

NAGALAND ELECTRICITY REGULATORY COMMISSION



**ORDER ON
REVIEW FOR THE FY 2019-20 & AGGREGATE REVENUE REQUIREMENT
FOR THE FY 2020-21 TO FY 2024-25**

**AND
TARIFF FOR THE FY 2020-21
-FOR-
DEPARTMENT OF POWER
GOVERNMENT OF NAGALAND**

DATED : 20TH MARCH, 2020

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ABBREVIATIONS

Abbreviation	Description
ABT	Availability Based Tariff
A&G	Administration & General
APTEL	Appellate Tribunal For Electricity
ARR	Aggregate Revenue Requirement
CAGR	Compounded Annual Growth Rate
CD	Contract Demand
CERC	Central Electricity Regulatory Commission
CGS	Central Generating Stations
CoS	Cost of Supply
CPSU	Central Power Sector Undertakings
Cr	Crores
Crs	Crores
CT	Current Transformer
CWIP	Capital Work In Progress
DE	Debt Equity
DPN	Department of Power, Govt. of Nagaland
EHT	Extra High Tension
ER	Eastern Region
FAC	Fuel Adjustment Costs
FDR	Fixed Deposits Receipts
FPPCA	Fuel Power Purchase Cost Adjustment
FY	Financial Year
GCV	Gross Calorific Value
GFA	Gross Fixed Assets
HP	Horse Power
HT	High Tension
KV	Kilovolt
KVA	Kilo volt Amps
KW	Kilo Watt
kWh	kilo Watt hour
LNG	Liquefied Natural Gas
LT	Low Tension
MU	Million Units
MVA	Million volt Amps
MW	Mega Watt
MYT	Multi Year Tariff
NER	North Eastern Region
NERC	Nagaland Electricity Regulatory Commission
NTP	National Tariff Policy

O&M	Operation & Maintenance
PLF	Plant Load Factor
PLR	Prime Lending Rate
R&M	Repairs and Maintenance
RIMS	Regulatory Information and Management System
RoR	Rate of Return
Rs.	Rupees
₹	Rupees
S/s	Sub Station
SBI	State Bank of India
SERC	State Electricity Regulatory Commission
T&D	Transmission & Distribution
UI	Unscheduled Interchange
YoY	Year on Year

**Before the
Nagaland Electricity Regulatory Commission
for the State of Nagaland**

Case No.: 01/2020-21.

In the matter of

Petition for determination of Multi Year Aggregate Revenue Requirement (ARR) for the control period of FY 2020-21 to FY 2024-25 & Tariff for the FY 2020-21 and Review for the FY 2019-20 filed by the Department of Power, Government of Nagaland, herein after referred to as 'DPN'---Petitioner.

Present

Er. IMLIKUMZUK AO
Chairman,
NERC, Kohima.

ORDER

(The 20th March, 2020)

1. The Department of Power, Government of Nagaland (herein after referred to as DPN) is a deemed licensee in terms of section 14 of the Electricity Act, 2003 (herein after referred to as Act), engaged in the business of generation, transmission and distribution of electricity in the state of Nagaland.

2. As per the MYT Regulations, 2016, the DPN has filed the Petition for determination of Multi Year Aggregate Revenue Requirement (ARR) for the control period of FY 20 20-21 to FY 2024-25 and Retail Tariff for the FY 2020-21 on 29.11.2018.
3. In exercise of the powers vested under section 62(1) read with section 62(3) and section 64 3(a) of the Electricity Act, 2003 and Regulation 5.2 of NERC MYT Regulations, 2016 (Notified on 21.04.2016) (herein after referred to as Tariff Regulations) and other enabling provisions in this behalf, the Commission issues this order for approval of the ARR for the control period of FY 2020-21 to FY 2024-25 & determination of retail Tariff for the FY 2020-21 and Review for the FY 2019-20 for supply of electricity in the state of Nagaland under NERC (MYT) Regulations, 2016.
4. Tariff Regulations specify that the distribution licensee shall file ARR and Tariff Petition in all aspects along with requisite fee as specified in Commission's fees, fines and charges regulations on or before 30th November of the preceding year. Accordingly, the DPN has filed the ARR for the control period of FY 2020-21 to FY 2024-25 and Tariff Petition for the FY 2020-21.
5. Regulation 17 of the NERC MYT Regulations, 2016 provides for giving adequate opportunities to all stake holders and general public for making suggestions/objections on the Tariff Petition as mandated under section 64(3) of the Electricity Act 2003. Accordingly, the Commission directed DPN to publish the ARR for the control period of FY 2020-21 to FY 2024-25 and Tariff Petition for the FY 2020-21 in an abridged form as public notice in newspapers having wide circulation in the state inviting suggestions/objections on the Tariff Petition .
6. Accordingly, DPN has published the Tariff Petition in the abridged form as public notice in various newspapers on 18th & 19th December, 2019 and the Tariff petition was also placed on the website of DPN. The last date of submission of suggestions/objections was fixed on 18th January, 2020.
7. The Commission, to ensure transparency in the process of Tariff determination and for providing proper opportunity to all stake holders and general public for making suggestions/objections on the Tariff petition and for convenience of the consumers and

general public across the state, decided to hold the public hearing at the headquarters of the state. Accordingly, the Commission held public hearing at Kohima on 4th February, 2020.

8. The proposal of DPN was also placed before the State Advisory Committee in its meeting held on 19th March, 2020 and various aspects of the Petition were discussed by the committee. The Commission took into consideration the deliberations in the State Advisory Committee on the Review for the FY 2019-20, ARR for the control period of FY 2020-21 to FY 2024-25 and Tariff Petition for the FY 2020-21 during the meeting of the committee.
9. The Commission took into consideration the facts presented by the DPN in its Petition and subsequent filings, the suggestions/objections received from stakeholders, consumer organizations, general public and State Advisory Committee and response of the DPN to those suggestions/objections.
10. The Commission taking into consideration all the facts which came up during the public hearing and meeting of the State Advisory Committee, has approved the Review for the FY 2019-20, ARR for the control period of FY 2020-21 to FY 2024-25 and Tariff Petition for the FY 2020-21.
11. The Commission has reviewed the directives issued earlier in the Tariff Order for the FY 2019-20 and noted that some of the directives are complied and some are partially attended. The Commission has dropped the directives complied with and the remaining directives are consolidated and fresh directives are added.
12. This order is in eleven chapters as detailed below:
 1. Chapter 1: Introduction.
 2. Chapter 2: Summary of ARR for the control period of FY 2020-21 to FY 2024-25 and Tariff Petition for the FY 2020-21.
 3. Chapter 3: Power Sector in Nagaland - An overview.
 4. Chapter 4: Public hearing.
 5. Chapter 5: Truing-UP.
 6. Chapter 6: Review for the FY 2019-20.

7. Chapter 7: Analysis of ARR for the control period of FY 2020-21 to FY 2024-25 & Tariff Petition for the FY 2020-21 and approval of the Commission.
8. Chapter 8: Tariff principles and design.
9. Chapter 9: Directives.
10. Chapter 10: Wheeling Charges for the FY 2020-21.
11. Chapter 11: Fuel and Power Purchase Cost Adjustment.
13. The DPN should ensure implementation of the Tariff Order from the effective date after issuance of a public notice in such a font size which is clearly visible in two daily newspapers having wide circulation in the state within a week, and compliance of the same shall be submitted to the Commission.
14. This Order shall be effective from 1st April, 2020 and shall remain in force till 31st March, 2021 or till the next Tariff Order of the Commission.

Sd/-

Er. IMLIKUMZUK AO

Chairman,

NERC, Kohima.

Dated Kohima, the 20th March, 2020.

1. INTRODUCTION

1.1 Nagaland Electricity Regulatory Commission

In exercise of the powers conferred by the Electricity Act, 2003, the State Government of Nagaland constituted an Electricity Regulatory Commission to be known as “Nagaland Electricity Regulatory Commission” for the State of Nagaland, as notified on 21st February, 2008.

The 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 Commission are as prescribed in the Electricity Act, 2003. The head office of the Commission is presently located at Kohima, capital city of the Nagaland State.

The Nagaland Electricity Regulatory Commission for the State of Nagaland started to function with effect from 4th March, 2008 with the objectives and purposes for which the Commission has been established.

The Department of Power, Government of Nagaland herein called DPN, a deemed licensee under section 14 of the Electricity Act, 2003, is carrying on the business of distribution and retail supply of electricity in the state of Nagaland.

1.1.1. In accordance with the provisions of the Act, the Nagaland Commission discharges the following functions:

- a) Determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State: Provided that where open access has been permitted to a category of consumers under Section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;
- b) Regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;

- c) Facilitate intra-State transmission and wheeling of electricity;
- d) Issue licenses to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;
- e) Promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;
- f) Adjudicate upon the disputes between the licensees and generating companies; and to refer any dispute for arbitration;
- g) Levy fee for the purposes of this Act;
- h) Specify State Grid Code consistent with the Grid Code specified under Clause (h) of sub-section(1) of Section 79;
- i) Specify or enforce standards with respect to quality, continuity and reliability of service by licensees;
- j) Fix the trading margin in the intra-State trading of electricity, if considered, necessary;
- k) Discharge such other functions as may be assigned to it under the Act.

1.1.2. Further, the Commission also advises the State Government on all or any of the following matters namely:

- a) Promotion of competition, efficiency and economy in activities of the electricity industry;
- b) Promotion of investment in electricity industry;
- c) Reorganization and restructuring of electricity industry in the State;

- d) Matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that Government.

1.1.3. The State Commission ensures transparency while exercising its powers and discharging its functions.

1.1.4. In discharge of its functions, the State Commission is guided by the National Tariff Policy (NTP) as brought out by GOI in compliance to Section 3 of the Act. The objectives of the NTP are to:

- a) Ensure availability of electricity to consumers at reasonable and competitive rates;
- b) Ensure financial viability of the sector and attract investments;
- c) Promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks;
- d) Promote competition, efficiency in operations and improvement in quality of supply.

1.2 ARR and Tariff Petition

DPN, being an integrated utility, is responsible for generation, transmission, and distribution of electricity in the State of Nagaland.

As per the NERC MYT Regulations, 2016 the licensee was required to submit the ARR for the control period of FY 2020-21 to FY 2024-25 & Tariff Petition for the FY 2020-21 and file the petition in the month of November, 2019 for fixing the Tariff for the FY 2020-21. Accordingly, the DPN has filed the ARR for the control period of FY 2020-21 to FY 2024-25 & Tariff Petition for the FY 2020-21 including Review for the FY 2019-20. In the petition, the DPN has projected with an ARR of ₹ 1,102.56 Crores, ₹ 1,152.53 Crores, ₹ 1,205.35 Crores, ₹ 1,262.59 Crores and ₹ 1,322.52 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively and projected a gap at existing tariff of ₹ 708.55 Crores for the FY 2020-21.

1.3 Admission of the Petition and Public Hearing Process

The Commission observed that the petition filed by the petitioner was lacking crucial and vital information required as specified in Commission's Regulations on Terms and Conditions for Determination of Tariff.

DPN was asked to submit the required information vide letter/e-mail. Pending receipt of additional information, the ARR and Tariff Petition was admitted to avoid delay in processing of ARR.

The Commission directed the DPN to publish the summary of the ARR and Tariff proposal in the abridged form and manner as approved in accordance with section 64 of the Electricity Act, 2003 to ensure public participation.

The notification of the proposed ARR and the Tariff schedule for the FY 2020-21 was published by the DPN in the following newspapers.

Sl. No.	Name of the Newspaper	Language	Date of Publication
1	The Morung Express	English	18 th & 19 th December, 2019
2	Eastern Mirror	English	18 th & 19 th December, 2019
3	Nagaland Post	English	18 th & 19 th December, 2019

Through the public notice, the stakeholders/public were invited to file their objections and suggestions on the petition on or before 18th January, 2020.

2 (two) written Objections/suggestions were received by the Commission, vis-a-vis i) All Ward Union Mokokchung (AWUM) and ii) Shri. R. Kevichusa, Dimapur.

1.4 Notice for Public Hearing

A notification was published by the Commission in the following leading newspapers for giving due intimation to all stakeholders, general public, interested parties, and consumers about the public hearing to be held at Kohima on 4th February, 2020.

Sl. No.	Name of the Newspaper	Language	Date of Publication
1	The Morung Express	English	17.01.2020
2	Eastern Mirror	English	17.01.2020
3	Nagaland Post	English	17.01.2020

1.5 Public Hearing

Public hearing was held as scheduled on 4th February, 2020 at Conference Hall of the Engineer-in-Chief, Department of Power, Nagaland. The details of the public hearing are given in Chapter - 4.

1.6 Meeting of State Advisory Committee

The State Advisory Committee met on 19th March, 2020 at Hotel Japfu, Kohima and discussed the ARR for the control period of FY 2020-21 to FY 2024-25, determination of retail Tariff for the FY 2020-21 and Review for the FY 2019-20 of DPN, The minutes of the Advisory Committee meeting are given in ANNEXURE – I.

2. SUMMARY OF ARR AND TARIFF PETITION

2.1 Aggregate Revenue Requirement (ARR)

The DPN in its petition has projected the Aggregate Revenue Requirement for the control period of FY 2020-21 to FY 2024-25 and Tariff proposal for the FY 2020-21 for meeting its expenses and the estimated revenue during the control period with the existing tariff. The projected ARR for the control period are shown in Table below.

Table 2.1: Aggregate Revenue Requirement projected by DPN

(₹ in Crores)

Sl. No.	Particulars	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
1	Cost of Power Purchase	298.86	328.03	359.55	394.93	433.02
2	Cost of Generation	17.62	18.50	19.43	20.40	21.42
3	Operation & Maintenance Expenses	182.23	192.65	203.67	215.32	227.63
4	Transmission Charges	42.90	45.04	47.30	49.66	52.14
5	Interest & Finance Charges	272.03	271.57	270.88	269.95	268.85
6	Depreciation	143.43	146.74	150.05	153.36	156.00
7	Interest on Working Capital	10.94	11.45	11.98	12.55	13.15
8	Return on Equity	147.80	152.45	157.10	161.75	166.40
9	Total Revenue Requirement	1,115.82	1,166.44	1,219.95	1,277.92	1,338.62
10	Less: Non Tariff Income	13.24	13.91	14.60	15.33	16.10
11	Net Revenue Requirement (9-10)	1,102.56	1,152.53	1,205.35	1,262.59	1,322.52

(Source: Table 38 of Tariff Petition)

2.2 Tariff

The DPN in its petition has submitted the proposed tariff for the FY 2020-21 as per the table below:

Table 2.2: Existing Tariffs v/s Proposed Tariffs for the FY 2020-21

Sl. No.	Category of Consumers	Existing Rate (In ₹/kWh)	Proposed Rate (In ₹/kWh)
1	Category 'A' Domestic		
a)	Up 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)	Above 250 kwh	7.00	7.35
2	Category 'B' Industrial		
a)	Up to 500 kwh	5.80	6.10
b)	501 to 5000 kwh	6.45	6.80
c)	Above 5000 kwh	7.20	7.60
3	Category 'C' Bulk	6.30	6.60
4	Category 'D' Commercial		
a)	Up to 60 kwh	7.00	7.35
b)	61 to 240 kwh	8.10	8.50
c)	Above 240 kwh	9.15	9.60
5	Category 'E' PWW	6.60	7.00
6	Category 'F' Public Light	* To be recovered from the consumers	* To be recovered from the consumers
7	Category 'G' Inter-state	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	Kuti 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:		
a)	Domestic	Rs. 10 per connection / month	Rs. 10 per connection / month
b)	Commercial	Rs. 15 per connection / month	Rs. 15 per connection / month
c)	Industrial	Rs. 20 per connection / month	Rs. 20 per connection / month
d)	Bulk Supply	Rs. 25 per connection / month	Rs. 25 per connection / month

2.3 Prayers of DPN

The DPN has prayed in its petition for the following:

Examine the proposal submitted by the Petitioner for a favorable dispensation as detailed in the enclosed proposal;

Consider the submissions and allow the revised estimate for FY 2019-20 and approve Aggregate Revenue Requirement for the control period of FY 2020-21 to FY 2024-25 and Retail Tariff for DPN for FY 2020-21;

Approve the revenue gap and appropriate tariff increase as detailed in the enclosed proposal;

Pass suitable orders for implementation of the tariff proposals for the FY 2020-21 for making it applicable from 1st April, 2020 onwards;

Approve the terms and conditions of Tariff Schedules and various other matters as and the proposed changes therein;

Condone any inadvertent delay/ omissions/ errors/ rounding off differences/ shortcoming and DPN may please be permitted to add/ change/ modify/ alter the petition;

Pass such orders as the Commission may deem fit and proper, keeping in view the facts and circumstances of the case;

3. POWER SECTOR IN NAGALAND – AN OVERVIEW

3.1 Geographical Reality

The DPN is responsible for supply and distribution of electricity in the State of Nagaland which has a total area of 16,527 Sqkm. The total population of Nagaland State is around 19.81 lakhs as per 2011 census. The DPN serves 2,87,372 consumers of various categories with an annual energy consumption of about 639.49 MUs for the FY 2018-19.

3.2 Power Supply

3.2.1 Own Generation

DPN has its own hydel generation capacity of 27.50 MW at Likhimro Hydro Power Project and other MHEPs. Apart from this, the power supply requirements of the DPN are met from its share from Central Generating Stations (CGS) which is wheeled through the PGCIL network of NER and power purchases from electricity traders/other sources.

3.2.2 Power Purchase

The State is dependent on outside sources for meeting its energy requirement. The State has share from Central Sector Generating Stations and total firm share from the Central Sector Generating Stations of NEEPCO, NHPC, NTPC and ONGCTPC including own Generation is 183.24 MW. The total allocation to Nagaland from the generating stations is depicted in the Table below:

I. Length of voltage wise lines

Sl. No.	Description	Length (In ckkm.)
1	132 kV	347.60
2	66KV	473.70
3	33kV	1,935.70
4	11kV	6,646.08
5	LT	11,252.10
6	Total	20,655.18

II. Voltage wise sub-stations

Sl. No.	Description	No.
1	132/66/33 kV	3
2	132/33 kV	3
3	66/33/11 kV	1
4	66/33 kV	9
5	66/11 kV	1
6	33/11 kV	102
7	33/0.4 kV	88
8	11/0.4 kV	3,516
9	Total	3,716

Table 3.1: Power allocation from Central Generating Stations (CGS)

Sl. No.	Source	Capacity (In MWs)	Allocation	
			(In %)	(In MWs)
A	Central Generating Stations			
I	NTPC			
1	Farakka STPS	1600	0.43	6.88
2	Kahalgaoon STPS	840	0.42	3.53
3	Talcher STPS	1000	0.42	4.20
4	Bongaigaon TPS	500	4.93	24.65
	NTPC-Total	3940		39.26
II	NHPC			
1	Loktak HEP	105	6.44	6.76
	NHPC-Total	105		6.76
III	NEEPCO			
1	Doyang HEP (Incl. Free)	75	17.97	13.48
2	AGBPP	291	5.81	16.89
3	AGTPP	135	5.74	7.75
4	Khandong HEP	50	6.65	3.33
5	Kopili HEP	200	6.15	12.29
6	Ranganadi HEP	405	5.34	21.61
7	Kopili - II HEP	25	5.74	1.43
8	Pare HEP	110	5.40	5.94
	NEEPCO-Total	1291		82.72
IV	OTPC			
1	Palatana	726	3.72	27.00
	OTPC-Total	726		27.00
V	Own Generation	28	100.00	27.50
VI	Total	6090		183.24

3.3 Transmission and Distribution Network in the State

Nagaland being a hilly State with its population unevenly dispersed to the remote areas, the State of Nagaland is having large network of HT and LT lines as well as distribution transformers.

The details of transmission and distribution network, owned & operated by DPN as on 31.03.2016 are given in table below:

III. Power Transformers

Sl. No.	Description	Quantity (No.)	Capacity (In MVA)	Total Capacity (In MVA)
1	100 MVA, 132/66 kV	1	100	100.00
2	25 MVA, 132/66 kV	2	25	50.00
3	10 MVA, 132/66 kV	3	10	30.00
4	12.5 MVA, 132/33 kV	1	12.5	12.50
5	8 MVA, 132/33 kV	3	8	24.00
6	5 MVA, 132/33 kV	2	5	10.00
7	20 MVA, 66/33 kV	3	20	60.00
8	10 MVA, 66/33 kV	4	10	40.00
9	7.5 MVA, 66/33 kV	4	7.5	30.00
10	5 MVA, 66/33 kV	4	5	20.00
11	20 MVA, 66/11 kV	2	20	40.00
12	4.17 MVA, 11/66 kV	9	4.17	37.53
13	10 MVA, 33/11 kV	5	10	50.00
14	5 MVA, 33/11 kV	12	5	60.00
15	2.5 MVA, 33/11 kV	14	2.5	35.00
16	1.6 MVA, 33/11 kV	38	1.6	60.80
17	1 MVA, 33/11 kV	4	1	4.00
18	0.8 MVA, 33/11 kV	1	0.8	0.80
19	0.75 MVA, 33/11 kV	1	0.75	0.75
20	0.5 MVA, 33/11 kV	24	0.5	12.00
21	0.25 MVA, 33/11 kV	3	0.25	0.75
22	Total	140		678.13

IV. Distribution Transformers

Sl. No.	Capacity (In KVA)		Quantity (No.)	Capacity (In MVA)	Total Capacity (In MVA)
1	800	33/0.4 kV	1	0.8	0.80
2	500	33/0.4 kV	7	0.5	3.50
3	250	33/0.4 kV	10	0.25	2.50
4	100	33/0.4 kV	12	0.1	1.20
5	63	33/0.4 kV	11	0.063	0.69
6	50	33/0.4 kV	5	0.05	0.25
7	25	33/0.4 kV	42	0.025	1.05
8	1000	11/0.4 kV	1	1	1.00
9	800	11/0.4 kV	3	0.8	2.40
10	750	11/0.4 kV	9	0.75	6.75
11	500	11/0.4 kV	136	0.5	68.00
12	400	11/0.4 kV	2	0.4	0.80
13	315	11/0.4 kV	2	0.315	0.63
14	250	11/0.4 kV	386	0.25	96.50
15	200	11/0.4 kV	6	0.2	1.20
16	160	11/0.4 kV	6	0.16	0.96
17	160	11/0.4 kV	3	0.16	0.48
18	125	11/0.4 kV	2	0.125	0.25
19	100	11/0.4 kV	567	0.1	56.70
20	75	11/0.4 kV	1	0.075	0.08
21	63	11/0.4 kV	592	0.063	37.30
22	50	11/0.4 kV	7	0.05	0.35
23	25	11/0.4 kV	1689	0.025	42.23
24	16	11/0.4 kV	87	0.016	1.39
25	10	11/0.4 kV	39	0.01	0.39
26	Total		3626		327.39

3.4 Transmission and Distribution (T&D) Losses

The transmission and distribution losses of DPN system were given as 23.75% for the FY 2020-21.

The technical and commercial losses are not segregated.

3.5 Consumer Profile and Energy sales

The consumers profile and corresponding energy sales for the FY 2020-21, are Projected in the table below:

Table 3.2: Consumer Profile and Energy Sales for FY 2020-21

Sl. No.	Category	Energy Sales (In MUs)	Consumer (In No.)
1	Domestic including BPL	398.08	3,10,546
2	Commercial	98.96	23,665
3	Industrial	52.56	6,182
4	Public Lighting	17.97	630
5	Public Water works & Sewage	15.57	38
6	Irrigation & Agriculture	0.02	1
7	Bulk Supply	88.28	2,677
8	Outside state	44.35	-
9	Total	706.78	3,43,738

3.6 Demand

The allocation (firm and infirm) from various central generating stations is 155.74 MW. The energy drawl given by DPN during the FY 2018-19 as 784.17 MUs apart from own generation of 90.01 MUs.

3.7 Energy Audit

DPN is not conducting Energy Audit effectively, neither at the state level nor at the consumer end. At present, the DPN does the calculation of loss by taking the energy input at 132kV and energy sales at consumer end and the difference is shown as distribution loss, which cannot be termed as energy audit. As a matter of fact, energy audit should be conducted Voltage wise and computed with standard norms. Any high loss areas should be identified and analyzed and effective measures to be taken to bring down the losses to the permissible limits. To achieve this all the line feeders, transformers and consumers should be provided with standard meters.

