
R&M Expenses	6.39	26.67	39.70
A&G Expenses	3.46	2.67	3.17
Total O&M Expenses	123.63	143.12	172.33

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

3.7 Capital Expenditure and Capitalization

The Hon'ble Commission had approved a capital expenditure of Rs. 906.90 Crores for FY 2019-20. DPN plans to meet the approved capital expenditure during the financial year.

3.8 GFA and Depreciation

DPN has considered the opening GFA of Rs. 2115.50 Crores for the FY 2018-19 and considered the actual additions of Rs. 106.19 Crores during the year to arrive at the opening GFA of Rs.2221.69 Crores for the FY 2019-20.

For the FY 2019-20, 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 GFA as projected in the table below:

Table 7: Approved and Estimated Assets Addition for FY 2019-20 (Rs Crores)

Particulars	Approved in T.O. dated 28th March 2017	Approved in T.O. dated 23rd April 2019	FY 2018-19 (Actual)	Estimated for FY 2019-20
Opening GFA	2,221.69	2,221.69	2,115.50	2,221.69
Asset Capitalized	906.90	906.90	106.19	906.90
Closing GFA	3,128.59	3,128.59	2,221.69	3,128.59

The petitioner submits that it has initiated activities with respect to the preparation/up-dation of Fixed Asset Register for the FY 2016-17, FY 2017-18 & FY 2018-19. The FAR for the FY 2016-17 & FY 2017-18 shall be submitted shortly while the FAR for the FY 2018-19 shall be submitted along with the next tariff petition. DPN requests the Hon'ble Commission to consider & approve the same.

Depreciation has been calculated based on the opening GFA & proposed additions during the FY 2019-20 at the rate prescribed in the MYT Regulations. The approved and revised depreciation for FY 2019-20 is provided below:

Table 8: Approved and Estimated Depreciation for FY 2019-20 (Rs Crores)

Particulars	Approved in T.O. dated 28th March 2017	Approved in T.O. dated 23rd April 2019	Estimated for FY 2019-20
Opening Assets at the Beginning of the year	2,221.69	2,221.69	2,221.69
Addition of assets during the year	906.90	906.90	906.90
Gross Fixed assets at the end of the year	3,128.59	3,128.59	3,128.59
Depreciation for the year	97.20	97.20	93.90

3.9 Interest on Loan

In line with the methodology adopted by DPN for consideration of GFA as detailed above, the opening normative loan has also been considered on the same lines. The opening normative loan has been considered at 70% of opening GFA for the FY 2018-19. Further, 70% of the actual assets capitalized for the FY 2018-19 & approved capitalisation for the FY 2019-20 has been considered for arriving at the total normative loan for the FY 2019-20.

Repayment of the normative loan during FY 2019-20 has been considered equivalent to the depreciation in line with the MYT Regulations.

Since, there is no actual loan for DPN the interest at the SBI Bank rate of 13.80% as on April 1st, 2019 has been applied on the average normative debt in order to project the interest on normative loans for FY 2019-20. The Hon'ble Commission is requested to approve the interest on normative loans as computed in the table below:

Table 9: Estimated Interest on Normative Loan for FY 2019-20 (Rs Crores)

Particulars	Approved in T.O. dated 28th March 2017	Approved in T.O. dated 23rd April 2019	Estimated for FY 2019- 20
Opening Normative Loan	0.00	0.00	1,555.18
Add: Normative Loan during the year (70% of proposed capitalization)			634.83
Less: Opening Cumulative repayments			270.17
Less: Normative Repayment (Equivalent to Depreciation for the year)			93.90
Closing Normative Loan			1,825.94
Average Normative Loan			1,690.56
Rate of Interest (SBI			13.80%
Interest on Normative Loan			233.30

3.10 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 1st April, 2019 13.80% is considered for computation of interest on working capital. The DPN requests the Commission to approve the revised working capital requirement and interest computed as per the MYT regulations. The approved & revised projection of IWC is summarized in the table below:

Table 10: Interest on Working Capital for FY 2019-20 (Rs. Crores)

Particulars	Approved in T.O. dated 28th March 2017	Approved in T.O. dated 23rd April 2019	Estimated for FY 2019-20
Receivables equivalent to 1 month of expected revenue from sale of electricity at prevailing rates	51.89	30.90	30.36
Maintenance of spares at 1% of historical costs of fixed assets	19.44	31.29	22.22
O&M Expenses for one month	11.70	11.93	14.36
Amount held as Security Deposit in Cash	0	0	0.00
Total Working Capital after deduction of Consumer Security Deposit	83.04	74.11	66.94
SBI Base Rate (%)	14.75%	13.45%	13.80%
Interest on Working Capital	12.25	9.97	9.24

3.11 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 relatable 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”

In line with the methodology adopted by DPN for calculation of normative loan as detailed above, the opening equity has also been considered on the same lines. The opening normative equity has been considered at 70% of opening GFA for the FY 2018-19. Further, 70% of the actual assets capitalized for the FY 2018-19 & approved capitalisation for the FY 2019-20 has been considered for arriving at the total normative equity for the FY 2019-20.

Rate of return on equity is considered 15.50% as per provision 26 of the MYT regulations 2016. The proposed RoE for FY 2019-20 is as below:

Table 11: Estimated Return on Equity for FY 2019-20 (Rs Crores)

Particulars	Approved in T.O. dated 28th March 2017	Approved in T.O. dated 23rd April 2019	Estimated for FY 2019-20
Opening Equity	0.00	0.00	666.51
Addition in Equity			272.07
Closing Equity			938.58
Average Equity Amount			802.54
Reasonable return @ 15.50%			124.39

3.12 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 2019-20. Hon’ble Commission may allow the same.

3.13 Non-Tariff Income

DPN has estimated the Non-Tariff Income for the FY 2019-20 on the basis of the actual NTI for the FY 2018-19. The revised estimate of the NTI is submitted below. The actual shall be submitted for true-up along with the audited accounts. Hon’ble Commission may kindly consider the same.

Table 12: Approved and estimated Non-Tariff Income for FY 2019-20 (Rs Crores)

Particulars	Approved in T.O. dated 28th March 2017	Approved in T.O. dated 23rd April 2019	Estimated for FY 2019- 20
Non-Tariff Income	10.87	10.87	12.61

3.14 Revenue on Current Tariff

The revised estimation of revenue based on the estimated sales and approved tariff for FY 2019-20 is provided in the table below:

Table 13: Approved and Estimated Revenue on Existing Tariff for FY 2019-20 (Rs Crores)

S. No.	Category / Slab of Consumers		Approved in T.O. dated 23rd April 2019	Estimated for FY 2019-20
1	Domestic		125.18	124.56
2	Industrial		45.89	32.93
3	Bulk Supply		74.86	55.79
4	Commercial		72.78	65.04
5	Public water works & sewage		8.43	8.03
6	Public Lighting		4.23	2.79
7	Agriculture		0.01	0.01
8	Single Point Metered Rural		67.65	64.66
9	Single Point Metered Urban		11.05	10.56
10	Total		410.08	364.37

3.15 Estimated Aggregate Revenue Requirement and Gap for FY 2019-20

Based on the revised ARR and revenue projection, the proposed revenue deficit for FY 2019-20 is submitted as below:

Table 14: Estimated Aggregate Revenue Requirement and Surplus for the FY 2019-20 (Rs Crores)

S. No.	Particulars	Approved in T.O. dated 28th March 2017	Approved in T.O. dated 23rd April 2019	Estimated for FY 2019-20
1	Cost of power purchase	325.14	322.85	275.54
2	Cost of Generation	16.81	16.96	16.78
3	Operation & Maintenance Expenses	123.63	143.12	172.33
4	Transmission charges	45.71	39.18	40.86
5	Interest and finance charges			233.30
6	Depreciation	97.20	97.20	93.90
7	Interest on working capital	12.25	9.97	9.24
8	Return on Equity	-	-	124.39
9	Total Revenue Requirement (1 to 8)	620.74	629.27	966.33
10	Less: Non-Tariff Income	10.87	10.87	12.61
11	Net Revenue Requirement (9-10)	609.86	618.40	953.72
12	Revenue from retail sales		410.08	364.37
13	Revenue Surplus/(Gap) for the Year (12 -11)		(208.32)	(589.35)

The revenue deficit determined for the FY 2019-20 amounts to Rs. 589.35 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.