3.8 Energy Metering

DPN has not completed 100% consumers metering. Most of the meters are static type. Some are not tested for many years. Metering of 33kV, 11kV feeders and DTs are not completed.

4. PUBLIC HEARING

4.1 Public Hearing

In order to ensure transparency in the process of determination of tariff as envisages in the Electricity Act, 2003, public hearing was held at Kohima on 4th February, 2020 as scheduled.

During public hearing the participants were given adequate opportunity to offer their views and comments on the Petition filed by the petitioner.

4.2 Minutes of the Public Hearing

In response to the public notice dated 18th & 19th December, 2019 published by the Power Department, Nagaland, 2 (two) written Objections/suggestions were received by the Commission, vis-a-vis i) All Ward Union Mokokchung (AWUM), and ii) Shri. R. Kevichusa, Dimapur. The DPN filed its reply dated 3rd February, 2020 to the representation filed by AWUM.

Objection on Tariff Hike by AWUM:

The AWUM, Mokokchung town submitted that the copy of the representation dated 16 -01-2020 filed by them is circulated to all the Members present in the Hearing. By relying on the grounds stated in the representation, the AWUM submitted that the UEMB Mokokchung town comprises of 18 Wards and their power consumption is through single point metering (SPM). In this case, the question of power theft does not arise.

The AWUM also submitted that even a single ward i.e. Arkong Ward which comprises of only 500 households consumes about 71,000 to 74,000 units per month and is paying electricity bill of more than ₹ 3,00,000/- per month. Therefore, the 18 wards under UEMB Mokokchung is paying more than ₹ 40,00,000/- per month.

Whereas, a particular District HQ in Nagaland is paying electricity bill to the Department only around ₹ 50,000/- per month. The AWUM also stated that a particular village with around 2180 household under VEMB Mokokchung District is paying electricity bill only around ₹

2,00,000/- per month. The AWUM further stressed upon by comparing to a particular consumer in Dimapur town who is served with an average bill of around ₹ 200/- per month only throughout the year.

The AWUM further submits that the UEMB Mokokchung is extending its full cooperation and supporting the Department by controlling power theft under their jurisdiction and also by realising the Revenue for the DPN.

The AWUM, in the interest of the citizen of Mokokchung Town, appeals to the Commission to fix the SPM (U) i.e. UEMB electricity tariff at ₹ 5.00/unit at par with prepaid domestic tariff for FY 2020-21, as enhancing the electricity tariff each year burdens only the honest paying consumers like them.

Response by the DPN:

The DPN at the outset submits that the Department cannot fix tariff arbitrarily at their own will. The DPN files the tariff proposal by following the due procedure along with all the justifications to the Commission for determination of Tariff each year .

The DPN further apprised that the proposed average cost of supply for FY 2020-21 works out to be ₹ 15.60/unit. However, DPN being a Government Department, the average cost of supply is reduced to ₹ 5.83/unit only where the remaining ₹ 9.77/unit is being absorbed by the State Government. Considering the above, under the proposed Tariff for the FY 2020 -21, the normal tariff for domestic category “lowest slab” (i.e. below 30 units consumption) is @ ₹ 4.70/unit and “second slab” is @ ₹ 5.70/unit which is higher than the proposed rate for UEMB i.e. @ ₹ 5.60/unit. Therefore, urged the UEMB, Mokokchung Town to cooperate and accept the said nominal proposed tariff hike.

The DPN also admitted that the only town which is fully communitised in the state is Mokokchung Town who as a community has taken full responsibility in the management of Revenue collection for the Department.

The DPN further submits that, the prepaid and post-paid tariff is different, therefore, cannot be treated equally.

The DPN appeals the Commission to take into consideration that the proposed petition for FY 2020-21 does not propose to recover the entire gap as it may result in huge burden on consumers. Hence, prayed before the Commission to pass appropriate orders as deem fit and proper by considering the views and response submitted herein above by the DPN .

Objection on implementation of Smart Meter by AWUM:

The implementation of Smart Meter under UEMB, Mokokchung is not acceptable under the present circumstances unless it is first successfully implemented in other parts of the State, as even UEMB was first launched and implemented in Mokokchung Town .

Response by the DPN:

The introduction of Smart meter is a central scheme targeted to improve revenue collection and control power theft. The DPN has to submit progress report on Revenue collection to the central government and based on the progress report the central government releases fund for infrastructural development of power sector in the State. Hence, requested the UEMB not to refuse the implementation of the Smart Meter.

Rejoinder by AWUM:

The AWUM submitted that no Meter is theft proof. Hence, installation of smart meter will not solve power theft and improve Revenue collection. Further submitted that If UEMB is dissolved by introduction of Smart Meter, revenue collection will be adversely affected under UEMB, Mokokchung town.

Representation from Shri. R. Kevichusa, Dimapur:

Shri. R. Kevichusa was not personally present in the hearing. However, the Commission took into consideration to hear the representation submitted by him. Accordingly, the DPN were requested to respond to the grounds stated in the said representation .

Response by DPN:

1. Power Theft:

The existence of Power theft in the State was admitted by the DPN. In order to check the power theft the department has introduced Anti-power theft mobile squad (APTMS) in

Dimapur and Kohima Town. The UEMB, Mokokchung Town is effectively controlling the power theft.

2. High Tariff:

That 90% of the consumers in the State are Domestic Consumers with less number of Industrial Consumers. Therefore, the tariff under Domestic category cannot be fixed at lower rate by way of Cross-subsidy with Industrial Consumers like other States.

3. Random Consumption of electricity by few Industrial Consumer:

The DPN has taken serious note of it and making all efforts to reduce such malpractice, which is an ongoing effort.

4. Irregularity of Electricity Bills:

The DPN admits to the claim made in the representation and submits that the same occurs due to various reasons. While making all efforts to streamline such irregularities, the consumer may approach the concerned Sub-divisional Officers for necessary rectification. The consumer may also submit the actual monthly reading from his/her own meters through the "Trust Reading" facility provided in the DPN's Portal.

Query from the consumer present:

1. Meter Rent:

Meter purchased from the market is cheaper than procuring from the Department. If purchased from market, whether the DPN will continue to collect meter rent?

Response by DPN:

DPN purchases high quality Meters from L&T which is at higher rate than the other Meters available in the open market. The Meter purchased by the consumer from open market is required to be tested and certified from the DPN's Meter Testing Centre. Meter rent is not applicable in case of Meter purchased from open market.

2. Revenue Collection during FY 2018-19:

The actual ARR for FY 2018-19 was ₹ 873.37 Crores. How much Revenue was collected during the year to meet the actual power purchase cost of ₹ 269.27 Crores?

Response by DPN:

The total revenue collection during FY 2018-19 was ₹ 140 Crores (approx).

3. Depreciation of Assets:

During the FY 2018-19 & 2019-20, the Depreciation rate was ₹ 89.05 Crs & ₹ 93.90 Crs respectively, whereas, in the FY 2020-21 the same has been projected at ₹143.43 Crs. What is the reason of such huge difference?

Response by DPN:

The Depreciation rate during FY 2018-19 & 2019-20 was lower due to non-submission of the Assets Register by some Divisions but the same was submitted by all the Divisions only during FY 2020-21 which resulted in a huge difference after taking into account the Asset Register of all the divisions.

4. Views and Comments from the consumer present:

- a) Although the Tariff is enhanced each year, the DPN is unable to collect the revenue to recover even the amount spent on power purchase cost. Therefore, the DPN is required to come out with a strategy to curve out those issues, instead of blaming the power theft and inefficiency of Meter readers
- b) By increasing the tariff each year, only the honest paying consumers are pinched and the revenue collection will not improve, unless the DPN revamp the irregularities in Billings, rectify the defective meters, improve the efficiency of Meter Readers and reduce the Commercial Losses.
- c) Projected ARR for FY 2020-21 is ₹ 1,102.56 Crores and projected revenue to be collected is ₹ 412.03 Crores. The difference comes to about ₹ 700 Crores which is not very sound.

Commission's Comment:

The Commission has taken note of the submissions and the responses made during the hearing. After perusal of the records and taking into consideration the submissions/ responses made by the respective parties and also after completing all the laid down procedures, the Commission will pass appropriate order as deems fit and proper.

Sd/-
W. Y. YANTHAN
Secretary,
Nagaland Electricity Regulatory
Commission (NERC), Kohima.

5. TRUING-UP

- 5.1 Nagaland Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2016 provides that the licensees shall file petition for Trueing Up of the actual expenses for previous years. The relevant regulations are provided below:

Regulation 5.3 of the NERC MYT Regulations, 2016 provides as below:

*“The Generating Company, Transmission Licensee, and **Distribution Licensee** for the Distribution Wires Business and Retail Supply Business, shall **file separate audited accounting statements with the application for determination of tariff and truing up** under Regulation 10”*

Regulation 10 of the NERC MYT Regulations, 2016 further provides as below:

*“10.1. Where the **Aggregate Revenue Requirement** and expected revenue from tariff and charges of a Generating Company or Transmission Licensee or Distribution Licensee is covered under a Multi-Year Tariff framework, then such Generating Company or Transmission Licensee or Distribution Licensee, as the case may be, **shall be subject to truing up of expenses and revenue** during the Control Period in accordance with these Regulations.*

*10.2. The Generating Company or Transmission Licensee or **Distribution Licensee** shall file an Application for Truing up of the previous year and determination of tariff for the ensuing year, within the time limit specified in these Regulations: Provided that the Generating Company or Transmission Licensee or Distribution Licensee, as the case may be, shall submit to the Commission the information in such form as may be prescribed by the Commission, **together with the Audited Accounts, extracts of books of account** and such other details as the Commission may require to assess the reasons for and extent of any variation in financial performance from the approved forecast of Aggregate Revenue Requirement and expected revenue from tariff and charges:*

10.3. *The scope of the truing up shall be a comparison of the performance of the Generating Company or Transmission Licensee or Distribution Licensee with the approved forecast of Aggregate Revenue Requirement and expected revenue from tariff and charges and shall comprise of the following:*

- (i) a comparison of the audited performance of the applicant for the previous financial year with the approved forecast for such previous financial year, subject to the prudence check including pass-through of impact of uncontrollable factors;*
- (ii) Review of compliance with directives issued by the Commission from time to time;*
- (iii) Other relevant details, if any.....”*

The above Regulation requires that the Distribution Licensee to file True-up Petition for every year of the control period based on the Audited Annual Accounts along with the petition for annual determination of Tariff. However, the Department of Power, Government of Nagaland has not filed the petition for Truing Up for previous years.

It is directed that the Department shall complete the audit of the Annual Accounts and file the True-Up petition along with the Tariff Petition for the next Financial Year i.e by 30th November, 2020. The Department shall submit the Audited Annual Accounts and the Fixed Asset Register along with the True-Up petition.

Further, the Department shall ensure that the Annual Accounts & Fixed Asset Register is updated annually, and True-up petition is mandatorily filed every year in respect of the actual expenses for the previous year.

6. REVIEW FOR THE FY 2019-20

6.1 Preamble

The Commission had approved the ARR and Tariffs for the FY 2019-20 in its order dated 23.04.2019 based on the projected data furnished by the DPN. Now the DPN has submitted proposals for review of the FY 2019-20 duly furnishing data based on the revised estimates for the FY 2019-20.

6.2 Energy demand (Sales)

Vide its Tariff Order dated 23.04.2019, the Commission had approved energy sales of 713.19 MUs for the FY 2019-20. The DPN in its Review Petition for the FY 2019-20 has submitted the estimated sales considering actual for a certain period and estimate for the balance period.

Accordingly, comparative statements of category-wise energy sales approved by the Commission for the FY 2019-20, estimated by DPN and approved by the Commission are shown in table below.

Table 6.1: Energy Sales approved by Commission for FY 2019-20

(In MUs)				
Sl. No.	Category	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	Domestic including BPL	386.58	369.47	369.77
2	Commercial	101.74	90.39	90.22
3	Industrial	74.74	52.18	56.98
4	Public Lighting	18.50	14.42	12.74
5	Irrigation & Agriculture	0.02	0.02	0.02
6	Public Water Works	12.78	12.16	10.45
7	Bulk Supply	118.83	88.55	94.59
8	Total	713.19	627.19	634.76
9	Outside state	-	44.35	-
10	Grand Total	713.19	671.55	634.76

The Commission now approves energy sales for the FY 2019-20 at 634.76 MUs against 671.55 MUs estimated by DPN.

6.3 Transmission and Distribution Losses (T&D Losses)

The Commission in its order for the FY 2019-20, had fixed the target of T&D Losses at 24.00% for the FY 2019-20. The DPN in its Tariff Petition for the FY 20 20-21, has estimated the same as approved for T&D Losses during the FY 2019-20 at 24.00%.

The detailed discussion & calculation is provided in the Para no. 6.5.

Table 6.2: T&D Losses approved by Commission for FY 2019-20

Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	T&D Losses	24.00	24.00	24.00

The Commission accordingly approves T&D Losses of 24.00% including 3% Intra State Transmission Losses for the FY 2019-20.

6.4 Energy Availability

6.4.1 Own Generation

The Commission in its Tariff Order dated 23.04.2019 had approved Own Generation for DPN at 98.40 MUs for the FY 2019-20. Now, the DPN has estimated own generation of 91.00 MUs during the FY 2019-20, as detailed in the table below.

Table 6.3: Power Generation approved by Commission for the FY 2019-20

(In MUs)				
Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	Total Generation	98.40	91.00	91.00
2	Total	98.40	91.00	91.00

The Commission now approves Own Generation of DPN during the FY 2019-20 at 91.00 MUs, as per details furnished by DPN.

6.4.2 Power Purchase

The Commission in its Tariff Order dated 23.04.2019 had approved the power purchase quantity of 852.17 MUs including free power quantity of 31.19 MUs. Now, the DPN has estimated for the FY 2019-20 at 805.23 MUs including free power of 31.19 MUs in the ARR and Tariff Petition for the FY 20 20-21, as detailed in table below.

Table 6.4: Power Purchase approved by Commission for the FY 2019-20

(In MUs)

Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
	Central Sector			
1	FSTPP, NTPC	40.79	40.79	40.79
2	KHSTPP, NTPC	23.52	23.52	23.52
3	TSTPP, NTPC	29.19	29.19	29.19
4	BGTPP, NTPC	69.64	69.64	69.64
5	LOKTAK HEP, NHPC	55.04	55.04	55.04
6	DOYANG HEP, NEEPCO	15.48	15.48	15.48
7	AGBPP, NEEPCO	79.62	79.62	79.62
8	AGTPP, NEEPCO	34.22	34.22	34.22
9	KHANDONG HEP, NEEPCO	16.75	16.75	16.75
10	KOPILI HEP, NEEPCO	63.34	63.34	63.34
11	RANGANADI HEP, NEEPCO	73.94	73.94	73.94
12	KOPILI - II HEP, NEEPCO	6.31	6.31	6.31
13	PALATANA, ONGCTPC,	131.09	131.09	131.09
	OTHER			
14	GEPL	-	135.10	87.12
15	PTC	-		
16	UI / DEVIATION	182.05		
17	FREE POWER	31.19	31.19	31.19
18	TOTAL	852.17	805.23	757.24

The Commission approves power purchase of 757.24 MUs for the FY 2019-20 including 31.19 MUs free power.

6.5 Energy Balance

The details of energy requirement and availability approved by the Commission in its Tariff Order dated 23.04.2019 for the FY 2019-20 and estimated by the DPN, and now approved by the Commission, are presented in table below:

Table 6.5: Energy Balance approved by Commission for the FY 2019-20

Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
A	Energy Requirement			
1	Energy Sales	713.19	671.55	634.76
2	Distribution loss %	21.00	21.00	21.00
3	Distribution loss	189.58	178.51	168.74
4	Energy Requirement	902.77	850.06	803.50
B	Energy Availability			
5	Own generation	98.40	91.00	91.00
6	Power from ER	93.50	93.50	93.50
7	ER Total losses %	2.26%	2.26%	2.26%
8	Regional Losses	2.11	2.11	2.11
9	Net Energy from ER (6-8)	91.39	91.39	91.39
10	Power from NER	576.62	576.63	576.62
11	Total power purchase (9+10)	668.01	668.02	668.01
12	NER Tr Loss %	2.66%	2.66%	2.66%
13	NER Tr Loss	17.77	17.77	17.77
14	Net power available (11-13)	650.24	650.25	650.24
15	UI/ Deviation	182.05	135.10	87.12
16	Total power available at state periphery (5+14+15)	930.69	876.35	828.35
17	Intra state Tr Loss @ 3%	27.92	26.29	24.85
18	Net power available for sale in Distribution(16-17)	902.77	850.06	803.50
19	Surplus (18-4)	0.00	0.00	0.00

6.6 Cost of Generation

The details of cost of generation approved by the Commission in its Tariff Order dated 23.04.2019 for the FY 2019-20 and estimated by the DPN, and now approved by the Commission, are presented in table below:

Table 6.6: Cost of generation approved by Commission for the FY 2019-20

(₹ in Crores)				
Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	Cost of Generation	16.96	16.78	16.78
2	Total	16.96	16.78	16.78

The Commission now approves the cost of generation of ₹ 16.78 Crores for the FY 2019-20, as per review estimated by DPN.

6.7 Power Purchase Cost

The details of power purchase cost approved by the Commission in its Tariff Order dated 23.04.2019 for the FY 2019-20 and the estimated by the DPN, and now approved by the Commission, are presented in table below:

Table 6.7: Power Purchase Cost approved by Commission for the FY 2019-20

(₹ in Crores)

Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	NTPC			
	FSTPP	17.42	89.76	17.42
	KHSTPP	9.08		9.08
	TSTPP	8.06		8.06
	BGSTPP	60.24		60.24
2	NHPC			
	LOKTAK HEP	23.89	14.63	14.63
3	NEEPCO			
	DOYANG HEP	8.02	109.04	8.02
	AGBPP	37.58		37.58
	AGTPP	19.09		19.09
	KHANDONG HEP	3.89		3.89
	KOPILI HEP	6.90		6.90
	RANGANADI HEP	24.25		24.25
	KOPILI - II HEP	1.49		1.49
4	ONGCTPC			
	PALATANA	47.19	29.33	29.33
5	Other sources			
	GEPL	-	32.78	21.14
	PTC	-		
	UI/ Deviation	50.25		
6	Total Energy Purchase	317.34	275.54	261.11
7	Free Power	-	-	-
8	REC Purchase	5.50	-	6.28
9	Transmission Charges - PGCIL	38.66	40.35	38.66
10	NERLDC Charges - POSOCO	0.52	0.50	0.50
11	Net Power Purchase Expenses	362.03	316.40	306.55

The Commission now approves the power purchase cost of ₹ 306.55 Crores for the FY 2019-20 against ₹ 316.40 Crores estimated by DPN.

6.8 Operation and Maintenance Expenses

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

- Employee Expenses
- Administration & General Expenses
- Repair & Maintenance Expenses

Details of Employee Expenses, Administration & General Expenses and Repair & Maintenance Expenses are discussed in the subsequent paras.

6.8.1 Employee Cost

The Commission vide its Order dated 23.04.2019, had approved employee cost at ₹ 113.78 Crores for the FY 2019-20. The DPN has estimated at ₹ 129.46 Crores for the FY 2019-20 and the cost now approved by the Commission are given in the table below.

Table 6.8: Employee Cost approved by Commission for the 2019-20

(₹ in Crores)				
Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	Employee Cost	113.78	129.46	116.52
2	Total	113.78	129.46	116.52

The Commission now approves the employee cost of ₹ 116.52 Crores for the FY 2019-20 against ₹ 129.46 Crores estimated by DPN.

6.8.2 Administrative and General Expenses

The Commission vide its Order dated 23.04.2019, had approved A&G expenses at ₹ 2.67 Crores for the FY 2019-20. The DPN has estimated at ₹ 3.17 Crores for the FY 2019-20 and the cost now approved by the Commission are given in the table below.

Table 6.11: O&M Expenses approved by Commission for the FY 2019-20

(₹ in Crores)

Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	Employee Cost	113.78	129.46	116.52
2	A&G Expenses	2.67	3.17	2.67
3	R&M Expenses	26.67	39.70	31.76
4	Total	143.12	172.33	150.95

6.9 Capital Expenditure & Capitalisation

The capital expenditure plan envisaged will also assist in reducing system losses. Capital investment and capitalisation during the FY 2019-20 has estimated by the DPN are shown in table below:

Table 6.12: Capital Works in Progress for the FY 2019-20

(₹ in Crores)

Sl. No.	Particulars	Review Estimate
1	Opening balance of CWIP	1,820.92
2	Capital Investment during the year	-
3	Total (1+2)	1,820.92
4	Capitalisation during the year	906.90
5	Closing balance of CWIP (3-4)	914.02

The Commission now approves capitalization of ₹ 906.90 Crores for the FY 2019-20.

6.10 Gross Fixed Assets (GFA) and Depreciation

The DPN in its Tariff Petition for the FY 2020-21, has furnished the data for the FY 2019-20, as detailed in table below:

Table 6.9: Administrative and General Expenses approved by Commission for the 2019-20

(₹ in Crores)

Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	A&G Expenses	2.67	3.17	2.67
2	Total	2.67	3.17	2.67

The Commission now approves the A&G Expenses of ₹ 2.67 Crores for the FY 2019-20 against ₹ 3.17 Crores estimated by DPN.

6.8.3 Repair and Maintenance Expenses

The Commission vide its Order dated 23.04.2019, had approved Repair & Maintenance expenses at ₹ 26.67 Crores for the FY 2019-20. The DPN has estimated at ₹ 39.70 Crores for the FY 2019-20 and the cost now approved by the Commission are given in the table below.

Table 6.10: Repair and Maintenance Expenses approved by Commission for the 2019-20

(₹ in Crores)

Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	R&M Expenses	26.67	39.70	31.76
2	Total	26.67	39.70	31.76

The Commission now approves the Repair & Maintenance Expenses of ₹ 31.76 Crores for the FY 2019-20 against ₹ 39.70 Crores estimated by DPN.

6.8.4 Summary of O&M Expenditure approved by the Commission

The summary O&M Expenditure approved by the Commission is tabulated below:

Table 6.13: Gross Fixed Assets for the FY 2019-20

(₹ in Crores)		
Sl. No.	Particulars	Review Estimate
1	Opening GFA	2,221.69
2	Additions during the year	906.90
3	Closing GFA (1+2)	3,128.59

Commissions Analysis:

In the absence of audited Fixed Asset Register, the information furnished by DPN cannot be taken as authentic

Further, the Commission vide its Order dated 23.04.2019, had approved Depreciation at ₹ 97.20 Crores for the FY 2019-20. The DPN has estimated Depreciation at ₹ 93.90 Crores for the FY 2019-20 and the cost now approved by the Commission are given in the table below.

Table 6.14: Depreciation approved by Commission for the FY 2019-20

(₹ in Crores)				
Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	Depreciation	97.20	93.90	93.90
2	Total	97.20	93.90	93.90

The Commission now approves the Depreciation of ₹ 93.90 Crores for the FY 2019-20, as same as projected by DPN.

6.11 Interest and Finance Charges

The DPN has proposed the opening normative loan has been considered at 70% of GFA and the actual assets capitalized for the FY 2018-19 & projected capitalisation for the FY 2019-20 has been considered for arriving at the total normative loan for the year. Repayment of the normative loan during the 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 detailed are furnished by DPN is provided in the table below.

Table 6.15: Interest on Loan furnished by DPN for the FY 2019-20

(₹ in Crores)			
Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate
1	Opening Normative Loan	-	1,555.18
2	Add: Normative Loan during the year		634.83
3	Less: Opening Cumulative Repayments		270.17
4	Less: Normative repayment		93.90
5	Closing Normative Loan		1,825.94
6	Average Normative Loan		1,690.56
7	Rate of Interest		13.80%
8	Interest on Loan		233.30

Commission's Analysis:

The DPN has stated that the entire capital employed has been funded through infusion of funds by Government of Nagaland through budgetary support without any external borrowings. **As such, the Commission has not considered interest on loan for the FY 2019-20.**

6.12 Interest on Working Capital

The DPN in its Tariff Petition for the FY 2020-21, has furnished Interest on Working Capital at ₹ 9.24 Crores for the FY 2019-20.