4. AGGREGATE REVENUE REQUIREMENT FOR CONTROL PERIOD FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 AND 2024-25

This section outlines the Aggregate Revenue Requirement of the DPN for control period i.e. FY 2020-21 to FY 2024-25, which takes into consideration:

- i. Actual Performance in FY 2015-16, FY 2016-17, FY 2017-18 & FY 2018-19;
- ii. Estimated Performance for FY 2019-20 based on the Actual performance for the period 01.04.2019 to 30.09.2019;
- iii. Projection based on the Actual performance in FY 2015-16, FY 2016-17, FY 2017-18 & FY 2018-19 and estimated performance in FY2019-20;
- iv. Principles outlined in Tariff Regulations of NERC.

Past trends have been taken into cognizance in case of certain elements as deemed necessary. The present section has been structured in the following manner:

- Determination of Energy Requirement
 - Sales Projections
 - Loss Trajectory
 - Energy Balance
- Proposed Capital Expenditure and capitalization
 - Scheme wise details
 - Capital Expenditure
 - Asset Capitalisation
- Determination of the Aggregate Revenue Requirement
 - Power Generation/Purchase Costs
 - Transmission Charges
 - Operation and Maintenance Expenses
 - Depreciation
 - Interest charges (including interest on working capital)
 - Return on NFA
 - Provision for Bad and Doubtful Debts
 - Return on Equity

4.1 Energy Requirement

The energy requirement of the license area is determined based on the expected sales in the area during the period under consideration and the expected distribution losses in the network. Accordingly, the energy requirement projected by the DPN for the control period i.e. FY 2020-21 to FY 2024-25 is as given in the succeeding paragraphs.

4.1.1 Approach for Sales Projection

The consumer base of DPN consists of Domestic, Commercial and Industrial, consumers. Sales mix is primarily dominated by Domestic consumers, followed by Commercial consumers. Thus, the sales forecast would completely depend on the sales expected in the Domestic & Commercial Category.

The sales for the control period FY 2020-21 to FY 2024-25 has been projected based on CAGR of actual sales for the FY 2012-13 to FY 2018-19. The CAGR for past five/three/one-year growth have been applied appropriately on the actual sales for the FY 2018-19 to arrive at the projected sales for the control period FY 2020-21 to FY 2024-25. The calculation of five/three/one-year CAGR is provided in the Table below.

Table 15: Calculation of CAGR – for projection of Energy Sales

S. No.	Categories	FY13	FY14	FY15	FY16	FY17	FY18	CAGR for 5 Years	CAGR for 3 Years	CAGR for 2 Years	CAGR for 1 Years	CAGR Used
1	Domestic including BPL	232.53	269.80	298.51	284.48	342.00	348.60	8.44%	5.31%	10.70%	1.93%	5.31%
2	Commercial	39.87	52.99	64.68	82.64	82.58	84.88	16.31%	9.48%	1.35%	2.79%	9.48%
3	Industrial	17.82	25.15	51.29	63.36	61.29	64.29	29.25%	7.82%	0.73%	4.89%	0.73%
4	Public Lighting	5.27	4.90	9.48	11.00	14.60	15.80	24.56%	18.56%	19.85%	8.22%	24.56%
5	Public Water Works	3.07	3.10	4.67	4.59	9.24	10.56	28.03%	31.25%	51.68%	14.29%	28.03%
6	Irrigation & Agriculture	0.04	0.02	0.02	0.02	0.02	0.02	12.94%	0.00%	0.00%	0.00%	0.00%
7	Bulk Supply	51.48	64.90	81.52	102.84	100.10	102.20	14.70%	7.83%	-0.31%	2.10%	-0.31%
8	Outside state	30.97	23.81	12.07	23.68	25.00	29.52	-0.95%	34.73%	11.65%	18.08%	0.00%
9												
10	Total	381.05	444.67	522.24	572.6	634.83	655.87					

4.1.2 Category wise Sales Forecast

Based on the methodology outlined above, the projected energy sales of various categories of consumers FY 2020-21 to FY 2024-25 are given below:

Table 16: Projected Energy Sales – FY 2020-21 to FY 2024-25

S. No.	Categories	18-19 (Actual)	19-20 (Estimated)	20-21 (Projected)	21-22 (Projected)	22-23 (Projected)	23-24 (Projected)	24-25 (Projected)
1	Domestic including BPL	350.85	369.47	389.08	409.72	431.47	454.36	478.47
2	Commercial	82.56	90.39	98.96	108.34	118.62	129.87	142.18
3	Industrial	51.80	52.18	52.56	52.95	53.34	53.73	54.13
4	Public Lighting	11.58	14.42	17.97	22.38	27.87	34.72	43.24
5	Public Water Works	9.50	12.16	15.57	19.94	25.52	32.68	41.84
6	Irrigation & Agriculture	0.02	0.02	0.02	0.02	0.02	0.02	0.02
7	Bulk Supply	88.83	88.55	88.28	88.00	87.73	87.45	87.18
8	Outside state	44.35	44.35	44.35	44.35	44.35	44.35	44.35
9	Total	639.49	671.55	706.78	745.70	788.92	837.18	891.41

It is requested that the Hon'ble Commission may kindly consider & approve the sales as projected above for the MYT control period.

4.1.3 Number of Consumers

The number of consumers for the control period FY 2020-21 to FY 2024-25 has been projected based on CAGR of actual number of consumers for the FY 2012-13 to FY 2018-19. The CAGR for past five/three/one-year growth have been applied appropriately on the actual number of consumers for the FY 2018-19 to arrive at the projected number of consumers for the control period FY 2020-21 to FY 2024-25. The calculation of five/three/one-year CAGR is provided is provided in the Table below. The number of consumers projected for the FY 2020-21 to FY 2024-25 are tabulated below:

Table 17: Calculation of CAGR – for projection of No. of Consumers

S. No.	Categories	FY13	FY14	FY15	FY16	FY17	FY18	CAGR for 5 Years	CAGR for 3 Years	CAGR for 1 Years	CAGR Used
1	Domestic including BPL	1,80,000	1,93,672	2,09,019	2,42,270	2,51,173	2,58,429	7.50%	7.33%	2.89%	7.50%
2	Commercial	18,800	18,836	19,181	19,846	21,968	22,071	3.26%	4.79%	0.47%	3.26%
3	Industrial	2,400	2,426	2,604	2,896	4,677	4,690	14.34%	21.67%	0.28%	14.34%
4	Public Lighting	600	600	600	600	621	621	0.69%	1.15%	0.00%	0.69%
5	Public Water Works	30	30	30	30	34	38	4.84%	8.20%	11.76%	0.00%
6	Irrigation & Agriculture	2	2	1	1	1	1	-12.94%	0.00%	0.00%	0.00%
7	Bulk Supply	700	718	775	1,050	1,500	1,522	16.81%	25.23%	1.47%	16.81%
8	Total	2,02,532	2,16,284	2,32,210	2,66,693	2,79,974	2,87,372				

Based on the methodology outlined above, the projected energy sales of various categories of consumers FY 2020-21 to FY 2024-25 are given below:

Table 18: No. of Consumers – FY 2020-21 to FY 2024-25

S. No.	Categories	18-19 (Actual)	CAGR Used	20-21 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
1	Domestic including BPL	2,68,719	7.50%	2,88,876	3,10,546	3,33,841	3,58,883	3,85,804	4,14,745
2	Commercial	22,194	3.26%	22,918	23,665	24,436	25,233	26,056	26,905
3	Industrial	4,729	14.34%	5,407	6,182	7,069	8,082	9,241	10,566
4	Public Lighting	621	0.69%	625	630	634	638	643	647
5	Public Water Works	38	0.00%	38	38	38	38	38	38
6	Irrigation & Agriculture	1	0.00%	1	1	1	1	1	1
7	Bulk Supply	1,962	16.81%	2,292	2,677	3,127	3,652	4,266	4,983
8	Total	2,98,264		3,20,157	3,43,738	3,69,146	3,96,528	4,26,049	4,57,885

It is requested that the Hon'ble Commission may kindly consider & approve the number of consumers as projected above for the MYT control period.

4.1.4 Distribution Losses

DPN has been trying to reduce the distribution losses during recent years. DPN submits that the system improvement works executed every year under the plan schemes have also contributed to the reduction of distribution losses. However, it may also be noted that reduction of distribution losses may not be possible beyond a certain level due to topographical conditions and technical limitations. The distribution losses in the DPN distribution network have been in the range of approximately 25% to 30% in the past. For the purpose of FY 2020-21 to FY 2024-25, the losses have been retained in the range of 20.75% to 19.25%.

4.1.5 Energy Requirement & Sources of Power Purchase

Accordingly, the energy requirement for DPN is estimated based on the retail sales projections, grossed up by estimated loss levels. The energy balance expected for the FY 2020-21 to FY 2024-25 is as given below:

Table 19: Energy Requirement – FY 2020-21 to FY 2024-25

Particulars	FY 18-19 (Actual)	19-20 (Estimated)	20-21 (Projected)	21-22 (Projected)	22-23 (Projected)	23-24 (Projected)	24-25 (Projected)
Energy Sales	639.49	671.55	706.78	745.70	788.92	837.18	891.41
Distribution Loss %	22.54%	21.00	20.75%	20.50%	20.25%	20.00%	19.25%
Distribution Loss (MUs)	186.04	178.51	185.06	192.29	200.32	209.29	212.50
Total Energy Requirement	825.53	850.06	891.84	937.99	989.24	1,046.47	1,103.92
Energy Availability							
Own Generation	90.01	91.00	91.00	91.00	90.00	90.00	90.00
Power from ER	102.55	93.50	93.50	93.50	93.50	93.50	93.50
ER Total Loss (%)	2.26%	2.26%	2.26%	2.26%	2.26%	2.26%	2.26%
Regional Loss (MUs)	2.32	2.11	2.11	2.11	2.11	2.11	2.11
Net Energy from ER (MU's)	100.23	91.39	91.39	91.39	91.39	91.39	91.39
Power from NER	681.63	576.63	576.63	576.63	576.63	576.63	576.63
Total Power purchased	781.86	668.02	668.02	668.02	668.02	668.02	668.02
NER Tr. Loss %	2.66%	2.66%	2.66%	2.66%	2.66%	2.66%	2.66%
NER Tr. Loss	20.80	17.77	17.77	17.77	17.77	17.77	17.77
Net Energy Available	761.06	650.25	650.25	650.25	650.25	650.25	650.25
Over Drawn/Shortterm	0.00	135.10	172.54	225.74	279.57	338.58	397.80
Total Energy Available at state periphery	851.06	876.35	919.42	967.00	1,019.83	1,078.84	1,138.06
Intra State Tr. Loss @3%	25.53	26.29	27.58	29.01	30.59	32.37	34.14
Net Energy available for Sale	825.53	850.06	891.83	937.99	989.23	1,046.47	1,103.92
Demand Supply (Gap) / Surplus	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The energy requirement of DPN is mainly met from power purchase from Central Generating Stations or from other sources/ open market/ power exchanges etc.

It is requested that the Hon'ble Commission may kindly consider & approve the energy Balance as projected above for the MYT control period.

4.2 Capital Expenditure & Capitalisation

DPN has undertaken significant capital expenditure during FY 2016-17 & FY 2017-18 and has plans to implement schemes for development of infrastructure during the control period FY 2020-21 to FY 2024-25. The infrastructure of DPN is insufficient to cater to the present load and hence to meet the increasing demand, capital expenditure is necessary.

The objective of incurring the capital expenditure is to continue the up-gradation and strengthening of the distribution network to meet the desirable standards of performance and provide better network reliability and sustainable performance to the consumers of DPN.

The capital expenditure plan envisaged will also assist in reducing system losses. The summary of expected capital expenditure for FY 2020-21 to FY 2024-25 is provided in the table below.

Table 20: Capital Expenditure & Capitalisation

Particulars	18-19 (Actual)	19-20 (Estimated)	20-21 (Projected)	21-22 (Projected)	22-23 (Projected)	23-24 (Projected)	24-25 (Projected)
Opening GFA	2,115.50	2,221.69	3,128.59	3,228.59	3,328.59	3,428.59	3,528.59
Asset Capitalized	106.19	906.90	100.00	100.00	100.00	100.00	100.00
Closing GFA	2,221.69	3,128.59	3,228.59	3,328.59	3,428.59	3,528.59	3,628.59

4.3 Aggregate Revenue Requirement for DPN

Based on the provisions of the Tariff Regulations, the estimate for the Aggregate Revenue Requirement (ARR) would consist of the following elements:

- Power Generation/Purchase Costs
- Transmission Charges
- Operation and Maintenance Expenses
- Depreciation
- Interest and Finance charges on Loan Capital
- Interest on working capital
- Bad debts written off if any
- Return on Equity

The above Aggregate Revenue Requirement is netted off for Non-Tariff Income for determining the net ARR for DPN.

4.3.1 Power Generation/Purchase

4.3.1.1 Source of Power

DPN has own generating stations which contributes to energy requirement of the state. Balance requirement of power is met from purchase from Central/State Generating Stations or from other sources/ open market/ power exchanges etc. The present power availability of DPN is as listed below:

Table 21: Power Availability

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	3.53
3		Talcher STPS	Coal	1000.00	0.42	4.20
4		BGTTP	Coal	250.00	4.93	10.70
5	NHPC	Loktak HEP	Hydel	105.00	6.44	6.76
6	NEEPCO	DOYANG HEP	Hydel	75.00	17.97	13.48
7		AGBPP	Gas	291.00	5.81	16.91
8		AGTTP	Gas	84.00	5.74	4.52
9		KHANDONG HEP	Hydel	50.00	6.65	3.33
10		KOPI LI HEP	Hydel	200.00	6.15	12.30
11		RANGANADI HEP	Hydel	405.00	5.34	21.63
12		KOPI LI - II HEP	Hydel	25.00	5.74	1.44
13		PARE	Hydel	110.00	5.40	5.94
14	OTPC	Palatana	Gas	726.00	3.72	27.00
15	LHEP	Own Generation	Hydel	24.00	100.00	24.00

4.3.2 Assumption for Power Purchase Projection

The merit order dispatch principles are typically adopted when determining the power purchases from various generating stations. However, in a power deficit scenario, these principles do not play a significant role as the utilities will try and purchase all the power that is available at its disposal. Accordingly, DPN has considered purchase of the entire power available from all the possible sources during the period to meet the demand to the extent possible.