Commission's Analysis:

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;

and the rate of interest on working capital shall be equal to the SBI Advance rate on 1st April of the relevant year.

Accordingly, the Commission has arrived at the interest on working capital as shown in the Table below.

Table 6.16: Interest on Working Capital approved by Commission for the FY 2019-20

(₹ in Crores)

Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	Receivables equivalent to 1 month of expected revenue from sale of electricity at prevailing rates	30.90	30.36	30.82
2	Maintenance of spares at 1% of historical costs of fixed assets	31.29	22.22	31.29
3	O&M Expenses for one month	11.93	14.36	12.58
4	Amount held as Security Deposit in Cash	-	-	-
5	Total Working capital ((1+2+3)-4)	74.11	66.94	74.68
6	Rate of Interest @ SBAR of relevant year	13.45%	13.80%	13.80%
7	Interest on Working Capital	9.97	9.24	10.31

The Commission now approves the Interest on Working Capital of ₹ 10.31 Crores for the FY 2019-20 against ₹ 9.24 Crores estimated by DPN.

6.13 Bad Debts

The DPN has not proposed any Bad Debts for the FY 2019-20. **In view of the above the Commission has not allowed Bad Debts for the FY 2019-20.**

6.14 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”

The DPN has considered opening normative equity at 30% of GFA and 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 year. Rate of return on equity is considered 15.50% as per provision 26 of the MYT regulations, 2016.

In line of the above methodology, DPN has estimated of Return of Equity at ₹ 124.39 Crores for the FY 2019-20.

In absence of audited accounts, **the Commission cannot allow any return on equity or capital base.** In addition, since it is a State Government Department, the expenses are funded by the Government. As such, no separate return is to be allowed as return on equity.

6.15 Non-Tariff Income

The Commission vide its Order dated 23.04.2019, had approved Non-Tariff Income at ₹ 10.87 Crores for the FY 2019-20. The DPN has estimated at ₹ 12.61 Crores for the FY 2019-20 and now approved by the Commission are given in the table below.

Table 6.17: Non-Tariff Income approved by Commission for the FY 2019-20

(₹ in Crores)				
Sl. No.	Particulars	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	Non-Tariff Income	10.87	12.61	12.61
2	Total	10.87	12.61	12.61

The Commission approves the Non-Tariff Income at ₹ 12.61 Crores for the FY 2019-20, as same as projected by the DPN.

6.16 Revenue from Existing Tariff

Revenue from existing tariffs approved by the Commission for the FY 2019-20 in the Tariff Order dated 23.04.2019, and estimated by the DPN and now approved by the Commission are furnished in the table below.

Table 6-18: Revenue from Sales approved by Commission for the FY 2019-20

(₹ in Crores)				
Sl. No.	Category	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	Category 'A' Domestic	125.18	124.56	124.66
2	Category 'B' Industrial	45.89	32.93	35.96
3	Category 'C' Bulk	74.86	55.79	59.59
4	Category 'D' Commercial	72.78	65.04	64.91
5	Category 'E' PWW	8.43	8.03	6.90
6	Category 'F' Public Light	4.23	2.79	2.46
7	Category 'G' Agriculture	0.01	0.01	0.01
8	Single Point Metered Rural	67.65	64.66	64.71
9	Single Point Metered Urban	11.05	10.56	10.57
10	Total sales within State	410.08	364.37	369.79
11	Sales Outside State	-	-	-
12	Total Sales (13+14)	410.08	364.37	369.79

The Commission approves the revenue from the tariff at ₹ 369.79 Crores for the FY 2019-20, against the review estimated of ₹ 364.37 Crores by DPN.

6.17 Aggregate Revenue Requirement (ARR)

The ARR for the FY 2019-20 approved by the Commission in its Tariff Order dated 23.04.2019, estimated by the DPN and now approved by the Commission are furnished in the table below.

Table 6.19: Aggregate Revenue Requirement approved by Commission for the FY 2019-20

(₹ in Crores)

Sl. No.	Category	Approved in Tariff Order dated 23.04.2019	Review Estimate	Now approved by the Commission
1	Cost of Generation	16.96	16.78	16.78
2	Power Purchase Cost	362.03	316.40	306.55
3	Employee Cost	113.78	129.46	116.52
4	A&G Expenses	2.67	3.17	2.67
5	R&M Expenses	26.67	39.70	31.76
6	Depreciation	97.20	93.90	93.90
7	Interest & Finance Charges	-	233.30	-
8	Interest on Working Capital	9.97	9.24	10.31
9	Provision for Bad Debts	-	-	-
10	Return on Equity	-	124.39	-
11	Total Revenue Requirement	629.27	966.33	578.49
12	Less: Non-Tariff Income	10.87	12.61	12.61
13	Net Revenue Requirement	618.40	953.72	565.88
14	Revenue from Sale of Power	410.08	364.37	369.79
15	Surplus/(Gap) during the year	(208.32)	(589.35)	(196.09)

Review for the FY 2019-20 indicates that the revenue gap has decreased to ₹ 196.09 Crores as against at ₹ 208.32 Crores approved in the Tariff Order for the FY 2019-20.

As the utility is a Government Department, also fully covered under the budgetary support of the State Government, therefore, as such no pass through of the gap (loss) in the next tariff order is allowed.

7. ANALYSIS OF AGGREGATE REVENUE REQUIREMENT FOR THE CONTROL PERIOD OF FY 2020-21 TO FY 2024-25

7.1 Energy Sales

Proper estimation of category wise energy sales is essential to determine the quantum of power purchase and the assessment of revenue. This section examines in detail the customer category wise sales projected by the DPN in their petition for assessment of ARR.

7.2 Consumer Categories

DPN serves about 2.98 lakhs consumers in their licensed area and the consumers are categorized as under.

Table 7.1: Category of Consumers

Sl. No.	Category
1	Category 'A' Domestic
2	Category 'B' Industrial
3	Category 'C' Bulk
4	Category 'D' Commercial
5	Category 'E' PWW
6	Category 'F' Public Light
7	Category 'G' Inter-state
8	Category 'H' Agriculture
9	Category 'I' Temporary Connection
10	Kuti Jyoti (Point)
11	Single Point Metered Rural
12	Single Point Metered Urban

DPN serves the consumers at different voltage levels at which the consumers avail supply. The Commission has considered retaining the same categories as existing categories.

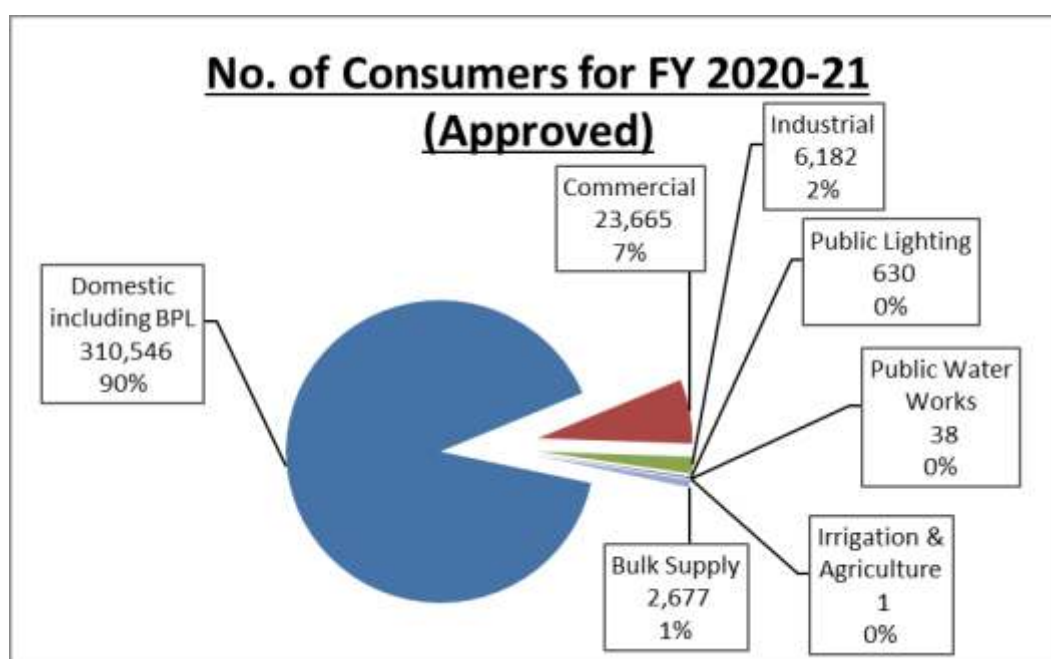
7.3 Growth of Consumers and Connected Load

DPN has projected the category wise growth of consumers for the FY 2020-21 to FY 2024-25, as given in the table below:

Table 7.2: Number of Consumers projected by DPN

(In No.)

Sl. No.	Category	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
1	Domestic including BPL	310,546	333,841	358,883	385,804	414,745
2	Commercial	23,665	24,436	25,233	26,056	26,905
3	Industrial	6,182	7,069	8,082	9,241	10,566
4	Public Lighting	630	634	638	643	647
5	Public Water Works	38	38	38	38	38
6	Irrigation & Agriculture	1	1	1	1	1
7	Bulk Supply	2,677	3,127	3,652	4,266	4,983
8	Outside State	-	-	-	-	-
9	Total	343,738	369,146	396,528	426,049	457,885



7.4 Category-wise Energy Sales

DPN has furnished category wise energy sales for the FY 2020-21 to FY 2024-25, as given in the table below:

Table 7.3: Projected Energy Sales

(In MUs)

Sl. No.	Category	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
1	Domestic including BPL	389.08	409.72	431.47	454.36	478.47
2	Commercial	98.96	108.34	118.62	129.87	142.18
3	Industrial	52.56	52.95	53.34	53.73	54.13
4	Public Lighting	17.97	22.38	27.87	34.72	43.24
5	Public Water Works	15.57	19.94	25.52	32.68	41.84
6	Irrigation & Agriculture	0.02	0.02	0.02	0.02	0.02
7	Bulk Supply	88.28	88.00	87.73	87.45	87.18
8	Outside State	44.35	44.35	44.35	44.35	44.35
9	Total	706.78	745.70	788.92	837.18	891.41

7.4.1 Analysis of Energy Sales Projections by DPN and the Commission's decision

Based on the actual sales during the FY 2013-14 to FY 2018-19, the sales growth rate is worked out as detailed in the table below:

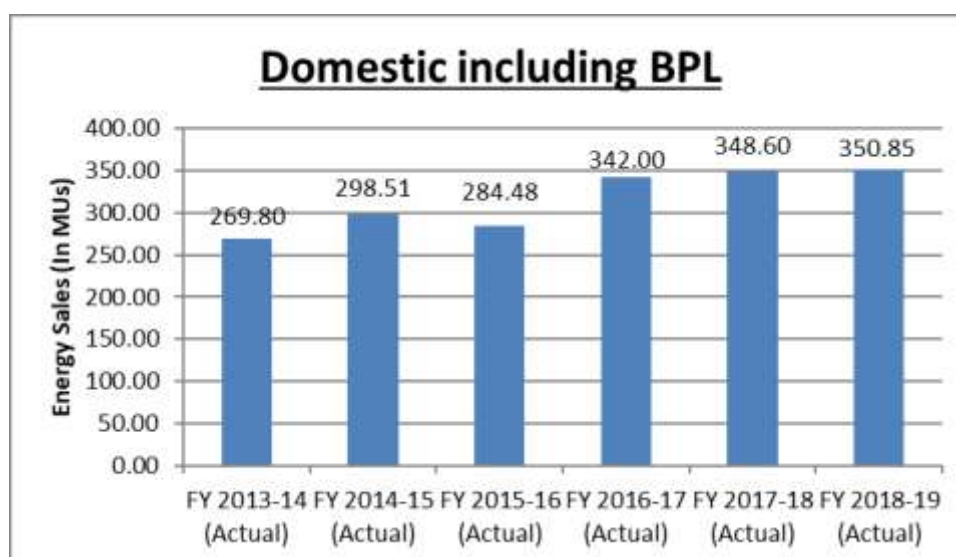
Table 7.4: Consumer Category-wise growth in Energy Sales

Sl. No.	Category	2013-14 (Actual)	2014-15 (Actual)	2015-16 (Actual)	2016-17 (Actual)	2017-18 (Actual)	2018-19 (Actual)	CAGR for 5 years from FY 2013-14 to FY 2018-19	CAGR for 3 years from FY 2015-16 to FY 2018-19	CAGR for 2 years from FY 2016-17 to FY 2018-19	CAGR for YOY from FY 2017-18 to FY 2018-19
		(In MUs)								(In %)	
1	Domestic including BPL	269.80	298.51	284.48	342.00	348.60	350.85	5.39	7.24	1.29	0.65
2	Commercial	52.99	64.68	82.64	82.58	84.88	82.56	9.27	-0.03	-0.01	-2.73
3	Industrial	25.15	51.29	63.36	61.29	64.29	51.80	15.55	-6.49	-8.07	-19.43
4	Public Lighting	4.90	9.48	11.00	14.60	15.80	11.58	18.77	1.73	-10.94	-26.71
5	Public Water Works	3.10	4.67	4.59	9.24	10.56	9.50	25.10	27.44	1.40	-10.04
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	64.90	81.52	102.84	100.10	102.20	88.83	6.48	-4.76	-5.80	-13.08
8	Total	420.86	510.17	548.92	609.83	626.35	595.14				

Considering the data submitted in the petition, the category-wise sales projected by the DPN and Commissions approvals are discussed below.

Domestic

The DPN has projected energy sales to domestic category at 389.08 MUs, 409.72 MUs, 431.47 MUs, 454.36 MUs and 478.47 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively, while the actual sales during FY 2018-19 is 350.85 MUs & 1st Half of the FY 2019-20 is 121.31 MUs. The trend of the actual consumption in the category for the FY 2013-14 to FY 2018-19 is shown in the chart below:

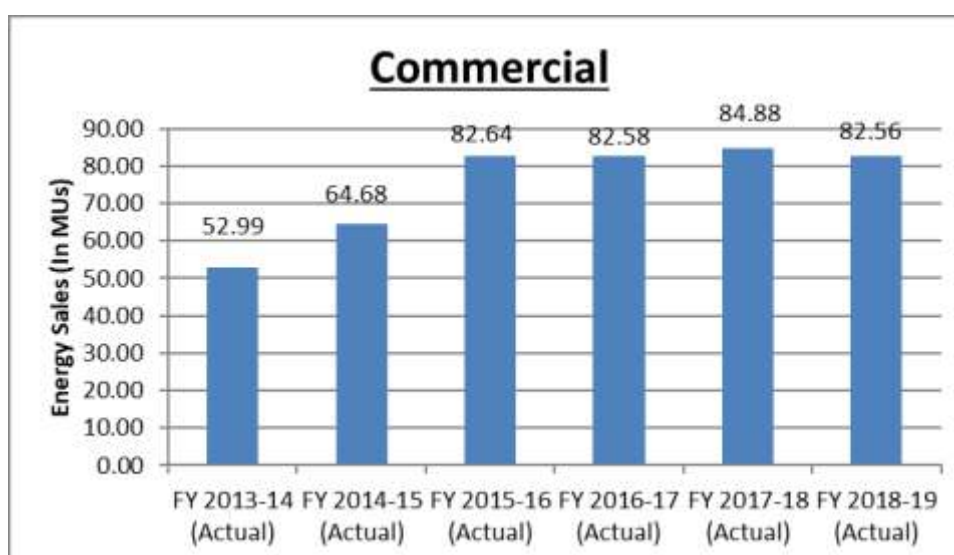


The five year growth rate is 5.39%, three year growth rate is 7.24%, two year growth rate is 1.29% and YoY growth rate is 0.65%. As the consumers are increasing year by year. 5 years growth rate per annum on the actuals sales during the FY 2018-19 is considered reasonable. Projection of sales during the control period with 5 years growth rate works out to 389.72 MUs, 410.74 MUs, 432.90 MUs, 456.25 MUs and 480.86 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

The Commission approves the sales at 389.72 MUs, 410.74 MUs, 432.90 MUs, 456.25 MUs and 480.86 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively for Domestic category

Commercial

The DPN has projected energy sales to commercial category at 98.96 MUs, 108.34 MUs, 118.62 MUs, 129.87 MUs and 142.18 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively, while the actual sales during FY 2018-19 is 82.56 MUs & 1st Half of the FY 2019-20 is 21.27 MUs. The trend of the actual consumption in the category for the FY 2013-14 to FY 2018-19 is shown in the chart below:

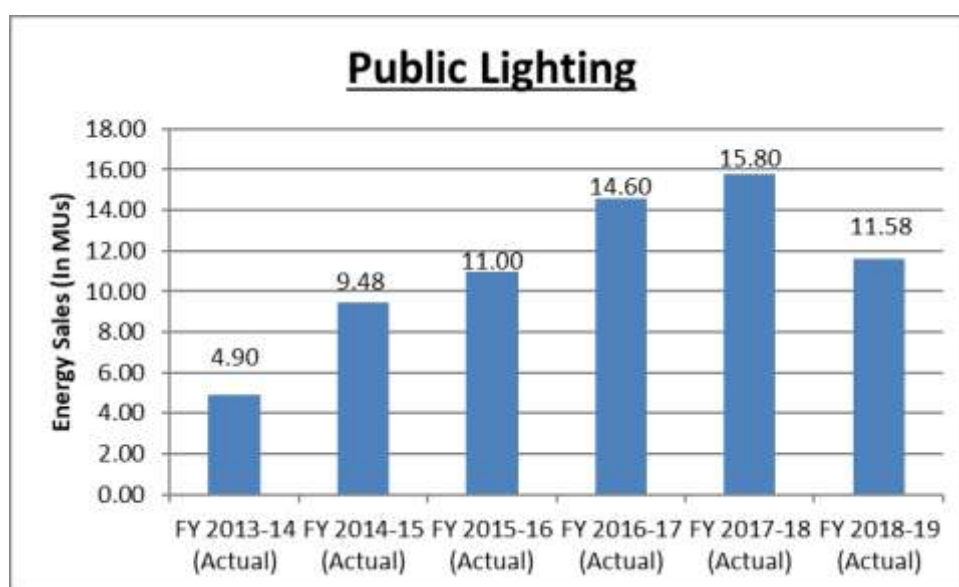


The five year growth rate is 9.27%, three year growth rate is (-) 0.03%, two year growth rate is (-) 0.01% and YoY growth rate is (-) 2.73%. 5 years growth rate per annum on the actuals sales during the FY 2018-19 is considered reasonable. Projection of sales during the control period with 5 years growth rate works out to 98.58 MUs, 107.72 MUs, 117.71 MUs, 128.63 MUs and 140.56 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

The Commission approves the sales 98.58 MUs, 107.72 MUs, 117.71 MUs, 128.63 MUs and 140.56 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively for Commercial category.

Public Lighting

The DPN has projected energy sales for this category at 17.97 MUs, 22.38 MUs, 27.87 MUs, 34.72 MUs and 43.24 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively, while the actual sales during FY 2018-19 is 11.58 MUs & 1st Half of the FY 2019-20 is 0.10 MUs. The trend of the actual consumption in the category for the FY 2013-14 to FY 2018-19 is shown in the chart below:

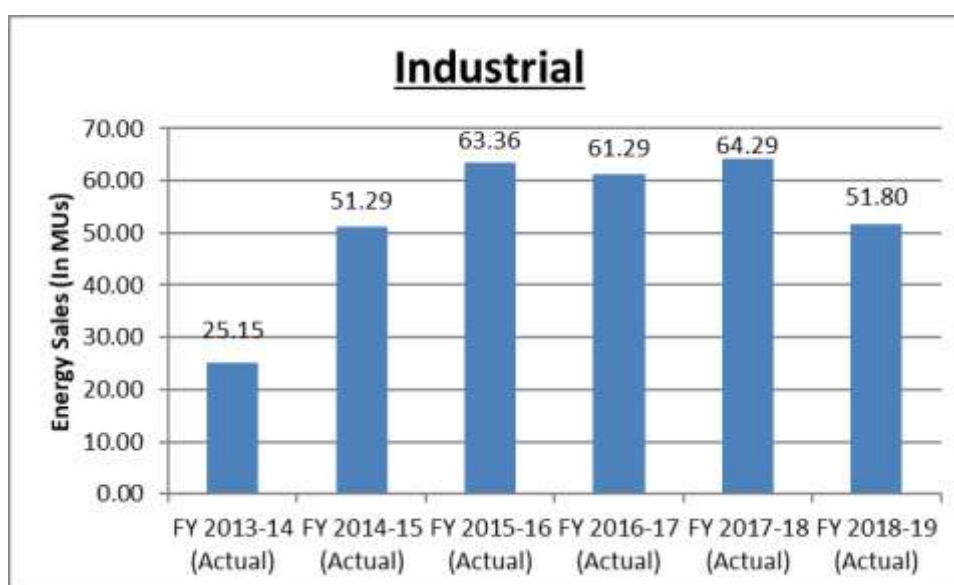


The five year growth rate is 18.77%, three year growth rate is 1.73%, two year growth rate is (-) 10.94% and YoY growth rate is (-) 26.71%. The growth rate may not sustain, accordingly 10% growth rate per annum on the actuals sales during the FY 2018-19 is considered reasonable. Projection of sales during the control period with 10% growth rate works out to 14.01 MUs, 15.41 MUs, 16.95 MUs, 18.65 MUs and 20.51 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

The Commission approves the sales at 14.01 MUs, 15.41 MUs, 16.95 MUs, 18.65 MUs and 20.51 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively for Public Lighting category.

Industrial

The DPN has projected energy sales to industrial category at 52.56 MUs, 52.95 MUs, 53.34 MUs, 53.73 MUs and 54.13 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively, while the actual sales during FY 2018-19 is 51.80 MUs & 1st Half of the FY 2019-20 is 5.20 MUs. The trend of the actual consumption in the category for the FY 2013-14 to FY 2018-19 is shown in the chart below:

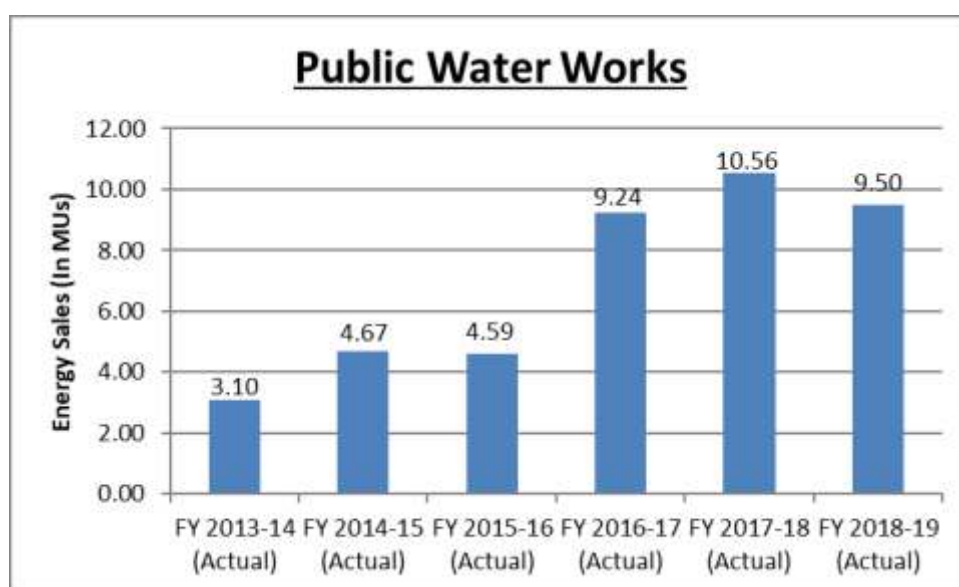


The five year growth rate is 15.55%, three year growth rate is (-) 6.49%, two year growth rate is (-) 8.07% and YoY growth rate is (-) 19.43%. The growth rate may not sustain, accordingly 10% growth rate per annum on the actuals sales during the FY 2018-19 is considered reasonable. Projection of sales during the control period with 10% growth rate works out to 62.68 MUs, 68.95 MUs, 75.84 MUs, 83.42 MUs and 91.77 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

The Commission approves the sales at 62.68 MUs, 68.95 MUs, 75.84 MUs, 83.42 MUs and 91.77 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively for Industrial category.

Public Water Works

The DPN has projected energy sales for this category at 15.57 MUs, 19.94 MUs, 25.52 MUs, 32.68 MUs and 41.84 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively, while the actual sales during FY 2018-19 is 9.50 MUs & 1st Half of the FY 2019-20 is 0.13 MUs. The trend of the actual consumption in the category for the FY 2013-14 to FY 2018-19 is shown in the chart below:

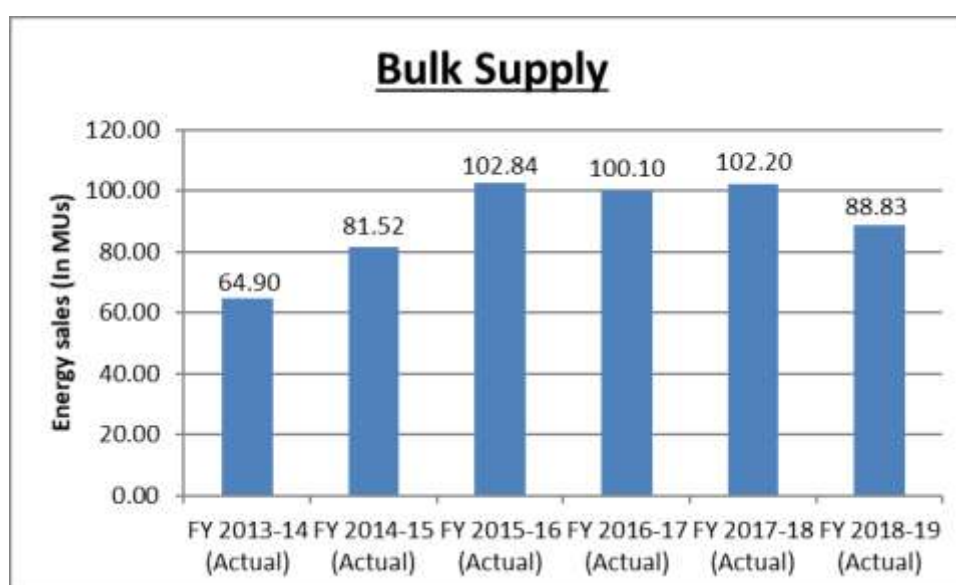


The five year growth rate is 25.10%, three year growth rate is 27.44%, two year growth rate is 1.40% and YoY growth rate is (-) 10.04%. The growth rate may not sustain, accordingly 10% growth rate per annum on the actuals sales during the FY 2018-19 is considered reasonable. Projection of sales during the control period with 10% growth rate works out to 11.50 MUs, 12.64 MUs, 13.91 MUs, 15.30 MUs and 16.83 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

The Commission approves the sales at 11.50 MUs, 12.64 MUs, 13.91 MUs, 15.30 MUs and 16.83 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively for Public Water Works category.

Bulk Supply

The DPN has projected energy sales for this category at 88.28 MUs, 88.00 MUs, 87.73 MUs, 87.45 MUs and 87.18 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively, while the actual sales during FY 2018-19 is 88.83 MUs & 1st Half of the FY 2019-20 is 40.25 MUs. The trend of the actual consumption in the category for the FY 2013-14 to FY 2018-19 is shown in the chart below:

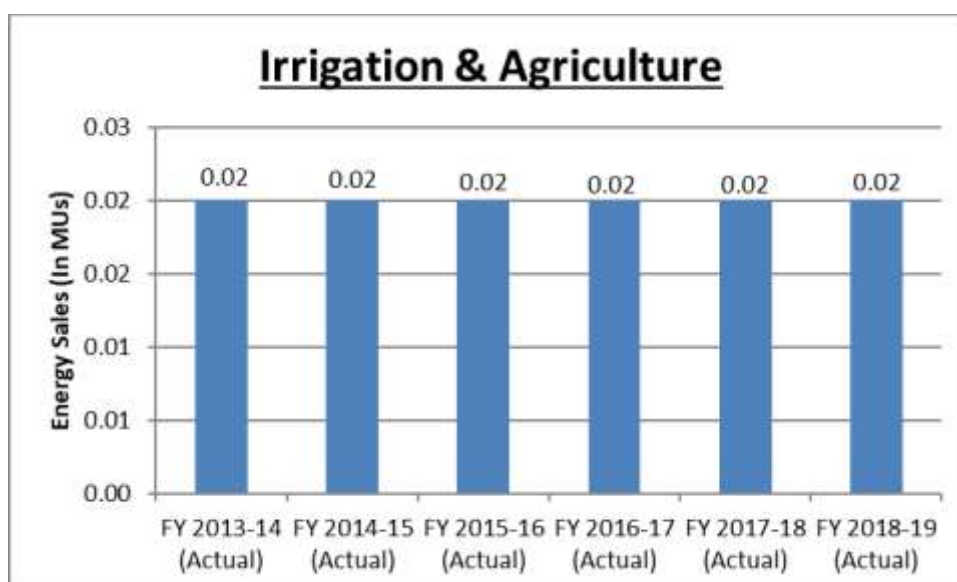


The five year growth rate is 6.48%, three year growth rate is (-) 4.76%, two year growth rate is (-) 5.80% and YoY growth rate is (-) 13.08%. 5 years growth rate per annum on the actuals sales during the FY 2018-19 is considered reasonable. Projection of sales during the control period with 5 years growth rate works out to 100.71 MUs, 107.24 MUs, 114.19 MUs, 121.58 MUs and 129.46 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

The Commission approves the sales at 100.71 MUs, 107.24 MUs, 114.19 MUs, 121.58 MUs and 129.46 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively for Bulk Supply category.

Irrigation and Agriculture

The DPN has projected energy sales for this category at 0.02 MUs for each financial year of the control period of FY 2020-21 to FY 2024-25, while the actual sales during FY 2018-19 is 0.02 MUs & 1st Half of the FY 2019-20 is 0.01 MUs. The trend of the actual consumption in the category for the FY 2013-14 to FY 2018-19 is shown in the chart below:

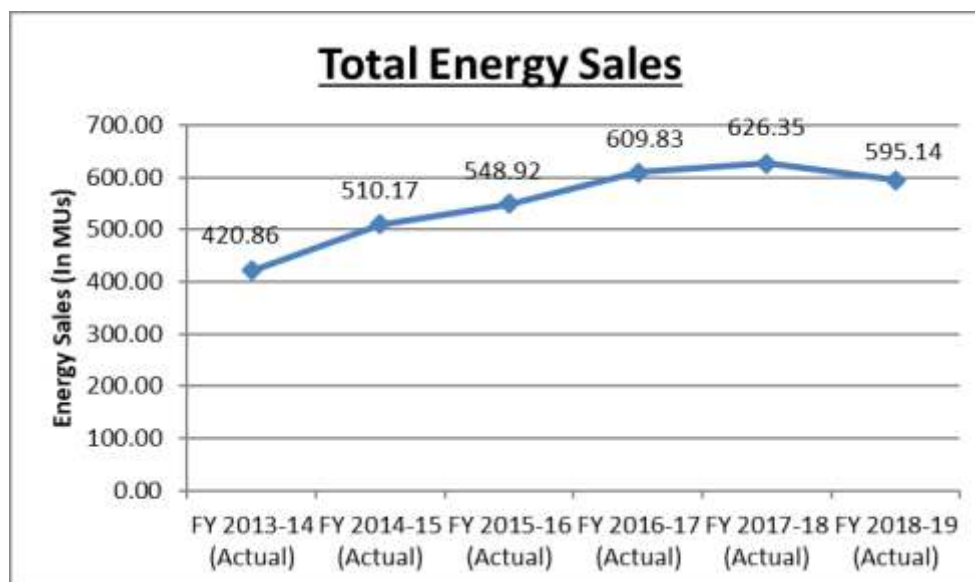


On the basis of the above data, the Commission has considered 0.02 MUs for each financial year of the control period of FY 2020-21 to FY 2024-25 as proposed by the DPN.

The Commission approves the sales 0.02 MUs for each financial year of the control period of FY 2020-21 to FY 2024-25 for Irrigation and Agriculture category.

Total sales

The trend of the total actual consumption within the state of Nagaland for the FY 2013-14 to FY 2018-19 is shown in the chart below:



7.5 Category-Wise Energy Sales

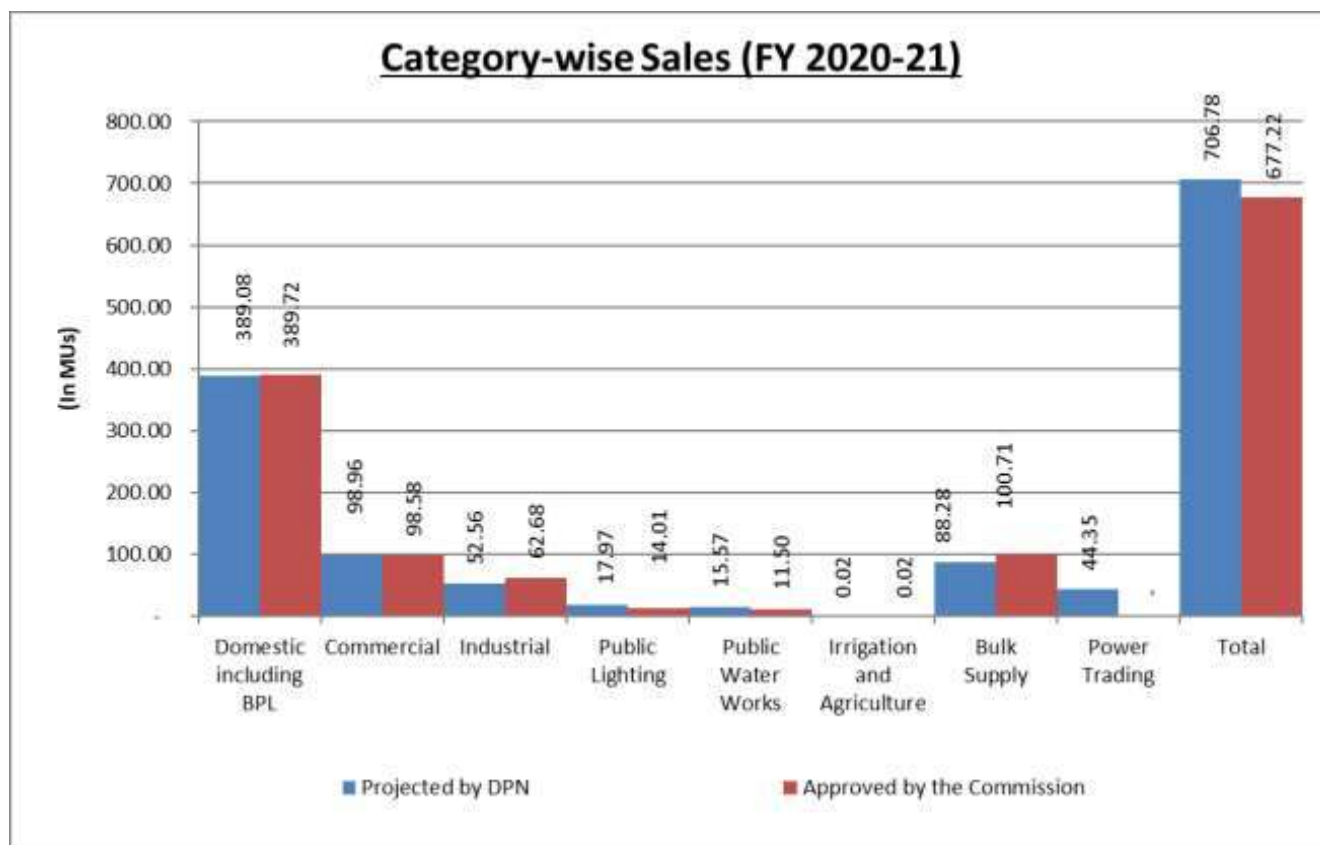
As discussed in para 7.4 supra category wise energy sales approved by the Commission for the control period of FY 2020-21 to FY 2024-25 are furnished in table below:

Table 7.5: Category-wise energy sales approved by the Commission

(In MUs)

Sl. No.	Category	FY 2020-21		FY 2021-22		FY 2022-23		FY 2023-24		FY 2024-25	
		Projected by DPN	Approved by the Commission	Projected by DPN	Approved by the Commission	Projected by DPN	Approved by the Commission	Projected by DPN	Approved by the Commission	Projected by DPN	Approved by the Commission
1	Domestic including BPL	389.08	389.72	409.72	410.74	431.47	432.90	454.36	456.25	478.47	480.86
2	Commercial	98.96	98.58	108.34	107.72	118.62	117.71	129.87	128.63	142.18	140.56
3	Industrial	52.56	62.68	52.95	68.95	53.34	75.84	53.73	83.42	54.13	91.77
4	Public Lighting	17.97	14.01	22.38	15.41	27.87	16.95	34.72	18.65	43.24	20.51
5	Public Water Works	15.57	11.50	19.94	12.64	25.52	13.91	32.68	15.30	41.84	16.83
6	Irrigation & Agriculture	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
7	Bulk Supply	88.28	100.71	88.00	107.24	87.73	114.19	87.45	121.58	87.18	129.46
8	Outside State	44.35	-	44.35	-	44.35	-	44.35	-	44.35	-
9	Total	706.78	677.22	745.70	722.73	788.92	771.52	837.18	823.86	891.41	880.01

The below chart depicts the category-wise comparison of energy sales projected by DPN and approved by the Commission for the FY 2020-21:

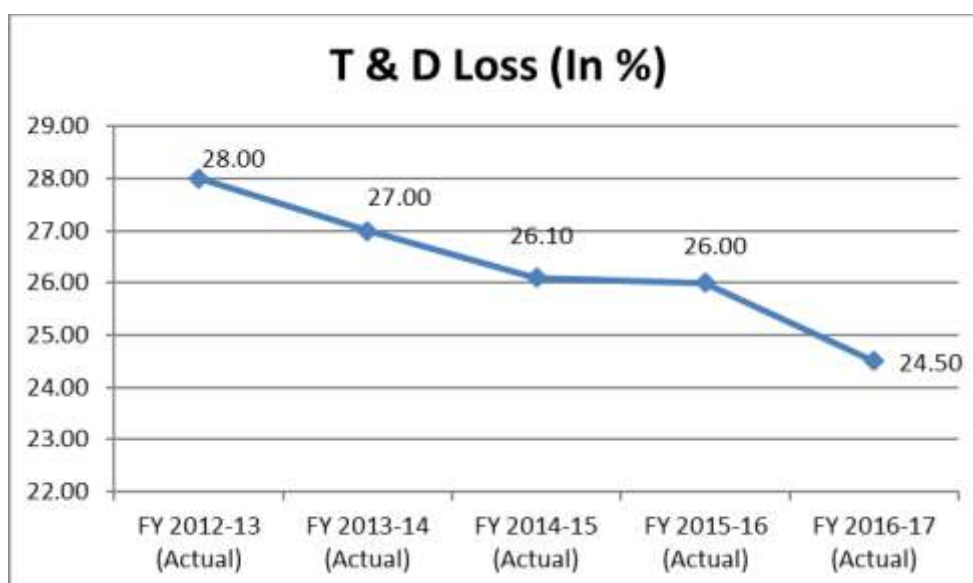


7.6 Transmission and Distribution Losses (T&D Losses)

DPN has projected the Distribution loss at 20.75%, 20.50%, 20.25%, 20.00% & 19.25% for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 & FY 2024-25 respectively, Transmission loss at 3% for each financial year of the control period and Total T&D losses at 23.75%, 23.50%, 23.25%, 23.00% & 22.25% for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 & FY 2024-25 respectively.

Commission's Analysis:

The chart below depicts the trend of actual T&D Losses for the FY 2012-13 to FY 2016-17.



The DPN did not submitted the actual T&D Losses for the FY 2017-18. Further, DPN has submitted the provisional T&D Losses for the FY 2018-19 at 25.54%. The distribution losses projected by DPN for the control period of FY 2020-21 to FY 2024-25 have been examined by the Commission. The Commission had approved the transmission & distribution loss is segregated as average transmission loss of 3% for each financial year of the control period and distribution loss at 20.75%, 20.50%, 20.25%, 20.00% & 19.25% for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 & FY 2024-25 respectively.

The Commission accordingly approves Transmission Losses of 3% for each financial year of the control period and Distribution Losses at 20.75%, 20.50%, 20.25%, 20.00% & 19.25% for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 & FY 2024-25 respectively, as same as projected by DPN.

7.7 Energy Requirement

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

Table 7.6: Energy Requirement Projected by DPN

Particulars	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
ENERGY REQUIREMENT					
Energy Sales within State (MUs)	706.78	745.70	788.92	837.18	891.41
Distribution Losses (%)	20.75	20.50	20.50	20.00	19.25
Distribution Losses (MUs)	185.06	192.29	200.32	209.29	212.50
Total Energy Requirement (MUs)	891.84	937.99	989.24	1,046.47	1,103.92

Commission's Analysis:

The DPN has considered outside sales to arrive energy requirement which is not in order. Outside sales will arise if there is surplus power.

Based on approved sales within the state and distribution losses, the energy requirement is worked out as detailed in Table below:

Table 7.7: Energy Requirement approved by the Commission

Sl. No.	Particulars	Unit	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
1	Energy sales	MUs	677.22	722.73	771.52	823.86	880.01
2	Distribution Losses	%	20.75	20.50	20.25	20.00	19.25
3	Distribution Losses	MUs	177.32	186.36	195.90	205.96	209.78
4	Energy Requirement	MUs	854.54	909.09	967.42	1,029.82	1,089.79

7.8 Energy Availability**7.8.1 Own Generation**

The DPN is having 1 HEP with an installed capacity of 27.50 MW and DPN is submitted the total net generation of 90.01 MUS for the FY 2018-19. DPN has projected the generation from above unit based on plant availability and estimated generation, as detailed in the table below.

Table 7.8: Power Generation projected by DPN

(In MUs)

Sl. No.	Particulars	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
1	Power Generation	91.00	91.00	90.00	90.00	90.00
2	Net Generation	91.00	91.00	90.00	90.00	90.00

The Commission approves own generation (Net) at 91.00 MUs per annum for the control period of FY 2020-21 to FY 2021-22 from its own generating stations.

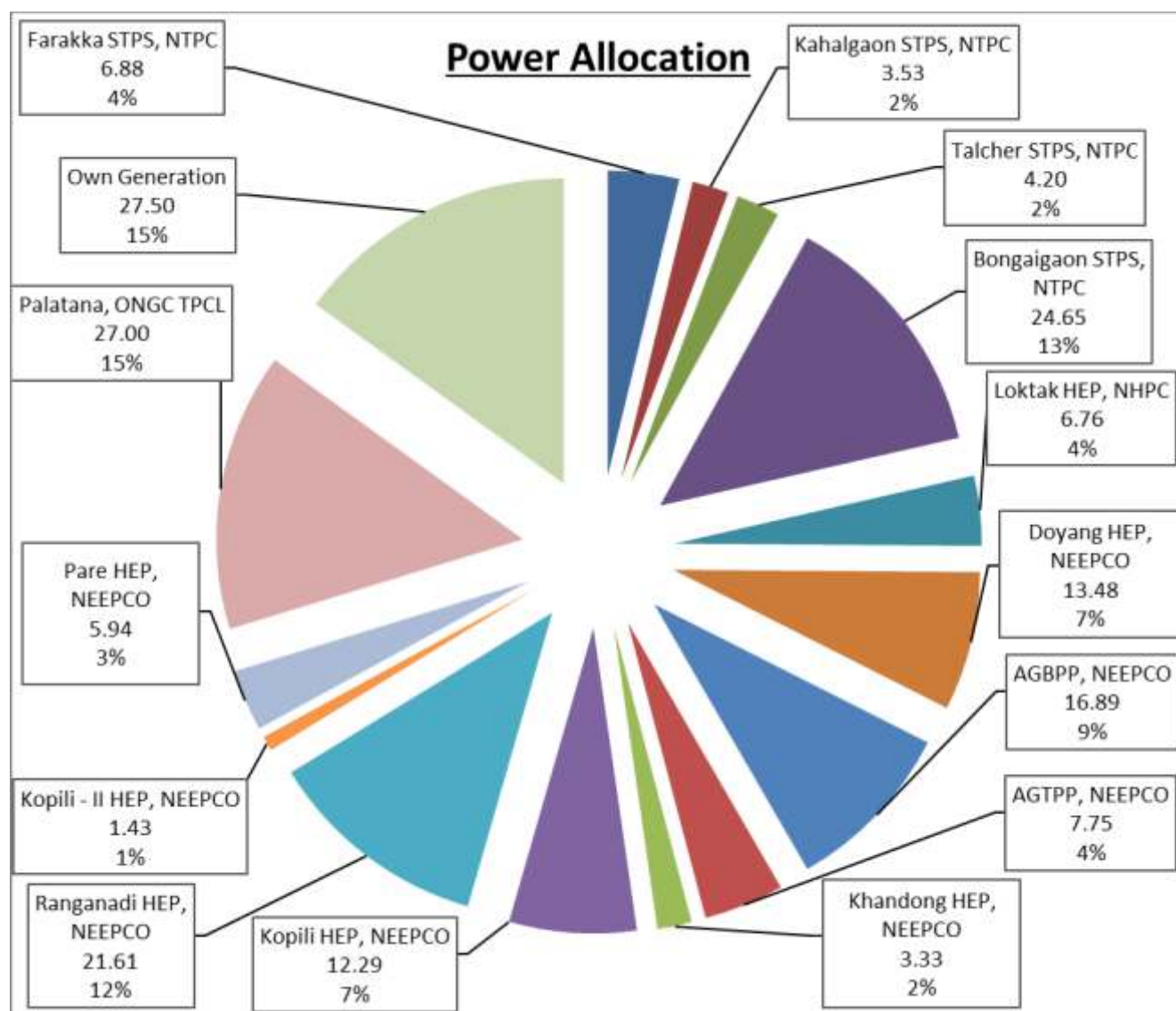
7.8.2 Power Purchase

DPN has allocation of power from various central generating stations in north eastern region of NEEPCO, NHPC, eastern region of NTPC and from Own generating stations as given below:

Table 7.9: Power Allocation from Central Sector and Other Generating Stations

Sl. No.	Source	Plant Capacity (MW)	Share in %	Share in MW
A	Central Generating Stations			
I	NTPC			
1	Farakka STPS	1600	0.43	6.88
2	Kahalgao STPS	840	0.42	3.53
3	Talcher STPS	1000	0.42	4.20
4	Bongaigaon TPS	500	4.93	24.65
	NTPC-Total	3940		39.26
II	NHPC			
1	Loktak HEP	105	6.44	6.76
	NHPC-Total	105		6.76
III	NEEPCO			
1	Doyang HEP (Incl. Free)	75	17.97	13.48
2	AGBPP	291	5.81	16.89
3	AGTPP	135	5.74	7.75
4	Khandong HEP	50	6.65	3.33
5	Kopili HEP	200	6.15	12.29
6	Ranganadi HEP	405	5.34	21.61
7	Kopili - II HEP	25	5.74	1.43
8	Pare HEP	110	5.40	5.94
	NEEPCO-Total	1291		82.72
IV	OTPC			
1	Palatana	726	3.72	27.00
	OTPC-Total	726		27.00
V	Own Generation	28	100.00	27.50
VI	Total	6090		183.24

The chart below depicts the projected volume of allocation of power & % of total power procured by DPN from various sources:



7.8.3 Assumption of 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.

7.8.4 Energy Drawals for CGS and Other Sources

The DPN projected energy drawal of about 811.46 MUs, 864.66 MUs, 918.49 MUs, 977.50 MUs & 1036.74 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 & FY 2024-25 respectively, as detailed in Table below:

Table 7.10: Summary of Power Purchase projected by DPN

(In MUs)

Sl. No.	Source	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
A	Central Generating Stations					
I	NTPC					
1	FSTPS	40.79	40.79	40.79	40.79	40.79
2	KHTPS	23.52	23.52	23.52	23.52	23.52
3	TSTPS	29.19	29.19	29.19	29.19	29.19
4	BGTPP	69.64	69.64	69.64	69.64	69.64
	NTPC-Total	163.14	163.14	163.14	163.14	163.14
II	NHPC					
1	LOKTAK HEP	55.04	55.04	55.04	55.04	55.04
	NHPC-Total	55.04	55.04	55.04	55.04	55.04
III	NEEPCO					
1	DOYANG HEP	15.48	15.48	15.48	15.48	15.48
2	AGBPP	79.62	79.62	79.62	79.62	79.62
3	AGTPP	34.22	34.22	34.22	34.22	34.22
4	KHANDONG HEP	16.75	16.75	16.75	16.75	16.75
5	KOPI LI HEP	63.34	63.34	63.34	63.34	63.34
6	RANGANADI HEP	73.94	73.94	73.94	73.94	73.94
7	KOPI LI - II HEP	6.31	6.31	6.31	6.31	6.31
	NEEPCO - Total	289.66	289.66	289.66	289.66	289.66
IV	Other Stations/IPPs					
1	ONGCTPCL	131.09	131.09	131.09	131.09	131.09
2	GEPL	-	-	-	-	-
3	PTC	-	-	-	-	-
	Others-Total	131.09	131.09	131.09	131.09	131.09
B	UI	172.54	225.74	279.57	338.58	397.80
	Grand Total	811.46	864.66	918.49	977.50	1,036.74

Commission's Analysis:

DPN in its projection has not considered procurement of power from Pare HEP of NEEPCO Ltd. The firm allocation for DPN from the project is 5.40%. Power from above project has been considered for arriving at the power available. Now the approved power quantity for the control period of FY 2020-21 to FY 2024-25 are provided in the Table below.