Power Purchase cost is a function of the energy requirement and price of available power from the different sources for meeting the energy requirement. The energy requirement of DPN for FY 2020-21 to FY 2024-25 is proposed to be met from own generation & power purchase from sources as detailed above.

Power Purchase cost is a function of the energy requirement and price of available power from the different sources for meeting the energy requirement. The energy requirement of DPN for FY 2020-21 to FY 2024-25 is proposed to be met from central generating stations and external power purchase as discussed below.

Power purchase cost for FY 2020-21 to FY 2024-25 is determined on the following parameters:

- The quantum of power allocated to DPN from central generating station is based on the declared allocation;
- Power purchases from the CGS stations are accounted at the net energy availability at DPN periphery;
- PLF is assumed same as per FY 2018-19;
- Fixed cost, energy charges and other charges for CGSs have been considered with an escalation as per (WPI) over the previous year levels;
- Power purchase from other sources is considered as per the agreement with suppliers after escalating the same at (WPI) year over year to factor in the rise in the rates.

4.3.2.1 Power purchase from CGS Stations

DPN has projected that the quantum of power purchase from CGSs will be based on the firm & infirm allocations. The details of the computation of power purchases from CGS are provided in Format-F1 of the formats submitted along with the filing. For projecting the net energy availability at DPN periphery for the FY 2020-21 to FY 2024-25, the interstate transmission losses has been considered at the loss % approved by the Hon'ble Commission in the Tariff Order for the FY 2019-20.

4.3.2.2 External Power Purchase/ Other Sources

Based on the Energy balance and trend of energy requirement during peak demand period, it is estimated that in addition to the firm as well as infirm allocation of power from various CGS, there will be shortfall of energy requirement during the control period FY 2020-21 to FY 2024-25. This additional energy requirement has to be met from external power purchase source/other sources in order to meet the demand of the consumers. DPN has been continuously experiencing similar shortfall of power in the past which was met through short term procurements as there was no alternate source of power available. This scenario is likely to continue in the control period FY 2020-21 to FY2024-25 also till DPN gets additional allocation from CGS. For the purpose of estimation of power purchase cost, DPN has considered the rates at which power was procured through bilateral agreements/other sources during the FY 2018-19 after escalating the same by (WPI) year over year to factor in the rise in the rates.

Further, Power purchase cost also includes charges towards purchase of REC certificates to meet the RPO obligation. The RPO requirement has been calculated as per the RPO Regulation notified by the Hon'ble Commission.

It is submitted that the department is meeting the Non-solar RPO through generation from its own HEPs. Further, there are surplus units of Renewable energy (hydro sources) which has been adjusted as procurement from Hydro sources for calculation of RPO.

It is submitted that considering the geographical & topographical condition of the state of Nagaland, the Hon'ble Commission may kindly consider and relax the requirement of meeting solar RPO and allow meeting the same with Non-solar sources. The RPO compliance report is being compiled and shall be submitted shortly.

Detailed power station wise units and cost is provided in the Format – F1. Considering the above the Hon'ble Commission is requested to allow the power purchase costs as estimated by DPN for the control period FY 2020-21 to FY 2024-25. Summary of the power purchase units & cost are provided in the tables below:

Table 22: Summary of Power Purchase Units

S. No.	Name of Project	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
	Central Sectors							
1	Farakka STPS	49.15	40.79	40.79	40.79	40.79	40.79	40.79
2	Kahalgao STPS	25.93	23.52	23.52	23.52	23.52	23.52	23.52
3	Talcher STPS	27.47	29.19	29.19	29.19	29.19	29.19	29.19
4	BGTPP	107.46	69.64	69.64	69.64	69.64	69.64	69.64
5	Loktak HEP	49.78	55.04	55.04	55.04	55.04	55.04	55.04
6	DOYANG HEP	20.43	15.48	15.48	15.48	15.48	15.48	15.48
7	AGBPP	79.29	79.62	79.62	79.62	79.62	79.62	79.62
8	AGTPP	34.67	34.22	34.22	34.22	34.22	34.22	34.22
9	KHANDONG HEP	12.95	16.75	16.75	16.75	16.75	16.75	16.75
10	KOPILI HEP	58.37	63.34	63.34	63.34	63.34	63.34	63.34
11	RANGANADI HEP	54.57	73.94	73.94	73.94	73.94	73.94	73.94
12	KOPILI - II HEP	5.14	6.31	6.31	6.31	6.31	6.31	6.31
13	AGTPP 2	-	-	-	-	-	-	-
14	Palatana	200.79	131.09	131.09	131.09	131.09	131.09	131.09
	Others							
15	GEPL	-						
16	PTC	-						
17	APPCPL	31.85						
18	DEVIATION/SHORTTERM	-	135.10	172.54	225.74	279.57	338.58	397.80
19	Free Power	26.34	31.19	31.19	31.19	31.19	31.19	31.19
20	Own Geheration	90.01	91.00	91.00	91.00	90.00	90.00	90.00
	Total	874.18	896.22	933.66	986.86	1,039.69	1,098.70	1,157.92

Table 23: Summary of Power Purchase Cost**(Rs. in Crore)**

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
Total Power Purchase Cost	269.27	275.54	298.86	328.03	359.55	394.93	433.02

It is requested that the Hon'ble Commission may kindly consider and approve the proposed power purchase cost for the control period FY 2020-21 to FY 2024-25

4.3.3 Own Generation

DPN gets power from the Likimro HEP. Details of the Generating Station which has been considered as source of energy in Energy balance is provided in the table below:

Table 24: Details own Generating Stations

Sl. No.	Name of Station	Capacity (MW)
I	Hydel	
1	Likimro HEP	24.00
	Total	24.00

Summary of units generated

The Generation forecast is based on the past generation figures and projected plant availability for the control period. Actual generation for FY 2018-19, estimated generation for the FY 2019-20 & projected generation for the FY 2020-21 to FY 2024-25 is provided in the table below.

Table 25: Power Generation– FY 2020-21 to FY 2024-25

(MUs)

Particulars	18-19 (Actual)	19-20 (Estimated)	20-21 (Projected)	21-22 (Projected)	22-23 (Projected)	23-24 (Projected)	24-25 (Projected)
Cost of Generation	90.01	91.00	91.00	91.00	90.00	90.00	90.00

It is requested that the Hon'ble Commission may kindly consider and approve the proposed own generation for the control period FY 2020-21 to FY 2024-25.

4.3.3.1 Cost of Generation:

It is submitted that the DPN is an integrated utility where by function wise cost details w.r.t all the parameters of ARR are not readily available. The DPN is working on the same and shall submit the segregated accounts and ARR of generation function along with the next petition. The consolidated ARR of DPN is inclusive of the ARR of generation function. It is requested that the Hon'ble Commission may kindly consider and allow the same. However, cost incurred for O&M of the Likimro HEP and identified separately is provided below.

Table 26: Cost of Generation

(Rs. in Crore)

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
Cost of Generation	15.98	16.78	17.62	18.50	19.43	20.40	21.42

Considering the above, the Hon'ble Commission is requested to allow the cost of generation as projected by DPN for the control period FY 2020-21 to FY 2024-25.

4.3.4 Transmission and Other Charges

The Transmission charges payable to PGCIL are estimated based on the quantum of power proposed for wheeling for the control period FY 2020-21 FY 2024-25 & cost actually incurred in FY 2018-19 after escalating the same by 5% year over year to factor in the rise in the rates. Accordingly, the transmission charges for the control period FY 2020-21 to FY 2024-25 are provided in the table below.

Table 27: Transmission Charges

(Rs. in Crore)

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
PGCIL Charges	38.43	40.35	42.37	44.49	46.71	49.05	51.50
SLDC Charges	0.48	0.50	0.53	0.56	0.58	0.61	0.64
Total	38.91	40.86	42.90	45.04	47.30	49.66	52.14

Intra-state transmission charges –

It is stated that as submitted above, the DPN is an integrated utility where by function wise cost details w.r.t all the parameters of ARR are not readily available. The DPN is working on the same and shall submit the segregated accounts and ARR of generation function along with the next petition. The consolidated ARR of DPN is inclusive of the ARR of transmission function. It is requested that the Hon'ble Commission may kindly consider and allow the same.

4.4 Operation and Maintenance Expenses

Operation & Maintenance expense comprise of the following heads of expenditure viz.

- Employee Expenses
- Administration & General Expenses
- Repairs & Maintenance Expenses

The operation & maintenance expense has been arrived at in accordance with the Regulation 89.6 of The Nagaland (Multi Year Tariff) Regulations, 2016. Details of Employee Expenses, Administration & General Expenses & Repairs & Maintenance Expenses are provided in the subsequent sections.

4.4.1 Employee Expenses

The expense head of employee cost consists of salary and allowance, bonus, Leave Travel Concession (LTC) & Honorarium etc. DPN has projected the employee cost in accordance with the Regulation 89.6 of The NERC(Multi Year Tariff) Regulations, 2016. Accordingly, average of the actual expenses for the FY 2016-17, FY 2017-18 & FY 2018-19 has been considered as the employee expenses for the FY 2017-18 and the same has been escalated at the escalation factor of 4% to arrive at the employee expenses for the FY 2019-20. The employee expense for each subsequent year has been determined by escalating the base expenses determined for the FY 2019-20, at the escalation factor of 5.72%. It is therefore kindly requested that Hon'ble Commission may approve the employee expenses as projected.

Table 28: Employee Expenses

Particulars	(Rs. in Crore)						
	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
Employee Expense	123.30	120.53	127.42	134.71	142.42	150.56	159.18

4.4.2 Administration and General Expenses

A&G expenses comprise of the following broad subheads of expenditure, viz.

- Domestic Travelling Expenses
- Office Expenses
- Legal, Regulatory & Consultancy Fees
- Insurance etc.

The expense head of A&G expenses consists of salary and allowance, bonus, Leave Travel Concession (LTC) & Honorarium etc. DPN has projected the A&G expenses in accordance with the Regulation 89.6 of The NERC(Multi Year Tariff) Regulations, 2016. Accordingly, average of the actual expenses for the FY 2016-17, FY 2017-18 & FY 2018-19 has been considered as the A&G expenses for the FY 2017-18 and the same has been escalated at the escalation factor of 4% to arrive at the A&G expenses for the FY 2019-20. The A&G expense for each subsequent year has been determined by escalating the base expenses determined for the FY 2019-20, at the escalation factor of 5.72%. It is therefore kindly requested that Hon'ble Commission may approve the A&G expenses as projected.

Table 29: A&G Expenditure**(Rs. in Crore)**

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
A&G Expense	3.02	3.47	3.67	3.88	4.10	4.33	4.58

4.4.3 Repairs and Maintenance Expenses

DPN has been undertaking various Repairs and Maintenance activities as a step towards improvement of systems, reduction in breakdowns, reduction in response time and increasing preventive maintenance.

DPN has projected the R&M expenses in accordance with the Regulation 89.6 of The NERC(Multi Year Tariff) Regulations, 2016. Accordingly, average of the actual expenses for the FY 2016-17, FY 2017-18 & FY 2018-19 has been considered as the R&M expenses for the FY 2017-18 and the same has been escalated at the escalation factor of 4% to arrive at the R&M expenses for the FY 2019-20. The R&M expense for each subsequent year has been determined by escalating the base expenses determined for the FY 2019-20, at the escalation factor of 5.72%. It is therefore kindly requested that Hon'ble Commission may approve the R&M expenses as projected.

Table 30: Repairs and Maintenance Expenses**(Rs. in Crore)**

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
R&M Expense	38.92	48.37	51.14	54.06	57.15	60.42	63.88

4.4.4 O&M Expenditure as a whole

The overall O&M Expenditure are tabulated below:

Table 31: O&M Expenditure**(Rs. in Crore)**

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
Employee Expense	123.30	120.53	127.42	134.71	142.42	150.56	159.18
R&M Expense	38.92	48.37	51.14	54.06	57.15	60.42	63.88
A&G Expense	3.02	3.47	3.67	3.88	4.10	4.33	4.58
Total O&M Expenses	165.23	172.37	182.23	192.65	203.67	215.32	227.63

It is submitted that DPN is now gearing up for meeting the operational requirement of servicing existing and additional new consumers in line with the Standards of performance which the licensees have to adhere to. Hence, there would be an increase in O&M expenditure to support full-fledged distribution business operations.

It is requested that the Hon'ble Commission may kindly consider & approve the O&M expenditure for the control period FY 2020-21 to FY 2024-25 as projected above.

4.5 Gross Fixed Assets

DPN has projected the Gross Fixed Asset in accordance with the Regulation 23 of The NERC(Multi Year Tariff) Regulations, 2016.

It is submitted that opening value of gross fixed assets (GFA) for 2016-17 has been taken from Fixed Asset Register as on 31.03.2016 and the same has been increased by actual addition during FY 2016-17, FY 2017-18 & FY 2018-19. Thereafter, estimated additions during FY2019-20 & projected additions for the each year of the control period FY 2020-21 to FY 2024-25 have been considered and accordingly, GFA has been computed for FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25.

Table 32: Gross Fixed Assets

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
Opening GFA	2,115.50	2,221.69	3,128.59	3,228.59	3,328.59	3,428.59	3,528.59
Asset Capitalized	106.19	906.90	100.00	100.00	100.00	100.00	100.00
Closing GFA	2,221.69	3,128.59	3,228.59	3,328.59	3,428.59	3,528.59	3,628.59

4.6 Depreciation

DPN has projected the depreciation in accordance with the Regulation 28 of The NERC(Multi Year Tariff) Regulations, 2016.

It is submitted that opening value of gross fixed assets (GFA) & opening accumulated depreciation for 2016-17 has been taken from Fixed Asset Register as on 31.03.2016. Further, depreciation for FY 2016-17 has been calculated at the rates prescribed in the regulations on actual addition during FY 2016-17, FY 2017-18 & FY 2018-19. Thereafter, projected additions for the each year of the control period FY 2020-21 to FY 2024-25 have been considered for the calculating the depreciation for FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

It is submitted that the State of Nagaland has been granted a special status similar to that of other North-Eastern States. Government of India provides special assistance for the development of infrastructure facilities in these States. Accordingly, the infrastructure projects of the State of Nagaland, including those of DPN are being supported by issue of Grants through various Central Government Ministries and Agencies like Ministry of Power (MoP) through schemes of APDRP and RGGVY, Ministry of New and Renewable Energy (MNRE), Ministry of Development of North Eastern Region (DONER) and North Eastern Council (NEC). The assets created out of the grants/funds received as assistance from the central agencies has also been included in the fixed asset after the same has been commissioned.