Table 7.11: Power Purchase approved by the Commission

(In MUs)

Sl. No.	Source	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
	Central Sector					
1	FSTPP, NTPC	40.79	40.79	40.79	40.79	40.79
2	KHSTPP, NTPC	23.52	23.52	23.52	23.52	23.52
3	TSTPP, NTPC	29.19	29.19	29.19	29.19	29.19
4	BGTTP, NTPC	69.64	69.64	69.64	69.64	69.64
5	LOKTAK HEP, NHPC	55.04	55.04	55.04	55.04	55.04
6	DOYANG HEP, NEEPCO	15.48	15.48	15.48	15.48	15.48
7	AGBPP, NEEPCO	79.62	79.62	79.62	79.62	79.62
8	AGTPP, NEEPCO	34.22	34.22	34.22	34.22	34.22
9	KHANDONG HEP, NEEPCO	16.75	16.75	16.75	16.75	16.75
10	KOPI LI HEP, NEEPCO	63.34	63.34	63.34	63.34	63.34
11	RANGANADI HEP, NEEPCO	73.94	73.94	73.94	73.94	73.94
12	KOPI LI - II HEP, NEEPCO	6.31	6.31	6.31	6.31	6.31
12	PARE HEP, NEEPCO	41.63	41.63	41.63	41.63	41.63
13	PALATANA, ONGCTPC,	131.09	131.09	131.09	131.09	131.09
	OTHER					
14	GEPL	0.00	0.00	0.00	0.00	0.00
15	PTC	0.00	0.00	0.00	0.00	0.00
16	UI / DEVIATION	99.20	155.44	215.57	279.90	341.73
17	FREE POWER	31.19	31.19	31.19	31.19	31.19
18	TOTAL	810.95	867.19	927.32	991.65	1053.48

The Commission approves power purchase of 810.95 MUs, 867.19 MUs, 927.32 MUs, 991.65 MUs & 1053.48 MUs for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 & FY 2024-25 respectively including 31.19 MUs free power for each year of the control period.

7.9 Energy Balance

The energy balance worked out by the DPN is furnished in the Table below:

Table 7.12: Energy Balance projected by DPN

(In MUs)						
Sl. No.	Particulars	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
A	Energy Requirement					
1	Energy Sales	706.78	745.70	788.92	837.18	891.41
2	Distribution loss %	20.75	20.50	20.50	20.00	19.25
3	Distribution loss	185.06	192.29	200.32	209.29	212.50
4	Energy Requirement	891.84	937.99	989.24	1,046.47	1,103.92
B	Energy Availability					
5	Own generation	91.00	91.00	90.00	90.00	90.00
6	Power from ER	93.50	93.50	93.50	93.50	93.50
7	ER Total losses %	2.26%	2.26%	2.26%	2.26%	2.26%
8	Regional Losses	2.11	2.11	2.11	2.11	2.11
9	Net Energy from ER (6-8)	91.39	91.39	91.39	91.39	91.39
10	Power from NER	576.63	576.63	576.63	576.63	576.63
11	Total power purchase (9+10)	668.02	668.02	668.02	668.02	668.02
12	NER Tr Loss %	2.66%	2.66%	2.66%	2.66%	2.66%
13	NER Tr Loss	17.77	17.77	17.77	17.77	17.77
14	Net power available (11-13)	650.25	650.25	650.25	650.25	650.25
15	UI/ Deviation	172.54	225.74	279.57	338.58	397.80
16	Total power available at state periphery (5+14+15)	919.43	967.00	1,019.84	1,078.84	1,138.06
17	Intra state Tr Loss @ 3%	27.58	29.01	30.60	32.37	34.14
18	Net power available for sale in Distribution(16-17)	891.84	937.99	989.24	1,046.47	1,103.92
19	Surplus (18-4)	0.00	0.00	0.00	0.00	0.00

The DPN has procured power from Eastern Region (ER) and North Eastern Region (NER). The power purchase from ER will be influenced by both ER and NER transmission losses while power purchased from NER will be influenced by only NER transmission losses. Since, intra-state transmission losses have not been segregated by DPN. So, the intra state transmission losses is considered at 3% for each year of the control period of FY 2020-21 to FY 2024-25.

Considering the above factors, the energy balance approved by the Commission are shown as detailed in Table below :

Table 7.13: Energy Balance approved by the Commission

(In MUs)

Sl. No.	Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
A	Energy Requirement					
1	Energy Sales	677.22	722.73	771.52	823.86	880.01
2	Distribution loss %	20.75	20.50	20.25	20.00	19.25
3	Distribution loss	177.32	186.36	195.90	205.96	209.78
4	Energy Requirement	854.54	909.09	967.42	1,029.82	1,089.79
B	Energy Availability					
5	Own generation	91.00	91.00	91.00	91.00	91.00
6	Power from ER	93.50	93.50	93.50	93.50	93.50
7	ER Total losses %	2.26%	2.26%	2.26%	2.26%	2.26%
8	Regional Losses	2.11	2.11	2.11	2.11	2.11
9	Net Energy from ER (6-8)	91.39	91.39	91.39	91.39	91.39
10	Power from NER	618.25	618.25	618.25	618.25	618.25
11	Total power purchase (9+10)	709.63	709.63	709.63	709.63	709.63
12	NER Tr Loss %	2.66%	2.66%	2.66%	2.66%	2.66%
13	NER Tr Loss	18.88	18.88	18.88	18.88	18.88
14	Net power available (11-13)	690.76	690.76	690.76	690.76	690.76
15	UI/ Deviation	99.20	155.44	215.57	279.90	341.73
16	Total power available at state periphery (5+14+15)	880.96	937.20	997.33	1,061.66	1,123.49
17	Intra state Tr Loss @ 3%	26.43	28.12	29.92	31.85	33.70
18	Net power available for sale in Distribution (16-17)	854.54	909.09	967.42	1,029.82	1,089.79
19	Surplus (18-4)	0.00	0.00	0.00	0.00	0.00

7.10 Aggregate Revenue Requirement

The components for calculation of revenue requirement (Total expenses) for the control period of FY 2020-21 to FY 2024-25 are as follows:

- Cost of Power Purchase
- Cost of Generation
- Cost of Fuel
- Operation and Maintenance Expenses
- Transmission charges
- SLDC Fees & Charges

- Intra-state Transmission Charges
- Interest & Finance Charges
- Depreciation
- Interest on working capital
- Return on Equity
- Prior Period Expenses
- Provision for bad debts

7.11 Projected expenses by DPN and decisions of the Commission

The Projected expenses by DPN under each head with analysis and decisions of the Commission are discussed below.

7.12 Cost of Generation

DPN has submitted that it is an integrated utility whereby, 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 the Generation function. DPN has also submitted the O&M expenses incurred towards Likimro HEP, the cost furnished by DPN for the control period of FY 2020-21 to FY 2024-25 are provided in Table below.

Table 7.14: Cost of Generation projected by DPN

Particulars	(₹ in Crores)				
	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
Cost of Generation	17.62	18.50	19.43	20.40	21.42

Commission's Analysis:

The Generation system is being operated & maintained by DPN, cost towards generation has not been separately calculated in the petition. The cost of generation furnished by DPN is only the O&M charges for Likimro HEP. Other components of ARR has not been furnished. Further, function wise segregated accounts have also not been furnished. Therefore, cost of generation has not been approved separately. The same shall be approved separately after DPN segregates the accounts on the basis of function viz. Distribution, Transmission & Generation.

The Commission approves Cost of Generation at ₹ 17.62 Crores, ₹ 18.50 Crores, ₹ 19.43 Crores, ₹ 20.40 Crores and ₹ 21.42 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively, as projected by DPN.

7.13 Power Purchase Cost

Petitioner's Submission:

DPN has projected power purchase cost ₹ 298.86 Crores, ₹ 328.03 Crores, ₹ 359.55 Crores, ₹ 394.93 Crores and ₹ 433.02 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

The assumptions for power purchase costs are as detailed below:

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 the FY 2020-21 to FY 2024-25 is proposed to be met from own generation & power purchase from available sources.

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.

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.

Station-wise power purchase cost projected for the control period of FY 2020-21 to FY 2024-25 are furnished in table below.

Table 7.15: Power Purchase Cost projected by DPN

Particulars	(₹ in Crores)				
	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
Total Power Purchase Cost	298.86	328.03	359.55	394.93	433.02

Commission Analysis:

DPN in its projection has not considered procurement of power from Pare HEP of NEEPCO Ltd. The firm allocation for DPN from the project is 5.40%. Power from above project has been considered for arriving at the power available & power purchase cost. Further, requirement towards RPO has also been calculated as per the NERC RPO Regulations.

The allocation of power from CGSs is provided in table below.

Table 7.16: Allocation of power from CGS

Sl. No.	Source	Capacity (In MWs)	Allocation	
			(In %)	(In MWs)
	Central Sector			
1	FSTPP, NTPC	1,600.00	0.43%	6.88
2	KHSTPP, NTPC	840.00	0.42%	3.53
3	TSTPP, NTPC	1,000.00	0.42%	4.20
4	BGTPP, NTPC	500.00	4.93%	24.65
5	LOKTAK HEP, NHPC	105.00	6.44%	6.76
6	DOYANG HEP, NEEPCO	75.00	5.97%	4.48
7	AGBPP, NEEPCO	291.00	5.81%	16.89
8	AGTPP, NEEPCO	135.00	5.74%	7.74
9	KHANDONG HEP, NEEPCO	50.00	6.65%	3.33
10	KOPI LI HEP, NEEPCO	200.00	6.15%	12.29
11	RANGANADI HEP, NEEPCO	405.00	5.34%	21.61
12	KOPI LI - II HEP, NEEPCO	25.00	5.74%	1.43
13	PARE HEP, NEEPCO	110.00	5.40%	5.94
14	PALATANA, ONGCTPC	726.00	3.72%	27.00
15	TOTAL	6,062.00		146.73

Based on the above the approved power purchase cost is provided below :

Table 7.17: Power Purchase Cost approved by the Commission for FY 2020-21

Sl. No.	Source	Energy Received (MUs)	Unit Cost (₹ / Kwh)	Total Cost (₹ in Crores)
1	NTPC			
	FSTPP	40.79	4.48	18.29
	KHSTPP	23.52	4.05	9.53
	TSTPP	29.19	2.90	8.46
	BGTPP	69.64	9.08	63.25
2	NHPC			
	LOKTAK HEP	55.04	3.35	18.42
3	NEEPCO			
	DOYANG HEP	15.48	5.44	8.42
	AGBPP	79.62	4.96	39.46
	AGTPP	34.22	5.86	20.05
	KHANDONG HEP	16.75	2.44	4.08
	KOPILI HEP	63.34	1.14	7.25
	RANGANADI HEP	73.94	3.44	25.46
	KOPILI - II HEP	6.31	2.48	1.56
	PARE HEP	41.63	5.17	21.51
4	ONGCTPC			
	PALATANA	131.09	3.54	46.47
5	Other sources			
	GEPL			
	PTC			
	UI/ Deviation	99.20	2.55	25.27
6	Total Energy Purchase	779.76		317.49
7	Free Power	31.19		-
8	REC Purchase			6.72
9	Net Power Purchase Expenses	810.95		324.21

Table 7.18: Power Purchase Cost approved by the Commission for FY 2021-22

Sl. No.	Source	Energy Received (MUs)	Unit Cost (₹ / Kwh)	Total Cost (₹ in Crores)
1	NTPC			
	FSTPP	40.79	4.71	19.20
	KHSTPP	23.52	4.26	10.01
	TSTPP	29.19	3.04	8.88
	BGTPP	69.64	9.54	66.41
2	NHPC			
	LOKTAK HEP	55.04	3.51	19.34
3	NEEPCO			
	DOYANG HEP	15.48	5.71	8.84
	AGBPP	79.62	5.20	41.43
	AGTPP	34.22	6.15	21.05
	KHANDONG HEP	16.75	2.56	4.28
	KOPI LI HEP	63.34	1.20	7.61
	RANGANADI HEP	73.94	3.62	26.74
	KOPI LI - II HEP	6.31	2.60	1.64
	PARE HEP	41.63	5.43	22.59
4	ONGCTPC			
	PALATANA	131.09	3.72	48.79
5	Other sources			
	GEPL			
	PTC			
	UI/ Deviation	155.44	2.68	41.58
6	Total Energy Purchase	836.00		348.41
7	Free Power	31.19		-
8	REC Purchase			7.19
9	Net Power Purchase Expenses	867.19		355.60

Table 7.19: Power Purchase Cost approved by the Commission for FY 2022-23

Sl. No.	Source	Energy Received (MUs)	Unit Cost (₹ / Kwh)	Total Cost (₹ in Crores)
1	NTPC			
	FSTPP	40.79	4.94	20.16
	KHSTPP	23.52	4.47	10.51
	TSTPP	29.19	3.20	9.33
	BGTPP	69.64	10.01	69.73
2	NHPC			
	LOKTAK HEP	55.04	3.69	20.30
3	NEEPCO			
	DOYANG HEP	15.48	6.00	9.28
	AGBPP	79.62	5.46	43.50
	AGTPP	34.22	6.46	22.10
	KHANDONG HEP	16.75	2.69	4.50
	KOPI LI HEP	63.34	1.26	7.99
	RANGANADI HEP	73.94	3.80	28.08
	KOPI LI - II HEP	6.31	2.73	1.72
	PARE HEP	41.63	5.70	23.72
4	ONGCTPC			
	PALATANA	131.09	3.91	51.23
5	Other sources			
	GEPL			
	PTC			
	UI/ Deviation	215.57	2.81	60.55
6	Total Energy Purchase	896.13		382.72
7	Free Power	31.19		-
8	REC Purchase			7.69
9	Net Power Purchase Expenses	927.32		390.41

Table 7.20: Power Purchase Cost approved by the Commission for FY 2023-24

Sl. No.	Source	Energy Received (MUs)	Unit Cost (₹ / Kwh)	Total Cost (₹ in Crores)
1	NTPC			
	FSTPP	40.79	5.19	21.17
	KHSTPP	23.52	4.69	11.04
	TSTPP	29.19	3.35	9.79
	BGTPP	69.64	10.51	73.22
2	NHPC			
	LOKTAK HEP	55.04	3.87	21.32
3	NEEPCO			
	DOYANG HEP	15.48	6.30	9.75
	AGBPP	79.62	5.74	45.68
	AGTPP	34.22	6.78	23.21
	KHANDONG HEP	16.75	2.82	4.72
	KOPI LI HEP	63.34	1.32	8.39
	RANGANADI HEP	73.94	3.99	29.48
	KOPI LI - II HEP	6.31	2.87	1.81
	PARE HEP	41.63	5.98	24.90
4	ONGCTPC			
	PALATANA	131.09	4.10	53.80
5	Other sources			
	GEPL			
	PTC			
	UI/ Deviation	279.90	2.95	82.56
6	Total Energy Purchase	960.46		420.83
7	Free Power	31.19		-
8	REC Purchase			8.23
9	Net Power Purchase Expenses	991.65		429.06

Table 7.21: Power Purchase Cost approved by the Commission for FY 2024-25

Sl. No.	Source	Energy Received (MUs)	Unit Cost (₹ / Kwh)	Total Cost (₹ in Crores)
1	NTPC			
	FSTPP	40.79	5.45	22.23
	KHSTPP	23.52	4.93	11.59
	TSTPP	29.19	3.52	10.28
	BGTPP	69.64	11.04	76.88
2	NHPC			
	LOKTAK HEP	55.04	4.07	22.38
3	NEEPCO			
	DOYANG HEP	15.48	6.61	10.23
	AGBPP	79.62	6.02	47.96
	AGTPP	34.22	7.12	24.37
	KHANDONG HEP	16.75	2.96	4.96
	KOPI LI HEP	63.34	1.39	8.81
	RANGANADI HEP	73.94	4.19	30.95
	KOPI LI - II HEP	6.31	3.01	1.90
	PARE HEP	41.63	6.28	26.15
4	ONGCTPC			
	PALATANA	131.09	4.31	56.49
5	Other sources			
	GEPL			
	PTC			
	UI/ Deviation	341.73	3.10	105.83
6	Total Energy Purchase	1,022.29		461.02
7	Free Power	31.19		-
8	REC Purchase			8.74
9	Net Power Purchase Expenses	1,053.48		469.76

The Commission approves the power purchase cost at ₹ 324.21 Crores, ₹ 355.60 Crores, ₹ 390.41 Crores, ₹ 429.06 Crores and ₹ 469.76 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

7.14 Transmission and Other Charges

The Transmission charges payable to PGCIL including SLDC Fees & Charges are estimated based on the quantum of power proposed for wheeling for the control period of FY 2020-21 to 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. The Transmission & Other Charges furnished by DPN for the control period of FY 2020-21 to FY 2024-25 are provided in the Table below.

Table 7.22: Transmission and Other Charges projected by DPN

(₹ in Crores)						
Sl. No.	Source	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
1	Transmission Charges	42.37	44.49	46.71	49.05	51.50
2	SLDC Fees and Charges	0.53	0.56	0.58	0.61	0.64
3	Total	42.90	45.04	47.30	49.66	52.14

Commission's Analysis:

The Commission has considered the transmission charges as projected by DPN.

The intra-state transmission system is being operated & maintained by DPN, transmission charges has not been separately calculated in the petition. Further, function wise segregated accounts have also not been furnished. Therefore, intrastate transmission charges have not been approved separately. The same shall be approved separately after DPN segregates the accounts on the basis of function viz. Distribution, Transmission & Generation.

The Commission approves Transmission and Other Charges at ₹ 42.90 Crores, ₹ 45.04 Crores, ₹ 47.30 Crores, ₹ 49.66 Crores and ₹ 52.14 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively as projected by DPN.

7.15 Operation and Maintenance Expenses

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

- Employee Expenses
- Administration & General Expenses
- Repair & Maintenance Expenses

DPN has submitted that it is now gearing up for meeting the operational requirement of servicing for 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.

The operation & maintenance expenses have been arrived in accordance with the Regulation 89.6 of The NERC (Multi Year Tariff) Regulations, 2016. Details of Employee Expenses, Administration & General Expenses and Repair & Maintenance Expenses are discussed in the subsequent paras.

7.15.1 Employee Cost

The expense head of employee cost consists of salary and allowance, bonus, Leave Travel Concession (LTC) & Honorarium etc. The 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%. The employee expenses as projected by DPN are provided in the table below:

Table 7.23: Employee Cost projected by DPN

(₹ in Crores)					
Particulars	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
Employee Expenses	127.42	134.71	142.42	150.56	159.18

Table 7.24: Administrative and General Expenses projected by DPN

Particulars	(₹ in Crores)				
	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
A & G Expenses	3.67	3.88	4.10	4.33	4.58

Commission's Analysis:

The Petitioner furnished A&G Expenses at ₹ 3.67 Crores, ₹ 3.88 Crores, ₹ 4.10 Crores, ₹ 4.33 Crores and ₹ 4.58 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively. Further, the Commission directs DPN to furnish the details of A&G Expenses at the time of Review & True-up.

The Commission approves A&G Expenses at ₹ 3.67 Crores, ₹ 3.88 Crores, ₹ 4.10 Crores, ₹ 4.33 Crores and ₹ 4.58 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively as projected by DPN.

7.15.3 Repair and Maintenance Expenses

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

The 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%. The R&M expenses as projected by DPN are provided in the table below.

Commission's Analysis and Approval:

The Petitioner furnished the employee expenses at ₹ 127.42 Crores, ₹ 134.71 Crores, ₹ 142.42 Crores, ₹ 150.56 Crores and ₹ 159.18 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively. Further, the Commission directs DPN to furnish the details of Employee Cost at the time of Review & True-up.

Now, The Commission approves Employee Expenses at ₹ 127.42 Crores, ₹ 134.71 Crores, ₹ 142.42 Crores, ₹ 150.56 Crores and ₹ 159.18 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively as projected by DPN.

7.15.2 Administrative 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%. The A&G expenses as projected by DPN are provided in the table below.

Table 7.25: Repair and Maintenance Expenses projected by DPN

(₹ in Crores)					
Particulars	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
R & M Expenses	51.14	54.06	57.15	60.42	63.88

Commission's Analysis:

The Petitioner furnished the Repair & Maintenance Expenses at ₹ 51.14 Crores, ₹ 54.06 Crores, ₹ 57.15 Crores, ₹ 60.42 Crores and ₹ 63.88 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively. The Commission calculated the Repair & Maintenance Expenses @ 5.72% hike year over year on the approved cost of the FY 2019-20 & approved the same for the control period. Further, the Commission directs DPN to furnish the details of A&G Expenses at the time of Review & True-up.

The Commission approves Repair & Maintenance Expenses at ₹ 33.58 Crores, ₹ 35.50 Crores, ₹ 37.53 Crores, ₹ 39.67 Crores and ₹ 41.94 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

7.15.4 Summary of O&M Expenditure approved by the Commission

The summary O&M Expenditure approved by the Commission for the control period of FY 2020-21 to FY 2024-25 are tabulated below:

Table 7.26: Operation & Maintenance Expenditure approved by Commission

(₹ in Crores)						
Sl. No.	Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
1	Employee Expenses	127.42	134.71	142.42	150.56	159.18
2	Administrative & General Expenses	3.67	3.88	4.10	4.33	4.58
3	Repair & Maintenance Expenses	33.58	35.50	37.53	39.67	41.94
4	Total	164.67	174.09	184.05	194.56	205.70

7.16 Capital Expenditure & Capitalisation

DPN has undertaken significant capital expenditure during the FY 2016-17 & FY 2017-18 and has plans to implement schemes for development of infrastructure during the control period of FY 2020-21 to FY 2024-25. The DPN has stated that the infrastructure is insufficient to cater to the present load and hence to meet the increasing demand, capital expenditure proposed are absolutely 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 & capital work in progress the control period of FY 2020-21 to FY 2024-25 are outlined in the table below:

Table 7.27: Capital Works in Progress

(₹ in Crores)

Sl. No.	Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
A	Opening Balance of CWIP	914.02	914.02	914.02	914.02	914.02
B	Fresh Investment during the year	100.00	100.00	100.00	100.00	100.00
C	Investment capitalised out of opening CWIP	-	-	-	-	-
D	Investment capitalised out of fresh investment	100.00	100.00	100.00	100.00	100.00
E	Total Capitalisation during the year (C+D)	100.00	100.00	100.00	100.00	100.00
F	Closing Balance of CWIP (A + B - C - D)	914.02	914.02	914.02	914.02	914.02

Commission's Analysis:

As seen from the above table the progress on completion of works is very slow, unless and until the assets are put to use the very purpose of huge capital investment cannot be achieved.

As such the DPN is directed to review the progress and see that the works are completed within the targeted date.

With this observation the capitalisation of ₹ 100.00 Crores for each year of the control period of FY 2020-21 to FY 2024-25 is approved.

7.17 Gross Fixed Assets (GFA) and Depreciation

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

DPN had not submitted the updated Fixed Asset Register as on 31.03.2019. The DPN has submitted that the assets of the utility have been segregated on the basis of their functions i.e, Generation, Transmission & Distribution. The assets and corresponding depreciation as projected by DPN is detailed in table below:

Table 7.28: Depreciation projected by DPN

(₹ in Crores)						
Sl. No.	Particulars	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
A	Opening GFA	3,128.59	3,228.59	3,328.59	3,428.59	3,528.59
B	Additions during the year	100.00	100.00	100.00	100.00	100.00
C	Closing GFA	3,228.59	3,328.59	3,428.59	3,528.59	3,628.59
D	Total Depreciation	143.43	146.74	150.05	153.36	156.00

Commissions Analysis:

The DPN had not submitted the Fixed Asset Register as on 31.03.2018. The DPN has projected depreciation at ₹ 143.43 Crores, ₹ 146.74 Crores, ₹ 150.05 Crores, ₹ 153.36 Crores and ₹ 156.00 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively. Further, the Commission directs DPN to furnish the audited Fixed Asset Register as on 31.03.2020 with next filing of petition.

Now, the Commission approves Depreciation at ₹ 143.43 Crores, ₹ 146.74 Crores, ₹ 150.05 Crores, ₹ 153.36 Crores and ₹ 156.00 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively as projected by DPN.

7.18 Interest and Finance Charges

Regulation 27 of The NERC (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. The detailed are furnished by DPN is provided in the table below.

Table 7.29: Interest on Loan furnished by DPN

(₹ in Crores)						
Sl. No.	Particulars	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
1	Opening Normative Loan	2,190.01	2,260.01	2,330.01	2,400.01	2,470.01
2	Add: Normative Loan during the year	70.00	70.00	70.00	70.00	70.00
3	Less: Cumulative repayment	364.07	507.50	654.25	804.30	957.66
4	Less: Normative repayment	143.43	146.74	150.05	153.36	156.00
5	Closing Normative Loan	1,752.51	1,675.77	1,595.71	1,512.36	1,426.36
6	Average Normative Loan	1,971.26	1,967.89	1,962.86	1,956.18	1,948.18
7	Rate of Interest	13.80%	13.80%	13.80%	13.80%	13.80%
8	Interest on Loan	272.03	271.57	270.88	269.95	268.85

Commission's Analysis:

The DPN has stated that the entire capital employed has been funded through infusion of funds by Government of Nagaland through budgetary support without any external borrowings. **As such, the Commission has not considered interest on loan for the control period of FY 2020-21 to FY 2024-25.**

7.19 Interest on Working Capital

The DPN has furnished the Interest on Working Capital for the control period of FY 2020-21 to FY 2024-25 in accordance with the Regulation 29.4 of The NERC (Multi Year Tariff) Regulations, 2016. The Interest on working capital projected by the DPN are provided in table below:

Table 7.30: Interest on Working Capital projected by DPN

(₹ in Crores)					
Particulars	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
Interest on Working Capital	10.94	11.45	11.98	12.55	13.15

Commission's Analysis:

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;

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.

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

Table 7.31: Interest on Working Capital approved by the Commission

(₹ in Crores)

Sl. No.	Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
A)	Receivables equivalent to 1 month of expected revenue from sale of electricity at prevailing rates	32.50	34.72	37.11	39.67	42.42
B)	Maintenance of spares at 1% of historical costs of fixed assets	32.29	33.29	34.29	35.29	36.29
C)	O&M Expenses for one month	13.72	14.51	15.34	16.21	17.14
D)	Amount held as Security Deposit in Cash	-	-	-	-	-
E)	Total Working capital ((A+B+C)-D)	78.50	82.51	86.73	91.17	95.85
F)	Rate of Interest @ SBAR of relevant year	13.80%	13.80%	13.80%	13.80%	13.80%
G)	Interest on Working Capital	10.83	11.39	11.97	12.58	13.23

The Commission approves the Interest on Working Capital at ₹ 10.83 Crores, ₹ 11.39 Crores, ₹ 11.97 Crores, ₹ 12.58 Crores and ₹ 13.23 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

7.20 Bad Debts

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

In view of the above the Commission has not allowed Bad Debts for the control period of FY 2020-21 to FY 2024-25.

7.21 Return on Equity

Regulation 26 of The NERC (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.

DPN has submitted that it 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 and aids through financial institutions under various schemes like APDRP, RGGVY etc.

Further, The DPN has provided 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 0% as provided in the Regulation 26.1 of the MYT Regulations, 2016.

In line of the above methodology, DPN has estimated of Return of Equity & the detailed are furnished by DPN is provided in the table below:

Table 7.32: Return on Equity projected by DPN

Particulars	(₹ in Crores)				
	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
Return on Equity	147.80	152.45	157.10	161.75	166.40

Further, the Commission analysed that the basic requirement of return on capital base or return on equity is based on the audited accounts. DPN has not furnished the Audited Accounts viz. Profit & Loss Account, Balance Sheet etc.

In absence of audited accounts, **the Commission cannot allow any return on equity or capital base for the control period of FY 2020-21 to FY 2024-25.** The same shall be considered after the audited accounts are furnished.

7.22 Non-Tariff Income

Regulation 90 of The NERC (Multi Year Tariff) Regulations, 2016 provides that the Non-Tariff Income shall be deducted from the ARR in calculating the Tariff. The Non-Tariff income includes revenue from 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. The Non-Tariff Income projected by the department are provided in table below:

Table 7.33: Non-Tariff Income projected by DPN

(₹ in Crores)					
Particulars	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
Non-Tariff Income	13.24	13.91	14.60	15.33	16.10

The Commission approves the Non-Tariff Income at ₹ 13.24 Crores, ₹ 13.91 Crores, ₹ 14.60 Crores, ₹ 15.33 Crores and ₹ 16.10 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively, as projected by DPN.

7.23 Revenue from Existing Tariff

The DPN has projected revenue from sale of energy from within the state with existing tariff at ₹ 383.76 Crores for the FY 2020-21.

Commissions Analysis:

Category wise revenue projected by DPN for the FY 2020-21 is provided in the chart below:

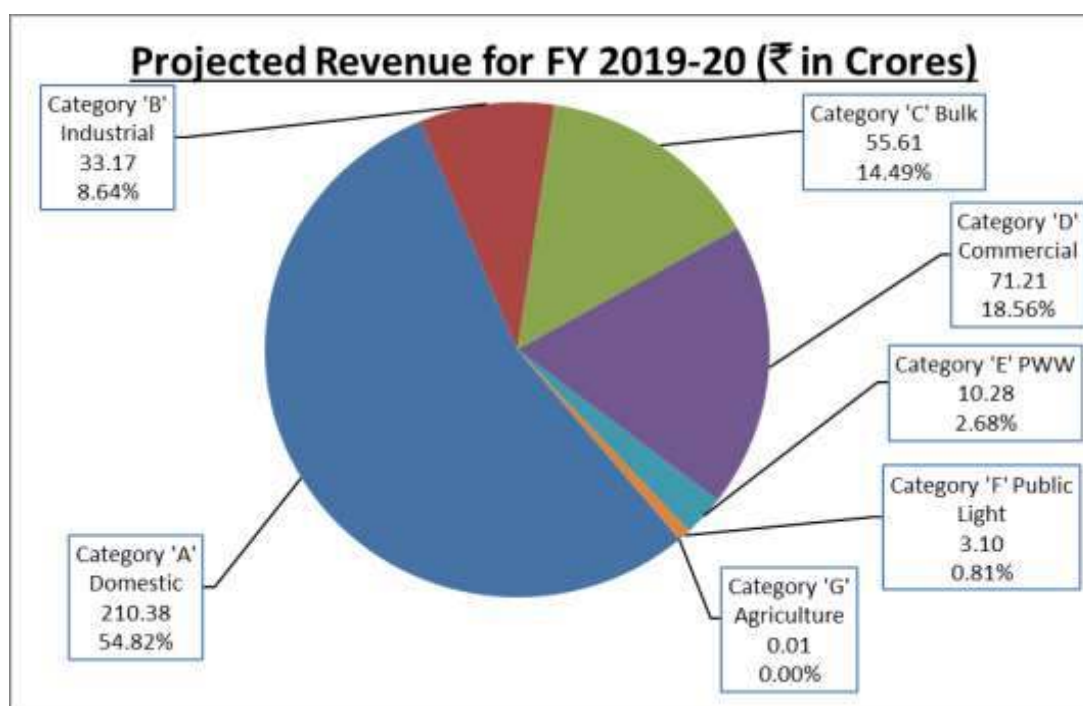


Table 7.35: Aggregate Revenue Requirement projected by DPN

(₹ in Crores)

Sl. No.	Particulars	FY 2020-21 (Projected)	FY 2021-22 (Projected)	FY 2022-23 (Projected)	FY 2023-24 (Projected)	FY 2024-25 (Projected)
1	Cost of Power Purchase	298.86	328.03	359.55	394.93	433.02
2	Cost of Generation	17.62	18.50	19.43	20.40	21.42
3	Cost of Fuel	-	-	-	-	-
4	Operation & Maintenance Expenses	182.23	192.65	203.67	215.31	227.64
5	Transmission charges	42.90	45.04	47.30	49.66	52.14
6	SLDC fees and charges	-	-	-	-	-
7	Intra- state Transmission Charges	-	-	-	-	-
8	Interest & Finance Charges	272.03	271.57	270.88	269.95	268.85
9	Depreciation	143.43	146.74	150.05	153.36	156.00
10	Interest on Working Capital	10.94	11.45	11.98	12.55	13.15
11	Return on Equity	147.80	152.45	157.10	161.75	166.40
12	Prior period expenses	-	-	-	-	-
13	Provision for Bad Debt	-	-	-	-	-
14	Total Revenue Requirement	1,115.82	1,166.44	1,219.95	1,277.92	1,338.62
15	Less: Non-Tariff Income	13.24	13.91	14.60	15.33	16.10
16	Net Revenue Requirement (14-15)	1,102.56	1,152.53	1,205.35	1,262.59	1,322.52

Commission has analyzed various items of expenditure as discussed earlier and approves the expenses and net ARR as shown in the table below.

Table 7.36: Aggregate Revenue Requirement approved by the Commission

(₹ in Crores)

Sl. No.	Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
1	Cost of Power Purchase	324.21	355.60	390.41	429.06	469.76
2	Cost of Generation	17.62	18.50	19.43	20.40	21.42
3	Cost of Fuel	-	-	-	-	-
4	Operation & Maintenance Expenses	164.67	174.09	184.05	194.56	205.70
5	Transmission charges	42.90	45.04	47.30	49.66	52.14
6	SLDC fees and charges	-	-	-	-	-
7	Intra- state Transmission Charges	-	-	-	-	-
8	Interest & Finance Charges	-	-	-	-	-
9	Depreciation	143.43	146.74	150.05	153.36	156.00
10	Interest on Working Capital	10.83	11.39	11.97	12.58	13.23
11	Return on Equity	-	-	-	-	-
12	Prior period expenses	-	-	-	-	-
13	Provision for Bad Debt	-	-	-	-	-
14	Total Revenue Requirement	703.66	751.35	803.21	859.62	918.25
15	Less: Non-Tariff Income	13.24	13.91	14.60	15.33	16.10
16	Less: Revenue from Sale of Power-Exchange	-	-	-	-	-
17	Net Revenue Requirement (14-15-16)	690.42	737.44	788.61	844.29	902.15

It is observed that the revenue from domestic category contributes about 54.82%, Hence, impact of change in tariff on the revenue is mostly dependent on these categories. However, Commercial, Industrial & Bulk category also has significant consumption. With the approved sales of 677.22 MUs within the state for the FY 2020-21, the revenue approved at the existing Tariff is detailed in table below:

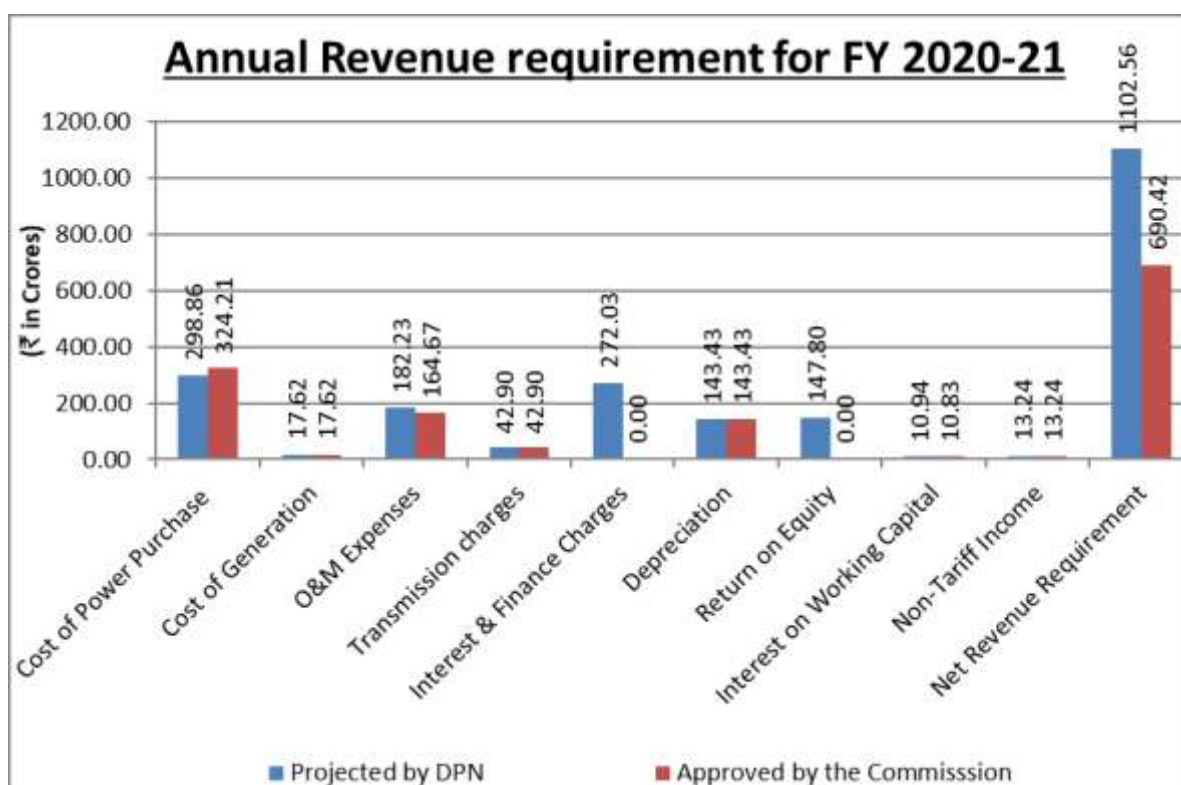
Table 7.34: Revenue from Existing Tariff approved by the Commission for FY 2020-21

Sl. No.	Particulars	Energy Sales (In MUs)	Average Rate (₹/kWh)	Amount (₹ in Crores)
1	Category 'A' Domestic	233.06	5.41	126.19
2	Category 'B' Industrial	62.68	6.14	38.48
3	Category 'C' Bulk	100.71	6.30	63.45
4	Category 'D' Commercial	98.58	7.15	70.52
5	Category 'E' PWW	11.50	6.60	7.59
6	Category 'F' Public Light	14.01	3.13	4.38
7	Category 'G' Agriculture	0.02	3.10	0.01
8	Category 'H' Temporary Connection	0.00	0.00	0.00
9	Category 'T' Inter-state	0.00	0.00	0.00
10	Kuti Jyoti (Point)	0.00	0.00	0.00
11	Single Point Metered Rural	136.41	5.00	68.20
12	Single Point Metered Urban	20.26	5.50	11.14
13	Total sales within State	677.22	5.76	389.96
14	Sales Outside State	0.00	0.00	0.00
15	Total Sales (13+14)	677.22	5.76	389.96

The Commission approves the revenue from the existing tariff at ₹ 389.96 Crores from sale of 677.22 MUs within the State at an average rate of at ₹ 5.76/kWh.

7.24 Aggregate Revenue Requirement (ARR)

The Aggregate revenue requirement projected by DPN for the control period of FY 2020-21 to FY 2024-25 are furnished in the table below.



The Commission approves the Net Revenue Requirement of ₹ 690.42 Crores against ₹ 1102.56 Crores projected by DPN for the FY 2020-21.

7.25 Revenue Gap

Based on the approved Aggregate Revenue Requirement and revenue from existing tariffs at approved sales for the FY 2020-21, the resultant GAP is as shown in the table below.

Table 7.37: Revenue at Existing Tariff and Gap

(₹ in Crores)		
Sl. No.	Particulars	FY 2020-21
1	Net Revenue Requirement	690.42
2	Revenue from Retail Sales at Existing Tariff	389.96
3	Net Gap (1-2)	300.45
4	Energy Sales within the state (In MUs)	677.22
5	Average cost (In ₹/kWh)	10.19
6	Average revenue realisation (In ₹/kWh)	5.76

7.26 Recovery of Revenue Gap for the FY 2020-21

As seen from para 7.25 above there is a revenue gap of ₹ 300.45 Crores which is about 43.52% of net ARR for the FY 2020-21.

In this Petition the DPN has submitted as below:

“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.”

However, DPN proposed an average increase in tariff by 4.57% to bridge the gap partially.

The Commission considers it appropriate to revise the tariffs at an average of 1.68%, without giving much tariff shock to consumers to bridge the gap partially. Owing to revision of tariffs, the DPN is expected to get additional revenue of ₹ 6.54 Crores as detailed in table below:

Table 7.38: Revenue from revised Tariff for FY 2020-21 approved by the Commission

Sl. No.	Particulars	Energy Sales (In MUs)	Average Rate (₹/Kwh)	Amount (₹ in Crores)
1	Category 'A' Domestic	233.06	5.50	128.09
2	Category 'B' Industrial	62.68	6.29	39.43
3	Category 'C' Bulk	100.71	6.60	66.47
4	Category 'D' Commercial	98.58	7.24	71.35
5	Category 'E' PWW	11.50	7.00	8.05
6	Category 'F' Public Light	14.01	3.13	4.38
7	Category 'G' Agriculture	0.02	3.10	0.01
8	Category 'H' Temporary Connection	0.00	0.00	0.00
9	Category 'I' Inter-state	0.00	0.00	0.00
10	Kuti Jyoti (Point)	0.00	0.00	0.00
11	Single Point Metered Rural	136.41	5.00	68.20
12	Single Point Metered Urban	20.26	5.20	10.53
13	Total sales within State	677.22	5.85	396.50
14	Sales Outside State	0.00	0.00	0.00
15	Total Sales (13+14)	677.22	5.85	396.50

With the revision of tariff, the DPN will generate additional revenue of ₹ 6.54 Crores. Thereby, the revenue gap is revised to ₹ 293.91 Crores (i.e. ₹ 300.45 Crores – ₹ 6.54 Crores), which the DPN shall meet from Government subsidy and by improving internal efficiency.

The Commission, accordingly, approves revenue from revised tariffs at ₹ 396.50 Crores with the energy sales of 677.22 MUs. Due to the approved tariff hike, the revenue gap has reduced to ₹ 293.91 Crores as against ₹ 300.45 Crores (approved in Para 7.25) for the FY 2020-21.

7.27 Government Subsidy

As seen from the above it is clear that the revenue from sale of power is not sufficient to meet the expenditure of DPN. As a result of this the DPN shall continue to depend upon the subsidy from Government of Nagaland. Accordingly, ₹ 293.91 Crores shall be met from Government subsidy.

8. TARIFF PRINCIPLES AND DESIGN

8.1 Background

- (a) The Commission in determining the revenue requirement of DPN for the FY 2019-20 and the retail tariff for the FY 2019-20 has been guided by the provisions of the Electricity Act, 2003, the National Tariff Policy (NTP), Regulations on Terms and Conditions of Tariff issued by the Central Electricity Regulatory Commission (CERC) and Regulations on Terms and Conditions of Tariff notified by the NERC. Section 61 of the Act lays down the broad principles, which shall guide determination of retail tariff. As per these principles the tariff should “Progressively reflect cost of supply” and also reduce cross subsidies “within the period to be specified by the Commission”. The Act lays special emphasis on safeguarding consumer interests and also requires that the costs should be recovered in a reasonable manner. The Act mandates that tariff determination should be guided by the factors, which encourage competition, efficiency, economical use of resources, good performance and optimum investment.

The NTP notified by Government of India provides comprehensive guidelines for determination of tariff as also working out the revenue requirement of power utilities. The Commission has endeavored to follow these guidelines as far as possible.

- (b) The mandate of the NTP on cross subsidy is that tariff should be within plus / minus 20% of the average cost of supply. This could not be achieved due to high cost of power, low paying capacity of the consumers and lack of industrialization. The DPN has not furnished the voltage-wise cost of supply. A directive has been issued in this order to build up data to arrive at cost of supply at various voltage levels etc. Hence, in working out the cost of supply, the Commission has gone on the basis of average cost of supply in the absence of relevant data for working out consumer category wise cost of supply. However, in this tariff order an element of performance target has been indicated by maintaining the set target for T&D loss reduction for the control period

of FY 2020-21 to FY 2024-25. This guides the DPN for better performance by reduction of loss level, which will result in substantial reduction in average cost of supply.

- (c) Section 8.3 of National Tariff Policy lays down the following principles for tariff design:
- (i) In accordance with the National Electricity Policy, consumers below poverty line who consume below a specified level, say 30 units per Month, may receive a special support through cross subsidy. Tariffs for such designated group of consumers will be at least 50% of the average cost of supply. This provision will be re-examined after five years.
 - (ii) For achieving the objective that the tariff progressively reflects the cost of supply of electricity, the SERC would notify the roadmap, with a target that tariffs are within $\pm 20\%$ of the average cost of supply. The road map would have intermediate milestones, based on the approach of a gradual reduction in cross subsidy.
 - (iii) For example if the average cost of service is ₹ 3.00 per unit, at the end of year 2010-11 the tariff for the cross subsidized categories excluding those referred to in para-1 above should not be lower than ₹ 2.40 per unit and that for any of the cross subsidizing categories should not go beyond ₹ 3.60 per unit.
 - (iv) While fixing tariff for agricultural use, the imperatives of the need of using ground water resources in a sustainable manner would also need to be kept in mind in addition to the average cost of supply. The tariff for agricultural use may be set at different levels for different parts of the State depending on the condition of the ground water table to prevent excessive depletion of ground water.”
 - (v) NERC MYT Regulations, 2016 specifies that
 - a. The cross subsidy for a consumer category means the difference between the average per unit rate based on tariff schedule of the Commission for

that Category and the combine average cost of supply per unit expressed in percentage terms as a portion of the combined average cost of supply.

- b. In the first phase, the Commission shall determine the tariff, so that it progressively reflects the combined average cost of supply of electricity and also reduce cross-subsidies within a reasonable period. In the second phase, the Commission shall consider moving towards category wise cost of supply as a basis for determination of tariff.
- (d) NEP aims at increased access to electricity, supply of reliable and quality power at reasonable rates, minimum lifeline consumption, financial turnaround of consumer interest. The Commission has considered factors as far as possible which aim at achieving the objectives of NEP while determining the revenue requirement of the DPN and designing the retail tariff for its consumers. It has also aimed to raise the per capita consumption of the State from the existing level. The Commission endeavours that the tariff progressively reflects cost of supply in a shortest period and the government subsidy is reduced gradually. The Tariff has been rationalized with regards to inflation, paying capacity and avoid Tariff shock.

8.2 Tariff Proposed by the DPN and approved by the Commission

8.2.1 Tariff Categories

In the ARR and Tariff Petition of DPN for the FY 2020-21 has not proposed any changes in the existing categories of consumers and tariff structure.