Details of category wise Assets & Depreciation is provided in the Format –F2 & F2a. Summary of Year wise depreciation is depicted in the table below:

Table 33: Depreciation**(Rs. in Crore)**

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
Depreciation for the year	89.05	93.90	143.43	146.74	150.05	153.36	156.00

It is requested that the Hon'ble Commission may kindly consider & approve the depreciation for the control period FY 2020-21 to FY 2024-25 as projected above.

4.7 Interest and Financial Charges

Regulation 27 of The Joint Electricity Regulatory Commission for Manipur and Nagaland (Multi Year Tariff) Regulations, 2016 provides the methodology for calculation of the Interest & Finance charges. It provides that 30% of the capital employed shall be considered as equity and balance 70% is to be considered as loan. The regulation provides for normative loan irrespective of actual loan availed by the utility. Repayment of loan and interest are also to be considered on normative basis.

In this regard it is submitted that the DPN being a Government Department, the entire capital employed till date has been funded through fund infusion by the Government in form of budgetary support which are generally in the nature of grants. Apart from this, in order to fund the capital projects, DPN has also availed various loans through the State Govt. from REC and PFC etc..

However, for the purpose of tariff, the financial principal of debt-equity ratio of 70:30 as provided in regulation 27 read with regulation 22 has been considered. Table below shows Year wise interest on the loans for the control period FY 2020-21 to FY 2024-25.

Table 34 : Interest on Loan**(Rs. in Crore)**

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
Opening Loan - Gross (70% of the opening GFA)	1480.85	1555.18	2190.01	2260.01	2330.01	2400.01	2470.01
Add:Addition in Loan during the year (70% of proposed capitalization)	74.33	634.83	70.00	70.00	70.00	70.00	70.00
Less: Cumulative Repayment	181.12	270.17	364.07	507.50	654.25	804.30	957.66
Less: Reapayment of Loan (equivalent to depreciation for the year)	89.05	93.90	143.43	146.74	150.05	153.36	156.00
Closing Loan	1285.01	1825.94	1752.51	1675.77	1595.71	1512.36	1426.36
Average Loan	1382.93	1690.56	1971.26	1967.89	1962.86	1956.18	1948.18
Rate of Interest	13.45%	13.80%	13.80%	13.80%	13.80%	13.80%	13.80%
Interest on Normative Loan including bank charges	186.00	233.30	272.03	271.57	270.88	269.95	268.85

It is requested that the Hon'ble Commission may kindly consider & approve the interest on the loans for the control period FY 2020-21 to FY 2024-25 as projected above.

4.8 Interest on Working Capital

The DPN has computed the Interest on Working Capital for the control period FY 2020-21 to FY 2024-25 in accordance with the Regulation 29.4 of The Nagaland (Multi Year Tariff) Regulations, 2016.

As per the Regulations, for the purpose of computation of normative working capital and Interest on working capital, the components of working capital are as follows:

- (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;

Working capital requirement has been calculated as per the above Regulation. Further, Interest is required to be calculated at a rate equal to the State Bank Advance Rate (SBAR) as on 1st April of the financial year in which the Petition is filed. Accordingly, rate of interest has been considered at 13.80% as prevailing on 01.04.2019

Interest on working capital has been calculated accordingly and detailed in the table below:

Table 35: Interest on Working Capital

(Rs. in Crore)

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
Receivables equivalent to 1 month of expected revenue from sale of electricity at prevailing rates	25.16	31.22	32.83	34.60	36.54	38.68	41.05
Maintenance of spares at 1% of historical costs of fixed assets	21.15	22.22	31.29	32.29	33.29	34.29	35.29
O&M Expenses for one month	13.77	14.36	15.19	16.05	16.97	17.94	18.97
Amount held as Security Deposit in Cash	0	0.00	0.00	0.00	0.00	0.00	0.00
Total Working Capital after deduction of Consumer Security Deposit	60.09	67.80	79.31	82.94	86.80	90.91	95.30
SBI Base Rate (%)	13.45%	13.80%	13.80%	13.80%	13.80%	13.80%	13.80%
Interest on Working Capital	8.08	9.36	10.94	11.45	11.98	12.55	13.15

The Hon'ble Commission is requested to kindly approve the interest on working capital as proposed.

4.9 Bad Debts

Regulation 89.8 of The Nagaland (Multi Year Tariff) Regulations, 2016 provides that bad debts written off may be allowed as a pass through in the ARR. DPN is not proposing any provision for bad debts and the same shall be claimed on actual while truing-up exercise.

4.10 Return on Equity

Regulation 26 of The Nagaland (Multi Year Tariff) Regulations, 2016 read with Regulation 22 provides the methodology for calculation of the Return on Equity. It provides that 30% of the capital employed shall be considered as equity and balance 70% is to be considered as loan. Accordingly, Return on Equity for the control period FY 2020-21 to FY 2024-24 has been calculated on 30% of average GFA of the respective year. Return on Equity has been calculated at the rate of 15.5% as provided in the Regulation 26.1 of the MYT Regulations, 2016. The projected Return on Equity for the control period FY 2020-21 to FY 2024-25 is provided in the table below.

Table 36: Return on Equity

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
Opening Equity	634.65	666.51	938.58	968.58	998.58	1,028.58	1,058.58
Addition During the year (30% of Capitalisation)	31.86	272.07	30.00	30.00	30.00	30.00	30.00
Closing Equity	666.51	938.58	968.58	998.58	1028.58	1058.58	1088.58
Average Equity	650.58	802.54	953.58	983.58	1,013.58	1,043.58	1,073.58
Return on Equity@15.50%	100.84	124.39	147.80	152.45	157.10	161.75	166.40

The Hon'ble Commission is requested to kindly approve the Return on Equity as proposed for the control period FY 2020-21 to FY 2024-25.

4.11 Non-Tariff Income

Regulation 90 of The Nagaland (Multi Year Tariff) Regulations, 2016 provides that the Non-tariff income shall be deducted from the ARR in calculating the Tariff. Non-tariff income includes revenue from of Supervision Charges, Meter Rent, Meter testing Charge, disconnection/Reconnection Charge and other departmental charges. The Non-tariff income for the control period FY 2020-21 to FY 2024-25 has been projected by escalating the estimated Non-tariff income of FY 2019-20 by 5% YOY. Accordingly, Non-tariff income for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 is provided in the table below.

Table 37 : Non- Tariff Income

(Rs. in Crore)

Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
Non-Tariff Income	12.01	12.61	13.24	13.91	14.60	15.33	16.10

The Hon'ble Commission is requested to kindly approve the Non-tariff income as proposed for the control period FY 2020-21 to FY 2024-25.