The Commission considers retaining the existing categories as stated below:

- 1 Category 'A' Domestic
- 2 Category 'B' Industrial
- 3 Category 'C' Bulk
- 4 Category 'D' Commercial
- 5 Category 'E' PWW
- 6 Category 'F' Public Light
- 7 Category 'G' Agriculture
- 8 Category 'H' Temporary Connection
- 9 Category 'I' Inter-state
- 10 Kuti Jyoti (Point)
- 11 Single Point Metered Rural
- 12 Single Point Metered Urban

8.2.2 Existing & Proposed Tariff

DPN in its tariff petition for the FY 2020-21 has proposed for revision of the existing retail tariffs to various categories of consumers to earn additional revenue of ₹ 18.02 Crores to meet the gap partially as shown below:

The DPN has proposed tariff revision with an average increase of 4.57% from the existing tariff. in this Tariff proposal only partial recovery of cost is proposed . The summary of the tariff proposal by DPN for the FY 2020-21 is tabulated below:

Table 8.1: Existing Tariff v/s Proposed Tariff for FY 2020-21

Sl. No.	Category of Consumers	Existing Rate (In ₹/kWh)	Proposed Rate (In ₹/kWh)
1	Category 'A' Domestic		
a)	Up to 30 kwh	4.50	4.70
b)	31 to 100 kwh	5.40	5.70
c)	101-250 kwh	6.00	6.30
d)	Above 250 kwh	7.00	7.35
2	Category 'B' Industrial		
a)	Up to 500 kwh	5.80	6.10
b)	501 to 5000 kwh	6.45	6.80
c)	Above 5000 kwh	7.20	7.60
3	Category 'C' Bulk	6.30	6.60
4	Category 'D' Commercial		
a)	Up to 60 kwh	7.00	7.35
b)	61 to 240 kwh	8.10	8.50
c)	Above 240 kwh	9.15	9.60
5	Category 'E' PWW	6.60	7.00
6	Category 'F' Public Light	* To be recovered from the consumers	* To be recovered from the consumers
7	Category 'G' Inter-state	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	Kuti 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:		
a)	Domestic	Rs. 10 per connection / month	Rs. 10 per connection / month
b)	Commercial	Rs. 15 per connection / month	Rs. 15 per connection / month
c)	Industrial	Rs. 20 per connection / month	Rs. 20 per connection / month
d)	Bulk Supply	Rs. 25 per connection / month	Rs. 25 per connection / month

Commissions analysis:

The Commission after detailed analysis and prudent scrutiny of the aggregate revenue requirement filed by the DPN, has arrived at a more realistic revenue requirement.

8.2.3 Tariff approved by the Commission

Having considered the petition of DPN for approval of Annual Revenue Requirement (ARR) and determination of Retail Tariff for supply of energy and having approved the Annual Revenue Requirement (ARR) with a gap of ₹ 293.91 Crores, the Commission considers to revise the tariff under Telescopic billing with an average increase of 1.68% as detailed below:

8.2.4 Tariff for prepaid metered consumers approved by the Commission

The DPN has introducing prepaid metering as pilot scheme for selected sub divisions. The scheme has improved the billing & collection efficiency of the billing function. In order encourage consumers to opt for the prepaid metering system, department proposes separate Tariff Schedule for the prepaid metered consumers. Under prepaid category, Consumers also pay 100% upfront in advance. The tariff for prepaid is therefore proposed at a simple fixed rate for a particular Category as an incentive. Accordingly, an in principle separate Tariff Schedule is proposed for the prepaid metered consumers by DPN for the FY 2020-21. The Tariff proposal for prepaid metered consumers by DPN and approves by the Commission for the FY 2020-21, as detailed below:

Table 8.3: Tariff for Prepaid Metered Consumers approved by Commission for FY 2020-21

Sl. No.	Category of Consumers	Proposed Rate (In ₹/kWh)	Approved Rate (In ₹/kWh)
1	Category 'A' Domestic		
	All Consumers	5.25	5.15
2	Category 'B' Industrial		
	All Consumers	6.10	6.00
3	Category 'C' Bulk		
	All Consumers	6.60	6.40
4	Category 'D' Commercial		
	All Consumers	7.75	7.50
5	Category 'H' Agriculture		
	All Consumers	3.25	3.10

Details are given in tariff schedule in the Appendix.

8.2.5 Common Items

DPN has not proposed any changes in rates and general conditions of supply of electricity to consumers. The Commission has approved it as given in Tariff Schedule in Appendix.

Table 8.2: Tariff approved by the Commission for FY 2020-21

Sl. No.	Category of Consumers	Approved Rate (In ₹/kWh)
1	Category 'A' Domestic	
a)	Up to 30 kwh	4.70
b)	31 to 100 kwh	5.45
c)	101-250 kwh	6.00
d)	Above 250 kwh	7.00
2	Category 'B' Industrial	
a)	Up to 500 kwh	6.00
b)	501 to 5000 kwh	6.50
c)	Above 5000 kwh	7.30
3	Category 'C' Bulk	6.60
4	Category 'D' Commercial	
a)	Up to 60 kwh	7.10
b)	61 to 240 kwh	8.20
c)	Above 240 kwh	8.90
5	Category 'E' PWW	7.00
6	Category 'F' Public Light	* To be recovered from the consumers
7	Category 'G' Inter-state	6.10
8	Category 'H' Agriculture	3.10
9	Category 'I' Temporary Connection	DLF - Rs. 11.00 Others - Rs. 14.00
10	Kuti Jyoti (Point)	Same as DLF
11	Single Point Metered Rural	5.00
12	Single Point Metered Urban	5.20
*	Charges for public lighting have to be recovered from the consumers of Domestic, Commercial, Industrial and Bulk categories at the rates shown below:	
a)	Domestic	Rs. 10 per connection / month
b)	Commercial	Rs. 15 per connection / month
c)	Industrial	Rs. 20 per connection / month
d)	Bulk Supply	Rs. 25 per connection / month

Details are given in tariff schedule in the Appendix.

8.2.6 Miscellaneous Charges

DPN has not proposed any changes in the miscellaneous items. The Commission has approved the same rates for all miscellaneous items of services as given in the Tariff Schedule in Appendix.

The Tariff shall be effective from 1st April, 2020 and shall remain in force till 31st March, 2021 or till further order.

Place: Kohima.

Dated the 20th March, 2020.

Sd/-
(W. Y . YANTHAN)
Secretary,
NERC, Kohima.

9. DIRECTIVES

Background

While examining the information and data contained in the proposed Tariff petition for the FY 2020-21, it is observed that there are data gaps and many vital information were based on certain assumptions; and as a result, there has been difficulties in finalization of ARR and determination of Tariff. Most of the areas of the operational and financial performance of DPN require substantial improvement.

Directives were issued in the previous orders for reducing costs and improving efficiency in the operation of the department. The Commission expected that DPN would take prompt action on the directives and monitor their implementation. DPN is yet to take action on most of the directives. In some cases, action has been initiated but monitoring of the implementation is essential to achieve the objectives of the directives.

In the above background the Commission is constrained to reiterate most of the directives which were issued in the earlier tariff orders and which have not been fully complied with and also hereby issue specific new directives.

Directive 1: Maintenance of Asset Registers and Audited Annual Accounts

The DPN has stated that the complete data of fixed assets is not available. Unless the function wise, asset wise data is up-dated, correct asset value and depreciation thereon cannot be ascertained. The DPN is directed to get the asset registers built up, and submit updated assets & depreciation registers.

Accounts are to be maintained for construction and operation activities of the Power Department. Audited Annual Accounts should be submitted. In the event of delay in getting Accounts audited by the Accountant General, the DPN can get the same audited by CAG empaneled auditors and submit the same with the future filing.

The DPN is directed to start the process immediately and complete before submission of next Tariff Petition and report compliance by 30th June, 2013.

Compliance Status:

It is submitted that the department has started the compilation of the details of Assets from many divisions. However, since the details of assets are to be reconciled with the capital expenditure booked to the Annual Accounts as audited by AG since 1981, it is taking time to trace & reconcile the records for the period of last 35 years. The Fixed Assets & Depreciation register shall be ready by 30.09.2016.

The Department will initiate the process of getting the accounts audited by CAG empanelled auditors pending audit by the Accountants General and submit compliance report to the Hon`ble Commission.

Comments of the Commission:

The DPN is directed to submit definite compliance report by 30.09.2016.

Reply:

It is submitted that the Fixed Asset Register has been compiled and is attached. The DPN has completed the compilation of Annual Accounts upto the FY 2014-15. AG Nagaland has audited the accounts upto the FY 2014-15. The audit certificate is yet to be issued. DPN is pursuing the same and shall submit to the Hon`ble Commission immediately on receipt of the same.

Comments of the Commission:

The initiative of DPN in regard to the Fixed Asset Register is appreciated. DPN is directed to update the Fixed Asset & Depreciation Register every year with all assets procured/constructed during the year, assets discarded/disposed off during the year, depreciation during the year. Further, details of assets which are totally depreciated should also be maintained. The updated asset register must be submitted along with the petition every year.

DPN has submitted that it has completed the compilation of Annual Accounts up-to the FY 2014-15. The annual account is to be compiled for every year. The audited annual account is required to be submitted along with the Tariff Petition. In absence of CAG audit, the same can be audited by CAG empaneled Chartered Accountants.

As per the MYT regulation, truing up of previous years is required to be done on the basis of the audited accounts.

Hence, DPN is directed to submit the updated Fixed Asset Register and audited Annual Accounts along with the next tariff petition.

Reply:

It is submitted that the Fixed Asset Register & Depreciation Register upto FY 2015 -16 stands submitted. The department shall compile the Fixed Asset Register & Depreciation Register for the FY 2016-17 & submit the same to the Hon'ble Commission within 31.03.2018.

The Proforma Accounts for the FY 2014-15 has been audited by AG. The Accounts for the FY 2015-16 is being compiled and the same shall be submitted after the same is audited.

Comments of the Commission:

DPN is directed to compile & submit the updated Fixed Asset Register and the Annual Accounts along with the next Tariff Petition positively. Fixed Asset Register is required to be updated yearly.

Further, Power purchase is the major component of ARR, hence, DPN is directed to compile the source/utility wise details of power purchase units & cost. The detailed calculation of power purchase & transmission cost based on the CERC tariff orders for central generating/transmission utilities from which power is procured & PPAs signed in this respect is to be submitted. The details of power purchase cost for power procurements through bilateral/trading/banking mechanism is also to be reported. These reports are to be submitted along with the next Tariff Petition.

Reply:

It is submitted that the Annual Accounts of the Department has been compiled up-to FY 2016-17. Copy of the same is attached. The Fixed Asset Register has been updated up-to - 31.03.2016. The Fixed Asset Register for the FY 2016-17 & FY 2017-18 is under compilation and shall be submitted along with the next Tariff Petition.

It is submitted that the Power Purchase accounting & reconciliation has been done up-to FY 2017-18. The report is being submitted separately.

Comments of the Commission:

DPN is directed to compile & submit the updated Fixed Asset Register and the Annual Accounts along with the next Tariff Petition positively. Fixed Asset Register is required to be updated yearly.

Reply:

It is submitted that the Fixed Asset Register for the FY 2016-17 & FY 2017-18 has been completed and the same is being submitted separately.

The power purchase reconciliation with all the utilities for the FY 2018-19 has been completed and the same is being submitted shortly.

Comments of the Commission:

DPN is directed to compile & submit the Fixed Asset Register and Annual Accounts for the FY 2016-17 & FY 2017-18 by 30.09.2020. Fixed Asset Register & Annual Accounts for the FY 2018-19 & FY 2019-20 shall be compiled & submitted along with the next Tariff Petition positively.

Power purchase cost is the major component of the cost of supply of the Department and has substantial impact on the Tariff. It is directed that the Department shall submit details of power purchase bills, payments, outstandings, surcharge paid for late payment of power purchase & transmission bills and rebate received duly reconciled with the power generating & transmitting utilities.

Comments of the Commission:

DPN is directed to submit the details of steps taken to bring down the pilferage of energy & segregation of technical & commercial losses by 30.06.2018.

Reply:

The details of the steps taken & status of the same is being compiled and shall be submitted separately.

Comments of the Commission:

DPN is directed to submit the details of steps taken to bring down the pilferage of energy & segregation of technical & commercial losses by 30.09.2019.

Reply:

The details of the steps taken & status of the same is being compiled and shall be submitted separately.

Comments of the Commission:

The Commission again reiterates its earlier directive and directs to DPN to submit the details of steps taken to bring down the pilferage of energy and segregation of technical & commercial losses by 30.09.2020.

Directive 4: Replacement of Non-Functional / Defective Meters

DPN is directed to submit progress report to the Commission on the number of defective meters replaced quarterly.

Reply:

It is submitted that the details of replacement of defective meters shall be submitted separately by 31.01.2018. Hon'ble Commission may kindly allow the same.

Comments of the Commission:

DPN has not submitted the progress report till date. DPN is directed to submit the details by 30.06.2018.

Directive 2: Management Information System (MIS)

The DPN has not maintained proper data in respect of sales (slab and sub slab wise), revenue and revenue expenses as also the category wise / slab wise number of consumers, connected load / demand etc. for proper analysis of the past data, based on actuals and estimation of proper projections in consideration of the ARR and Tariff Petition.

The DPN is directed to take steps to build credible and accurate data base and management information system (MIS) to meet the requirements for filing ARR & Tariff Petition as per regulatory requirement. The formats, software and hardware may be synchronized with the Regulatory Information and Management System (RIMS) circulated by Central Electricity Regulatory Commission (CERC).

Reply:

It is submitted that the comprehensive online system for maintenance of Regulatory information is yet to be developed. However, department is maintaining data as is required for filing of the petitions and other statutory & regulatory requirements. The data gaps as pointed out by the Hon'ble Commission are being worked upon and the same shall be made available once the information gathering & compilation system is made online.

Comments of the Commission:

The Commission again reiterates its earlier directive to take steps to build credible and accurate data base and management information system (MIS). DPN is directed to provide the same in next Tariff Petition filings.

Directive 3: Pilferage of Energy

Pilferage of energy may be by illegal tapings/hooking from electrical lines, tampering of meters etc. The Commission feels that there is need to launch an extensive drive to remove illegal connections, if any, check meter tampering, replace the defective meters, maintain proper account of un-metered services and keep constant vigil so that corrective measures could be taken to reduce the AT & C losses. Requisite action may be taken as per the provisions under sections 135 and 138 of Electricity Act, 2003.

Reply:

The status of defective & replacement thereof is being submitted separately.

Comments of the Commission:

DPN has not submitted the progress report till date. DPN is directed to submit the details by 30.09.2019.

Reply:

It is submitted that the details of defective meters shall be submitted shortly.

Comments of the Commission:

DPN has not submitted the progress report till date. DPN is directed to submit the details by 30.09.2020.

Directive 6: Energy Audit

The DPN is directed to chalk out a programme to provide meters to all the feeders (132 kV, 66 kV, 33 kV and 11 kV) and distribution transformers to identify the high loss areas and take appropriate measures to reduce both technical and commercial losses to the level fixed by the Commission. The DPN shall also comply with loss reduction trajectory for T&D losses for the next three years.

The investment required to reduce the losses shall be included in the investment plan for augmentation of T&D system to be submitted to the Commission. Effective technical and administrative measures shall be taken to reduce the commercial losses.

Compliance status:

It is submitted that as directed, the department has taken steps for replacement of defective meters and for providing meters to unmetered connections. Further, efforts are being made to identify the high loss feeders. However, comprehensive feeder wise energy audit is yet to be taken up. The department shall take steps to conduct the energy audit and report the status to the Hon'ble Commission.

Comments of the Commission:

The actual T&D loss during FY 2011-12 works out to 36.45% as against 31.56% fixed by the Commission and for FY 2013-14 at 29.70% as against 27% fixed by the Commission. But during FY 2014-15, 26.25% recorded as against 26.5% fixed by the Commission. This indicates that the measures taken by the DPN in reducing T&D Losses are yielding results. This should be continued and all defective meters be replaced with sound meters and unmetered connections be provided with meters and feeder wise energy audit be conducted and identify technical and commercial losses separately. Quarterly progress report be submitted to Commission starting from 01.07.2016.

Reply:

It is submitted that the DPN has not been able to conduct comprehensive energy audit across its operational area yet. However, steps for identification of high loss feeders and corrective measures are being taken at all divisions. The energy audit exercise shall be done at earliest and report submitted to the Hon'ble Commission.

Comments of the Commission:

DPN is directed to conduct energy audit and submit report at earliest. Further, all defective meters be replaced with sound meters and unmetered connections be provided with meters and feeder wise energy audit be conducted and identify technical and commercial losses separately. Quarterly progress report be submitted to Commission.

Reply:

It is submitted that DPN has not been able to conduct energy audit. However, steps shall be taken for compliance of the Directive and report shall be submitted.

Comments of the Commission:

DPN is directed to get the energy audit done & submit the report along with next Tariff Petition.

Reply:

It is submitted that DPN has not been able to conduct energy audit. However, steps shall be taken for compliance of the Directive and report shall be submitted.

Comments of the Commission:

DPN is directed to get the energy audit done & submit the report along with next Tariff Petition.

Reply:

It is submitted that DPN has not been able to conduct energy audit. However, steps shall be taken for compliance of the Directive and report shall be submitted.

Comments of the Commission:

DPN is directed to get the energy audit done & submit the report by 30.09.2020.

Directive 7: Approval of Commission for Investment Plan

Annual Investment Plan shall be submitted to the Commission and approval of Commission for all major capital works costing Rs. 5.00 Crore and above before execution of the works.

Reply:

It is submitted that the capital expenditure of the Department is mostly funded through approved schemes sponsored by the Central Government & various subsidies/grants received from state/ central government. However, as directed DPN shall submit the investment proposal for the approval of the Hon'ble Commission from FY 2017-18.

Comments of the Commission:

DPN has so far not submitted any proposal of capital investment for approval of the Commission. Proposal for approval of works costing more than Rs. 5 Crores be submitted to Commission from 01.04.2017 onwards, invariably.

Reply:

Details of all capital investments more than Rs. 5 Crores planned during the FY 2017-18 & 2018-19 shall be submitted by 31.01.2018. Hon'ble Commission may kindly allow the same.

Comments of the Commission:

DPN is directed to submit the proposal for approval of works costing more than Rs. 5 Crores to Commission from the FY 2018-19.

Reply:

It is submitted that details capital expenditure for the FY 2017-18 stands submitted along with the petition. The details of capital expenditure for the FY 2018-19 shall be submitted shortly.

Comments of the Commission:

DPN is directed to submit the separate proposal for approval of works costing more than Rs. 5 Crores to the Commission.

Reply:

It is submitted that the submission in respect of the works costing more than Rs. 5 Crores shall be made from the next financial year.

Comments of the Commission:

DPN is directed to submit the separate proposal for approval of works costing more than Rs. 5 Crores to the Commission.

Directives 8: Interest on Security Deposit

DPN did not indicate the amount of security deposit collected from the consumers in the tariff petition. As per regulation 6.10(8) of NERC (Electricity Supply Code) Regulations, 2012 read with Section 47 (4) of Electricity Act, 2003 the distribution licensee shall pay interest on security deposit to the consumers every year by crediting the amount in CC bills. Details of SD collected and interest paid to the consumers on such deposits shall be reported along with the next Tariff Petition.

Reply:

It is submitted that the department is compiling the details of the security deposits and shall submit the same at earliest.

Comments of the Commission:

The DPN has not complied with the direction. The commission reiterates its directive to compile the details of security deposits from consumers and submit the same before filing the next petition. DPN shall calculate Interest on the security deposits and pay the same to the consumers by crediting the same to the monthly bills.

Reply:

It is submitted that DPN has not been able to compile the data relating to security deposits and shall complete the exercise within the FY 2017-18. DPN shall submit the compliance report after the completion of the exercise. Hon'ble Commission may kindly allow the same.

Comments of the Commission:

The DPN has not complied with the direction. The commission reiterates its directive to compile the details of security deposits from consumers and submit the same by 30.06.2018.

Reply:

It is submitted that DPN has not been able to compile the data relating to security deposits and shall complete the exercise. DPN shall submit the compliance report after the completion of the exercise. Hon'ble Commission may kindly allow the same.

Comments of the Commission:

The DPN has not complied with the direction. The commission reiterates its directive to compile the details of security deposits from consumers and submit the same by 30.09.2019.

Reply:

It is submitted that the details of security deposit is not compiled and a separate exercise

Comments of the Commission:

The DPN has not complied with the direction. The commission reiterates its directive and directs to the DPN to report the action taken in this regard before filing of the next Tariff Petition to be filed by 30.11.2020.

Directives 10: Transformer failures

Department is required to minimise the transformer failures. To minimize transformer failures, the LT network and DTR structures shall be maintained properly by rectification of defects. Field officers in charge of O&M of distribution shall be pulled up and Progress is to be watched. Field units where DTR failures are more, shall be paid more attention.

A detailed plan of action should be submitted to the Commission along with the next tariff petition.

Reply:

The progress report on the steps taken to bring down the transformer failure shall be submitted within 31.01.2018.

Comments of the Commission:

The DPN is directed to submit the details of transformer failures during the FY 2017-18 along with steps taken to bring down the same

Reply:

The progress report on the steps taken to bring down the transformer failures is being submitted separately.

Comments of the Commission:

The DPN has not complied with the direction. The commission reiterates its directive and directs to the DPN to submit the details of transformer failures during the FY 2018-19 along with steps taken to bring down the same

Reply:

The report on the steps taken to bring down the transformer failures is being submitted separately.

Comments of the Commission:

The commission reiterates its directive and directs to the DPN to submit the details of transformer failures during the FY 2019-20 by 30.09.2020 along with steps taken to bring down the same.

Directives 11: Review petition

The Commission has to undertake review, true up of earlier orders. True-up activity cannot be done in absence of audited accounts. DPN is directed to get the Accounts & Fixed Asset Register updated and audited and submit the review/true-up petitions along with the audited accounts.

DPN is directed to submit review/true-up petitions along with the audited accounts.

Compliance Status:

It is submitted that the department has updated the Annual accounts upto FY 2013-14. The accounts for the FY 2014-15 is being compiled and the department shall be able to file the review petition for the FY 2014-15 along with the next filing.

Comments of the Commission:

The DPN has not understood the difference between “Review and True Up” which are separate functions. As per Regulation 21 of NERC (Terms and Conditions for determination of Tariff) Regulations 2010, the Commission shall consider variations between approvals and revised estimates/pre-actuals of sale of electricity, income and expenditure for the relevant year and permit necessary adjustment/ changes in case of such variations are for adequate and justifiable. Such an exercise shall be called “**Review**”.

21 (2) As per regulation after audited accounts of the year are made available, the Commission shall undertake a similar exercise as above, based on final actual figures as per the audited accounts, which shall be called “**True up**”.

Review petition may be filed based on revised estimates and after audited accounts, are available true-up petition for that year shall be filed. This may be followed from next ARR onwards.

would be required to compile the same. The DPN shall take effort to compile the same submit the same along with the next Tariff Petition. Hon'ble Commission may kindly allow the same .

Comments of the Commission:

The DPN has not complied with the direction. The commission reiterates its directive to compile the details of security deposits from consumers and submit the same along with the next Tariff Petition filing .

Directives 9: Revenue Realization

DPN is directed to make a comprehensive assessment of of total dues & do the aging analysis of the same. The dues with which are outstanding for more than 6 months/1 year are to identified and special drive is to be taken to recover the same. Further, the unrecoverable & doubtful dues are to be identified and reported separately.

DPN is directed to report the action taken in this regard before filing of the next Tariff Petition .

Reply:

It is submitted that DPN has not been able to do the assessment of dues along with aging analysis. The DPN shall take steps to comply with the directive. Hon'ble Commission may kindly allow time for the same.

Comments of the Commission:

The DPN has not complied with the direction. The commission reiterates its directive and directs to the DPN to report the action taken in this regard before filing of the next Tariff Petition.

Reply:

It is submitted that most of the dues are very old and it is very difficult to get the details along with aging. However, the DPN shall make efforts to compile the details of outstanding along with aging analysis and submit the same in the next financial year.

Reply:

It is submitted that DPN shall submit the review petition as directed from the current FY.

Comments of the Commission:

DPN is directed to file True-up for the FY 2015-16 & FY 2016-17 and Review for the FY 2017-18 along with the next petition. The audited accounts shall be filed along with the True-up petition.

Reply:

It is submitted that the Annual Accounts for the FY 2015-16 is being compiled and shall be ready by 30.11.2017. The true-up petition shall be submitted after the same is audited by AG.