4.12 Aggregate Revenue Requirement

Based on the above estimates and projections, the ARR for DPN for the control period FY 2020-21 to FY 2024-25 works out as under:

Table 38: Annual Revenue Requirement

(Rs. in Crore)

S. No.	Particulars	FY 18-19 (Actual)	19-20 (Est.)	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
1	Cost of power purchase	269.27	275.54	298.86	328.03	359.55	394.93	433.02
2	Cost of Generation	15.98	16.78	17.62	18.50	19.43	20.40	21.42
3	Operation & Maintenance Expenses	165.23	172.37	182.23	192.65	203.67	215.32	227.63
4	Transmission charges	38.91	40.86	42.90	45.04	47.30	49.66	52.14
5	Interest and finance charges	186.00	233.30	272.03	271.57	270.88	269.95	268.85
6	Depreciation	89.05	93.90	143.43	146.74	150.05	153.36	156.00
7	Interest on working capital	8.08	9.36	10.94	11.45	11.98	12.55	13.15
8	Return on Equity	100.84	124.39	147.80	152.45	157.10	161.75	166.40
9	Total Revenue Requirement (1 to 8)	873.37	966.49	1,115.82	1,166.44	1,219.95	1,277.92	1,338.62
10	Less: Non-Tariff Income	12.01	12.61	13.24	13.91	14.60	15.33	16.10
11	Net Revenue Requirement (9-10)	861.35	953.87	1,102.56	1,152.53	1,205.35	1,262.59	1,322.52

It is requested that the Hon'ble Commission may kindly consider & approve the ARR for the control period FY 2020-21 to FY 2024-25 as projected above.

4.13 Revenue at Existing Tariff and Gap

Based on the Aggregate Revenue Requirement and net revenue from existing tariffs for FY 2020-21 the resultant GAP is as shown in the table below:

Table 39: Revenue at Existing Tariff -FY 2020-21 (Rs. Crores)

S. No.	Category / Slab of Consumers	Projected
A	Domestic	131.17
B	Industrial	33.17
C	Bulk Supply	55.61
D	Commercial	71.21
E	Public water works & sewage	10.28
F	Public Lighting	3.10
H	Agriculture	0.01
I	Single Point Metered Rural	68.09
J	Single Point Metered Urban	11.12
K	Total - within the state	383.76
L	Out side state sale	10.25
M	Total Sale	394.01

Table 40: Revenue GAP at Existing Tariff

(Rs. in Crore)

S. No.	Particulars	FY 2020-21
1	Net Revenue Requirement	1,102.56
2	Revenue from retail sales at Existing Tariff	394.01
3	Revenue Surplus/(Gap) for the Year (2-1)	(708.55)

5. Tariff proposal for FY 2020-21

DPN in the previous sections has discussed the estimated performance for the control period based on the past years performances and certain assumptions explained at appropriate places to determine the Aggregate Revenue Required for the period.

5.1 Recovery of Revenue Gap for FY 2020-21

The estimated gap for FY 2020-21 has been computed by deducting the ARR from revenue at existing tariff as detailed above.

DPN does not propose to recover the entire Gap 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 2020-21 for individual categories is given below along with the comparison of existing and proposed energy charges.

Table 41: - Existing v/s Proposed Tariff

SI No.	CATEGORY		Existing Rate Rs./kwh	Proposed Rate Rs./kwh	
1	2		3	4	
A	1	CATEGORY 'A' DOMESTIC			
		(a) 0 to 30 kwh	4.50	4.70	
		(b) 31 to 100 kwh	5.40	5.70	
		(c) 101 to 250 kwh	6.00	6.30	
		(d) > 250 kwh	7.00	7.35	
	2	CATEGORY 'B' INDUSTRIAL			
		(a) < 500 kwh	5.80	6.10	
		(b) 501 to 5000 kwh	6.45	6.80	
		(c) > 5000 kwh	7.20	7.60	
	3	CATEGORY 'C' BULK		6.30	6.60
	4	CATEGORY 'D' COMMERCIAL			
		(a) < 60 kwh	7.00	7.35	
		(b) 61 to 240 kwh	8.10	8.50	
		(c) > 240 kwh	9.15	9.60	

SI No.	CATEGORY	Existing Rate Rs./kwh	Proposed Rate Rs./kwh
5	CATEGORY 'E' P.W.W.	6.60	7.00
6	CATEGORY 'F' Public Light	To be recovered from consumers *	To be recovered from consumers *
7	CATEGORY 'G' INTERSTATE	6.00	6.30
8	CATEGORY 'H' AGRICULTURE	3.10	3.25
9	CATEGORY 'I' TEMPORARY CONNECTION	DLF Rs.10.00 Others Rs.13.00	DLF Rs.11.00 Others Rs. 14.00
10	Kutir Jyoti(point)	Same as DLF	Same as DLF
11	SINGLE POINT METERED RURAL	5.00	5.10
12	SINGLE POINT METERED URBAN	5.50	5.60
*	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

Tariff Schedule for Prepaid Metered Consumers

The Hon'ble Commission has approved the Tariff for prepaid metered consumers in the Tariff Order for the FY 2019-20. The proposed tariff in respect of the prepaid metered consumers for the FY 2020-21 is provided below:

Table 42 - Existing v/s Proposed Tariff for Prepaid Meter

SI No.	CATEGORY	Existing Rate Rs./kwh	Proposed Rate Rs./kwh
1	2	3	4
1	CATEGORY 'A' DOMESTIC		
	All Units	5.00	5.25
2	CATEGORY 'B' INDUSTRIAL		
	All Units	5.80	6.10
3	CATEGORY 'C' BULK		
	All Units	6.30	6.60
4	CATEGORY 'D' COMMERCIAL		
	All Units	7.40	7.75
5	CATEGORY 'H' AGRICULTURE		
	All Units	3.10	3.25

5.2 Revenue at Proposed Tariff

Based on the tariff proposed above, following is the summary of the additional revenue & total revenue at the proposed tariff rates for the FY 2020-21.

**Table 43: Revenue from proposed Tariff – FY 2020-21
(Rs. in Crore)**

S. No.	Category / Slab of Consumers	Projected
A	Domestic	137.97
B	Industrial	34.95
C	Bulk Supply	58.26
D	Commercial	74.76
E	Public water works & sewage	10.90
F	Public Lighting	3.10
G	Agriculture	0.01
H	Single Point Metered Rural	69.45
I	Single Point Metered Urban	11.32
K	Total	400.73
L	Out side state sale	11.30
M	Total Sale	412.03

**Table 44: Additional Revenue from proposed Tariff – FY 2020-21
(Rs. in Crore)**

S. No.	Particular	2020-21
		Projected
1	Revenue from Existing Tariff	394.01
2	Revenue from Proposed Tariff	412.03
3	Additional Revenue from Proposed Tariff (2-1)	18.02

5.3 Impact of Tariff on Consumers

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

Table 45 : Impact of tariff Hike

Sr. No.	Particulars	Units	FY 2020-21	
			Existing	Proposed
1	Net ARR for FY 2020-21	Rs. Crores	1102.56	1102.56
2	Revenue for FY 2020-21	Rs. Crores	394.01	412.03
3	Gap (1-2)	Rs. Crores	708.55	690.53
4	Total Sales	MU's	706.78	706.78
5	Average Cost of Supply (1/4 x 10)	Rs. per kWh	15.60	15.60
6	Average Revenue (2/4 x 10)	Rs. per kWh	5.57	5.83
7	Pure Gap (5-6)	Rs. per kWh	10.03	9.77
8	Average Hike in Tariff			0.25
	Average Hike in %			4.57%

Hence, it is submitted that the average tariff required to recover the gap attributable to FY 2020-21 is Rs. 10.03, but keeping in view the resultant burden on the consumers, the proposed hike has been restricted to Re. 0.25 per unit.

It is prayed to the Hon'ble Commission that considering the above submissions, the tariff proposal of DPN for FY 2020-21 may kindly be approved.

6. WHEELING CHARGES

Wheeling charges has been calculated in accordance with the Regulation 71 read with Regulation 72 of The Nagaland (Multi Year Tariff) Regulations, 2016. Since, the DPN is not maintaining separate accounts for the Distribution Wire Business & Retail Supply Business; the ARR of the wheeling business is arrived at in accordance with the allocation matrix as prescribed in the Regulation 72. The allocation matrix is given as below.

Table 46: Allocation Matrix

Sl. No	Particulars	Wire Business (%)	Retail Supply Business (%)
1	2	3	4
1	Cost of Power Purchase	0	100
2	Stand by Charges	0	100
3	Employee Expenses	60	40
4	Administration & General Expenses	50	50
5	Repair & Maintenance Expenses	90	10
6	Depreciation	90	10
7	Interest on Long-term Loan Capital	90	10
8	Interest on Working Capital and on consumer security deposits	10	90
9	Bad Debts Written off 0% 100% Income Tax	90	10
10	Transmission Charges intra-State	0	100
11	Contribution to contingency reserves, if any	100	0
12	Return on Equity	90	10
13	Non-Tariff Income	10	90

6.1 ARR for Wheeling Business

The ARR of the Wheeling Business for the control period FY 2020-21 to FY 2024-25 arrived at in accordance with the above methodology is provided below:

Table 47 : ARR of Wheeling Business**(Rs. in Crore)**

Sl. No	Particulars	20-21 (Proj.)	20-21 (Proj.)	21-22 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	23-24 (Proj.)	24-25 (Proj.)	24-25 (Proj.)
		Total	Wheeling	Total	Wheeling	Total	Wheeling	Total	Wheeling	Total	Wheeling
1	2	3	4	5	6	7	8	9	10	11	12
1	Cost of power purchase	298.86	0.00	328.03	0.00	359.55	0.00	394.93	0.00	433.02	0.00
2	Cost of Generation	17.62	0.00	18.50	0.00	19.43	0.00	20.40	0.00	21.42	0.00
3	Employee Expenses	127.42	76.45	134.71	80.83	142.42	85.45	150.56	90.34	159.18	95.51
4	Repair & Maintenance Expenses	51.14	46.02	54.06	48.66	57.15	51.44	60.42	54.38	63.88	57.49
5	Administration & General Expenses	3.67	1.83	3.88	1.94	4.10	2.05	4.33	2.17	4.58	2.29
6	Transmission charges	42.90	0.00	45.04	0.00	47.30	0.00	49.66	0.00	52.14	0.00
7	Interest and finance charges	272.03	244.83	271.57	244.41	270.88	243.79	269.95	242.96	268.85	241.96
8	Depreciation	143.43	129.09	146.74	132.07	150.05	135.05	153.36	138.02	156.00	140.40
9	Interest on working capital	10.94	1.09	11.45	1.14	11.98	1.20	12.55	1.25	13.15	1.32
10	Return on Equity	147.80	133.02	152.45	137.21	157.10	141.39	161.75	145.58	166.40	149.76
11	Total Revenue Requirement (1 to 10)	1115.82	632.35	1166.44	646.25	1219.95	660.36	1277.92	674.70	1338.62	688.73
12	Less: Non-Tariff Income	13.24	1.32	13.91	1.39	14.60	1.46	15.33	1.53	16.10	1.61
13	Net Revenue Requirement (11-12)	1102.57	631.03	1152.53	644.86	1205.35	658.90	1262.59	673.17	1322.52	687.12

6.2 Wheeling Tariff

Wheeling Tariff has been calculated on the basis of the ARR for the Wheeling business and total energy sold. Wheeling Tariff is provided in the table below.

Table 48 : Wheeling Tariff

Sl. No.	Particular	20-21 (Proj.)	21-22 (Proj.)	22-23 (Proj.)	23-24 (Proj.)	24-25 (Proj.)
1	ARR for wheeling function (Rs. in Cr.)	631.03	644.86	658.90	673.17	687.12
2	Total Energy sold (MU)	706.78	745.70	788.92	837.18	891.41
3	Wheeling Tariff (Rs./unit)	8.93	8.65	8.35	8.04	7.71

7.1 Tariff Schedule

SI No.	CATEGORY	Proposed Rate Rs./kwh
1	2	3
A	1	CATEGORY 'A' DOMESTIC
	(a) 0 to 30 kwh	4.70
	(b) 31 to 100 kwh	5.70
	(c) 101 to 250 kwh	6.30
	(d) > 250 kwh	7.35
	Monthly minimum charges - Rural	150.00 pm/kw of contract demand or part thereof
	Monthly minimum charges - Urban	200.00 pm/kw of contract demand or part thereof
	2	CATEGORY 'B' INDUSTRIAL
	(a) < 500 kwh	6.10
	(b) 501 to 5000 kwh	6.80
	(c) > 5000 kwh	7.60
	Monthly minimum charges	200.00 pm/kv of contract demand or part thereof
	3	CATEGORY 'C' BULK
	Monthly minimum charges	200.00 pm/kva of contract demand or part thereof
	4	CATEGORY 'D' COMMERCIAL
	(a) < 60 kwh	7.35
	(b) 61 to 240 kwh	8.50
	(c) > 240 kwh	9.60
	Monthly minimum charges	200.00 pm/kw of contract demand or part thereof
	5	CATEGORY 'E' P.W.W.
	Monthly minimum charges	100.00 pm/kva or part thereof
	6	CATEGORY 'F' Public Light
		To be recovered from consumers *
	7	CATEGORY 'G' INTERSTATE
		6.30
	8	CATEGORY 'H' AGRICULTURE
	Monthly minimum charges	75.00 pm/HP or part thereof
	9	CATEGORY 'I' TEMPORARY CONNECTION
		DLF Rs.11.00 Others Rs. 14.00
	10	Kutir Jyoti(point)
		Same as DLF
	11	SINGLE POINT METERED RURAL
		5.10
	12	SINGLE POINT METERED URBAN
		5.60
	*	Charges for public lighting have to be recovered from the Consumers of Domestic, Commercial, Industrial and Bulk categories at the rates shown below:

SI No.	CATEGORY	Proposed Rate Rs./kwh
	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	OTHER CHARGES	
	(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	
	i. Single phase L.T.	150/connection
	ii. Three phase L.T.	250/connection
	iii. H.T. consumers (11KV above)	1500/connection
C	METER RENT	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. 11 kv H.T.	500.00
	v. 33 kv H.T.	750.00
	vi. 66 kv EHV	900.00
	vii. 132 kv EHV	1000.00
D	METER TESTING CHARGES	Rs. per meter per test
	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
E	SECURITY DEPOSIT	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
F	SURCHARGES (DELAYED PAYMENT)	Re.0.10/kwhpm or part thereof
G	BILLING PERIODICALLY	Monthly
H	CHARGES OF POLES USAGE FOR ADVERTISEMENT	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

7.2 Tariff Schedule for Prepaid Meter

Sl. No.	CATEGORY	Proposed Rate Rs./kwh
1	2	3
1	CATEGORY 'A' DOMESTIC	
	All Units	5.25
2	CATEGORY 'B' INDUSTRIAL	
	All Units	6.10
3	CATEGORY 'C' BULK	
	All Units	6.60
4	CATEGORY 'D' COMMERCIAL	
	All Units	7.75
5	CATEGORY 'H' AGRICULTURE	
	All Units	3.25

8. Compliance of Directive

It is submitted that the status of compliance of Directive is being submitted separately is being submitted separately.