Comments of the Commission:

DPN is directed to get the accounts updated and audited. The DPN must file the review & true-up petition based on the audited accounts along with the next Tariff petition positively.

Reply:

It is submitted that the Accounts for the FY 2015-16 & FY 2016-17 has been compiled. However, the same is yet to be audited by AG. The DPN shall file the True-up petition after completion of Audit. Hon'ble Commission may kindly allow the same.

Comments of the Commission:

DPN is directed to get the Accounts & Fixed Asset Register updated and audited.

Reply:

It is submitted that the accounts for the FY 2015-16, FY 2016-17 & FY 2017-18 is yet to be audited by AG. The True-up petition shall be submitted after completion of the audit.

Comments of the Commission:

DPN is directed to get the Accounts & Fixed Asset Register updated and audited.

Reply:

It is submitted that DPN has updated the Asset & Depreciation Register upto 31.03.2016. DPN shall initiate the exercise for yearly updating of Fixed Asset Register and submit the same along with the Tariff Petition .

Comments of the Commission:

DPN is directed to update the Fixed Asset Register and reconcile the same with CWIP. The Tariff Petition shall be filed on the basis of audited Annual Accounts & updated Fixed Asset Register.

Further, DPN is directed to submit the compliance report of regarding updation of Accounts & Fixed Asset Register by September, 2018 .

Reply:

It is submitted that the Fixed Asset Register for the FY 2016-17 & FY 2017-18 is under compilation and same shall be submitted along with the next Tariff Petition. The Annual Accounts for the FY 2015-16 & FY 2016-17 has been compiled. Copy of the same is attached.

Comments of the Commission:

DPN is directed to update the Fixed Asset Register and reconcile the same with CWIP. The next Tariff Petition shall be filed on the basis of audited Annual Accounts & updated Fixed Asset Register.

Reply:

It is submitted that the Fixed Asset Register for the FY 2015-16 & FY 2016-17 has been compiled and the same is being submitted separately. The reconciliation of the CWIP with the FAR shall be done and submitted along with the next Tariff petition. The Hon 'ble Commission may kindly allow the same.

Comments of the Commission:

DPN is directed to update the Fixed Asset Register and reconcile the same with CWIP. The next Tariff Petition shall be filed on the basis of audited Annual Accounts & updated Fixed Asset Register.

Directives 13: Specific Tariff to Public Lighting

Charges towards Public Lighting are being collected from other categories of consumers. Now, the Commission is of the view to fix a specific tariff to public lighting as in the case of other categories to be paid by the concerned local bodies being custodians of public lighting. As such the DPN is directed to provide meters to all public lighting connections and take inventory of the connected load and measure the monthly consumption of each public lighting connection and propose specific tariff to public lighting as is prevailing in other electricity utilities in the country from the next tariff filing invariably.

Reply:

It is submitted that the DPN is yet to complete the exercise of classification of street light points and their connected load. In view of the above it is requested that the Hon'ble Commission may kindly allow the recovery of street light charges in manner allowed in previous years pending compilation of the details as above.

Comments of the Commission:

DPN is directed to complete the exercise at earliest and furnish the details along with the next Tariff Petition.

Reply:

It is submitted that the Hon'ble Commission may kindly allow the street light be charged from other categories of consumers as been done in the previous years.

Comments of the Commission:

DPN is directed to complete the exercise at earliest and furnish the details along with the next Tariff Petition filing.

Directive 14: Details of Single Point Consumers

Number of Single Point Connections released (Urban & Rural separately) and actual consumption and amount billed during the previous year and estimated for current year and projected for ensuring year shall be filed along with next tariff filing. Further, point wise number of consumers existing as on the date should also be furnished.

Directives 12: Progress on Completion of Capital Works

As verified from the capital investment and capitalization, Rs. 163.92 Crore invested during FY 2012-13, bringing CWIP as on 31.03.2013 at Rs. 795.19 Crore and out of which only Rs. 40 Crore are capitalized, which is about 5% of total CWIP as on 31.03.2013. Execution/completion of distribution works shall be completed in the same year. When works are completed and the asset is taken for operation, related costs can be capitalized. Based on capitalization, depreciation can be claimed by DPN.

The DPN is directed to list out all the completed works giving scheme-wise, work wise dates of commencement and completion duly capitalizing the related expenditure. Progress on this may be reported by 30th June, 2015.

Compliance:

It is submitted that the department is in the process of compiling the Asset & Depreciation Register and the details as required in the above directive will be provided once the exercise is completed. Further, as submitted in reply to Directive-1 above, department shall submit the report in this regard by 30.09.2016.

Comments of the Commission:

The CWIP may be reconciled and the completed works be brought into GFA. Reconciliation report be submitted by 30.09.2016 positively.

Reply:

It is submitted that the DPN has compiled the asset and depreciation register and the same is being submitted. The reconciliation report is being compiled and the same shall be submitted at earliest.

Comments of the Commission:

DPN is directed to update the Asset & Depreciation Register and reconcile the same with CWIP. The updated Asset & Depreciation Register along with reconciliation shall be submitted along with the next petition.

Reply:

It is submitted that the sales from single point connections shall be submitted by 31.01.2018.

Comments of Commission:

DPN has not provided the details of single point consumers till date. It is directed to submit the same within 30.06.2018 positively.

Reply:

It is submitted that the sales from single point connections shall be submitted by 31.01.2019.

Comments of Commission:

DPN has not provided the details of single point consumers till date. It is directed to submit the same within 30.06.2019 positively.

Reply:

It is submitted that the details of single point consumers is being provided separately.

Comments of Commission:

DPN has not provided the details of single point consumers till date. It is directed to submit the same within 30.09.2020.

Directive 15: Physical verification of Consumer connections

Physical verification of all consumer connections be done to verify the number of no meter connections, defective meters, wrong classification of categories, unauthorized connections, unauthorized additional load, tempered seal of the meter etc.

For this purpose an action plan should be chalked out making each sub-division as a unit and deploying all staff in the sub-division for one day in a week to check all connections in a nominated section on that day. Thus, in a month, four sections will be covered.

To execute this operation, the staff should be divided into batches making Junior Engineer as team leader who will record consumer wise data of all connections checked. This will hardly take two to three months to complete 100% physical verification of connections.

A brief outcome of the operation may also be reported to the Commission along with action proposed on the reports.

Compliance:

It is submitted that the department has undertaken physical verification of the consumer connections, although all the consumers have not be covered. A brief report on the outcome will be submitted by 31.03.2016.

Comments of the Commission:

The report may be submitted by 31.03.2016 invariably.

Reply:

The report is being compiled and shall be submitted separately. The Hon'ble Commission may kindly allow the same.

Comments of the Commission:

DPN is directed to conduct physical verification of the consumer connections and submit report within 30.09.2017.

Reply:

It is submitted that the physical verification of all consumer connections has not been done. DPN shall conduct the exercise and submit report along with the next petition. Hon'ble Commission may kindly allow the same.

Comments of the Commission:

DPN shall complete the exercise by 30.06.2018 and report compliance to the Commission .

Reply:

It is submitted that DPN has not been able to do the physical verification of all consumer connections. Hon'ble Commission may allow more time for the same.

Comments of the Commission:

DPN shall complete the exercise by 30.09.2019 and report the compliance to the Commission.

Reply:

It is submitted that DPN has not been able to do the physical verification of all consumer connections. Hon'ble Commission may allow more time for the same.

Comments of the Commission:

DPN shall complete the exercise by 30.09.2020 and report the compliance to the Commission .

Directive 17: Assessment of arrears

DPN is directed to conduct an exercise of review of Arrears from sale of power. This is required to be done category wise and division wise. The ageing analysis of the arrears is also required to be done. DPN should also identify the bad debts and recoverable debts. The report on the progress of the exercise shall be submitted to the Commission by 30.09.2017.

Reply:

It is submitted that DPN has not been able to conduct the exercise of review of Arrears from sale of power. It is submitted that the Hon'ble Commission may kindly allow the same to be filed along with the next petition.

Comments of the Commission:

DPN is directed to conduct the exercise of review of Arrears from sale of power and report the status by 30.09.2018 to the Commission.

Reply:

It is submitted that the exercise of review of Arrears from sale of power is being done by the department, however, identification & reconciliation of arrears shall take more time. Hon'ble Commission may kindly allow the same to be submitted along with the next Tariff Petition .

Comments of the Commission:

DPN is directed to conduct the exercise of review of Arrears from sale of power and report the status with the next Tariff Petition to the Commission.

Reply:

It is submitted that the DPN has not been able to carry out the exercise of review arrears and identification & reconciliation of arrears. Hon'ble Commission may kindly give more time for the same.

Comments of the Commission:

DPN is directed to conduct the exercise of review of Arrears from sale of power and report the status with the next Tariff Petition filing .

Directive 18: Physical verification & assessment of stock

Material stock has a huge impact on the cost of the capital works. DPN is directed to take an annual physical verification exercise of the stock and compile a stock register. The stock register shall provide the details of movement of stock along with the value. DPN shall submit the progress report on the same along with the next petition .

Reply:

DPN shall initiate the exercise of Annual Physical verification of stock and submit the report. Hon'ble Commission may kindly time till 30.06.2018 for compliance of the Directive .

Comments of the Commission:

DPN is directed to submit the status by 30.06.2018 to the Commission.

Reply:

It is submitted that DPN shall initiate the exercise of Physical verification of stock from the FY 2019-20.

Comments of the Commission:

DPN is directed to submit the status by 30.09.2019 to the Commission.

Reply:

It is submitted that the DPN has not been able to conduct the physical verification of stock. DPN shall make efforts for conducting the physical verification and report the same to the Hon'ble Commission

Comments of the Commission:

DPN is directed to submit the status by 30.09.2020 to the Commission.

Directive 19: Consumer Awareness/ Sensitisation

The DPN is directed to carry out “Consumer Awareness / Sensitisation” campaigns so as to educate the consumers and the general public on the various initiatives and subsidies announcement by the government and manner of obtaining these benefits.

The DPN is also directed to create awareness and sensitise its employees on the need to be fully aware of various acts, rules & regulations, safety practices etc., DPN may consider imparting trainings, arrangement workshops etc. for its employees.

Reply:

It is submitted that DPN has taken steps to create awareness and sensitise its employees on the need to be fully aware of various acts, rules & regulations, safety practices etc as directed by the Hon’ble Commission.

Comments of the Commission:

DPN is directed to submit the status by 30.09.2019 to the Commission.

Reply:

It is submitted that the DPN is taking efforts in this regard through out the year by imparting training, workshops etc.

Comments of the Commission:

DPN is directed to submit the status in details by 30.09.2020 to the Commission.

Directive 20: Renewable Energy Projects

As the Government of India is keen on building up its Renewable Energy capacity, the State could also look at the option of taking up Renewable Energy projects to increase its overall generation capacity.

Reply:

It is submitted that DPN is exploring possibilities of building up its Renewable Energy capacity.

Comments of the Commission:

DPN is directed to submit the status by 30.09.2019 to the Commission.

Reply:

It is submitted that status of Renewable Energy development is being submitted separately.

Comments of the Commission:

DPN is directed to submit the status by 30.09.2020 to the Commission.

10. WHEELING CHARGES

10.1 Wheeling Charges

The net ARR has been approved in chapter 6 is ₹ 690.42 Crores, ₹ 737.44 Crores, ₹ 788.61 Crores, ₹ 844.29 Crores and ₹ 902.15 Crores for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively. The ARR approved is segregated into wire business and retail supply business in accordance with the matrix prescribed in Regulation 72. The allocation matrix is provided in table below:

Table 10.1: Allocation Matrix

Sl. No.	Particulars	(In %)	
		Wire Business	Retail Supply Business
1	Power Purchase Expenses	0	100
2	Standby 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

10.2 Segregation of Cost

The total fixed cost excluding power purchase/generation costs and transmission charges are segregated into wire business and retail supply business as per the above matrix as detailed in table below:

Table 10.2: Segregation of Wire and Retail Supply Costs for FY 2020-21

(₹ in Crores)

Sl. No.	Particulars	Approved Total Cost	Wire Business	Retail Supply Business
1	Cost of Power Purchase	324.21	-	324.21
2	Cost of Generation	17.62	-	17.62
3	Employee Cost	127.42	76.45	50.97
4	Administration & General Expenses	3.67	1.84	1.84
5	Repair & Maintenance Expenses	33.58	30.22	3.36
6	Transmission charges	42.90	-	42.90
7	Depreciation	143.43	129.09	14.34
8	Interest on Working Capital	10.83	1.08	9.75
9	Total Revenue Requirement	703.66	238.68	464.98
10	Less: Non-Tariff Income	13.24	1.32	11.92
11	Net Revenue Requirement (9- 10)	690.42	237.35	453.07

Table 10.3: Segregation of Wire and Retail Supply Costs for FY 2021-22

(₹ in Crores)

Sl. No.	Particulars	Approved Total Cost	Wire Business	Retail Supply Business
1	Cost of Power Purchase	355.60	-	355.60
2	Cost of Generation	18.50	-	18.50
3	Employee Cost	134.71	80.83	53.88
4	Administration & General Expenses	3.88	1.94	1.94
5	Repair & Maintenance Expenses	35.50	31.95	3.55
6	Transmission charges	45.04	-	45.04
7	Depreciation	146.74	132.07	14.67
8	Interest on Working Capital	11.39	1.14	10.25
9	Total Revenue Requirement	751.35	247.92	503.43
10	Less: Non-Tariff Income	13.91	1.39	12.52
11	Net Revenue Requirement (9- 10)	737.44	246.53	490.92

Table 10.4: Segregation of Wire and Retail Supply Costs for FY 2022-23

(₹ in Crores)

Sl. No.	Particulars	Approved Total Cost	Wire Business	Retail Supply Business
1	Cost of Power Purchase	390.41	-	390.41
2	Cost of Generation	19.43	-	19.43
3	Employee Cost	142.42	85.45	56.97
4	Administration & General Expenses	4.10	2.05	2.05
5	Repair & Maintenance Expenses	37.53	33.77	3.75
6	Transmission charges	47.30	-	47.30
7	Depreciation	150.05	135.05	15.01
8	Interest on Working Capital	11.97	1.20	10.77
9	Total Revenue Requirement	803.21	257.52	545.69
10	Less: Non-Tariff Income	14.60	1.46	13.14
11	Net Revenue Requirement (9- 10)	788.61	256.06	532.55

Table 10.5: Segregation of Wire and Retail Supply Costs for FY 2023-24

(₹ in Crores)

Sl. No.	Particulars	Approved Total Cost	Wire Business	Retail Supply Business
1	Cost of Power Purchase	429.06	-	429.06
2	Cost of Generation	20.40	-	20.40
3	Employee Cost	150.56	90.34	60.22
4	Administration & General Expenses	4.33	2.17	2.17
5	Repair & Maintenance Expenses	39.67	35.71	3.97
6	Transmission charges	49.66	-	49.66
7	Depreciation	153.36	138.02	15.34
8	Interest on Working Capital	12.58	1.26	11.32
9	Total Revenue Requirement	859.62	267.49	592.13
10	Less: Non-Tariff Income	15.33	1.53	13.80
11	Net Revenue Requirement (9- 10)	844.29	265.96	578.34

Table 10.6: Segregation of Wire and Retail Supply Costs for FY 2024-25

(₹ in Crores)

Sl. No.	Particulars	Approved Total Cost	Wire Business	Retail Supply Business
1	Cost of Power Purchase	469.76	-	469.76
2	Cost of Generation	21.42	-	21.42
3	Employee Cost	159.18	95.51	63.67
4	Administration & General Expenses	4.58	2.29	2.29
5	Repair & Maintenance Expenses	41.94	37.75	4.19
6	Transmission charges	52.14	-	52.14
7	Depreciation	156.00	140.40	15.60
8	Interest on Working Capital	13.23	1.32	11.90
9	Total Revenue Requirement	918.25	277.27	640.98
10	Less: Non-Tariff Income	16.10	1.61	14.49
11	Net Revenue Requirement (9- 10)	902.15	275.66	626.49

10.3 Wheeling Tariff

The wheeling charges have been computed on the basis of approved costs of DPN for wire business and the total energy expected to be wheeled through its network. In the absence of segregated data on costs of operation of 33kV and 11kV networks and sales, wheeling charges are not segregated voltage wise. Combined wheeling charges determined are given in table below:

Table 10.7: Wheeling Tariff approved by the Commission

Sl. No.	Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
1	ARR for wheeling function approved by the Commission (₹ in Crores)	237.35	246.53	256.06	265.96	275.66
2	Total sales within State - approved (In MUs)	677.22	722.73	771.52	823.86	880.01
3	Wheeling Tariff (₹/kWh)	3.50	3.41	3.32	3.23	3.13

The Commission approves wheeling Tariff at ₹ 3.50/kWh, ₹ 3.41/kWh, ₹ 3.32/kWh, ₹ 3.23/kWh and ₹ 3.13/kWh for the FY 2020-21, FY 2021-22, FY 2022-23, FY 2023-24 and FY 2024-25 respectively.

11. FUEL AND POWER PURCHASE COST ADJUSTMENT

11.1 Background

Section 62 sub-section 4 of the Electricity Act, 2003 provides that no tariff or part of any tariff may ordinarily be amended, more frequently than once in every financial year, except in respect of any changes expressly permitted under the terms of any fuel surcharge formula as may be specified. This provision of the Act requires the Commission to specify the formula for fuel surcharge.

Accordingly, the Commission has specified the formula for working out the Fuel and Power Purchase Cost Adjustment (FPPCA) charges and other terms and conditions of FPPCA allowed the distribution licensee to recover the FPPCA charges from the consumers vide Regulation 98 (13) of NERC (Terms and Conditions for determination of Tariff) Regulations, 2010.

Accordingly, the amount of Fuel and Power Purchase Cost Adjustment (FPPCA) charges shall be computed as under:

$$\text{FPPCA (Ps./kWh)} = \frac{Q_c(RC_2 - RC_1) + Q_0(RO_2 - RO_1) + Q_{pp}(R_{pp2} - R_{pp1}) + V_z + A}{(Q_{Pg1} + Q_{pp1} + Q_{pp2}) \times \left[1 - \frac{L}{100} \right]} \times 100$$

Where,

Q_c = Quantity of coal consumed during the adjustment period in Metric Tons (MT).

= $(SHR \times Q_{pg}) (1 + TSL) \times 1000 / GCV$, or actual whichever is less.

R_{c1} = Weighted average base rate of coal supplied ex-power station coal yard as approved by the Commission for the adjustment period in ₹/MT

R_{c2} = Weighted average base rate of coal supplied ex-power station coal yard for the adjustment period in ₹/MT

Q_o	=	Actual Quantity of oil (in KL) consumed during the adjustment period or normative oil consumption as per Tariff order whichever is less.
R_{o1}	=	Weighted average base rate of oil ex-power station (₹/KL) approved by the Commission for the adjustment period.
R_{o2}	=	Weighted average actual rate of oil ex-power station supplied (₹/KL) during the adjustment period.
Q_{pp}	=	Total power purchased from different sources (kWh) = $Q_{pp2} + Q_{pp3}$
Q_{pp1}	=	$Q_{pp3} \left[1 - \frac{TL}{100} \right]$ in kWh
TL	=	Transmission loss (CTU) (in percentage terms).
Q_{pp2}	=	Power Purchase from sources with delivery point within the state transmission or distribution system (in kWh)
Q_{pp3}	=	Power Purchase from sources on which CTU transmission loss is applicable (in kWh)
R_{pp1}	=	Average rate of Power Purchase as approved by the Commission (₹/kWh)
R_{pp2}	=	Average rate of Power Purchase as approved by the Commission (₹/kWh)
Q_{pg}	=	Own power generation (kWh)
Q_{pg1}	=	Own Power generation (kWh) at generator terminal – approved auxiliary consumption
L	=	Percentage T&D loss as approved by the Commission or actual, whichever is lower.
SHR	=	Station Heat Rate as approved by the Commission (Kcal / kWh)

- TSL = Percentage Coal Transit and Stacking Loss as approved by the Commission
- GCV = Weighted average gross calorific value of coal as fired basis during the adjustment period (Kcal / Kg)
- V_z = Amount of variable charges on account of change of cost of unknown factors like water charges, taxes or any other unpredictable and unknown factors not envisaged at the time of Tariff fixation subject to prior approval of the Commission (₹)
- A = Adjustment, if any, to be made in the current period to account for any excess / shortfall in recovery of fuel of Power Purchase cost in the past adjustment period, subject to the approval of the Commission (₹)

If there are more than one power stations owned by the Licensee Qc, Rc1, Rc2, Qo, Ro1, Ro2, Qpg and Qpg1 will be computed separately for each power station and sum of the increase/decrease of cost of all power stations shall be taken into consideration.

The Generating Company can levy FPPCA charges with the prior approval of the Commission.

Terms and conditions for application of the FPPCA formula

- 1) The basic nature of FPPCA is 'adjustment' i.e. passing on the increase or decrease in the fuel costs and power purchase cost, as the case may be, compared to the approved fuel costs and power purchase costs in this Tariff Order.
- 2) The operational parameters / norms fixed by the Commission in the Tariff Regulations / Tariff Order shall be the basis of calculating FPPCA charges.
- 3) The FPPCA will be recovered every month in the form of an incremental energy charge (₹/kwh) in proportion to the energy consumption and shall not exceed 10% of the approved avg. cost of supply in the Tariff order and balance amount, if any, in the FPPCA over and above this ceiling shall be carried forward to be billed in subsequent month.

- 4) Incremental cost of power purchase due to deviation in respect of generation mix or power purchase at higher rate shall be allowed only if it is justified to the satisfaction of the Commission.
- 5) Any cost increase by the licensee by way of penalty, interest due to delayed payments, etc. and due to operational inefficiencies shall not be allowed.
- 6) FPPCA charges shall be levied on all categories of consumers.
- 7) Distribution licensee shall file detailed computation of actual fuel cost in ₹/kWh for each month for each of power stations of the state generators as well as cost of power purchase (Fixed and Variable) from each source/station and a separate set of calculations with reference to permitted level of these costs.
- 8) The data in support of the FPPCA claims shall be duly authenticated by an officer of the licensee, not below the rank of Chief Engineer on an affidavit supported with the certified copy of energy bills of power purchase, transmission and RLDC charges, bill for coal purchase and its transportation cost, oil purchase bill and the quantity of coal and oil consumed during the month.
- 9) Levy of FPPCA charge will be allowed only when it is ten (10) paise or more per unit. If it is less than 10 (ten) paise/unit, the same may be carried forward for adjustment in the next month.
- 10) The incremental cost per kWh due to this FPPCA arrived for a month shall be recovered in the energy bill of the month subsequent to the order of the Commission approving FPPCA with full details of rate and unit(s) on which FPPCA charges have been billed. The Generating Company and the Distribution Companies shall provide along with the proposal of FPPCA (as applicable to them) for a month, a compliance report of the previous order of the commission in respect of FPPCA.

ANNEXURE - I

**Minutes of the 14th Meeting of the State Advisory Committee (SAC)
Held on 19th March, 2020**

Venue : Hotel Japfu, Kohima, Nagaland.
Date : Thursday, the 19th March, 2020

The meeting was chaired by Er. Imlikumzuk Ao, Chairman, Nagaland Electricity Regulatory Commission (NERC). He welcomed the SAC Members, representatives from Department of Power (DPN) and New & Renewable Energy (N&RE) and expressed his wish for a good interaction and a fruitful discussion with definite solutions.

AGENDA NO: (i). Filing of Business plan & ARR for 5 years MYT 2nd control period for FY 2020-21 to 2024-25 & Annual Performance Review (APR) for FY 2019-20: and Tariff proposal for FY 2020-21

The Commission highlighted that the DPN filed petition for approval of Business plan & Projected ARR for 5 years (2nd control period) for FY 2020-21 to 2024-25, APR for FY 2019-20 and Tariff proposal for FY 2020-21. It was also informed that the DPN, along with the said tariff Petition was supposed to submit the True Up of actual audited expenses (ARR) for FY 2018-19 as per MYT Regulations, 2016 but the same was not submitted, instead claimed ARR of Rs. 861.35 Crore as actual expenses.

The Committee Members deliberated in detail on the issue. Some Members were of the opinion that the Commission may not approve the revised proposed Tariff for FY 2020-21 without the True Up for FY 2018-19.

With regard to tariff proposal for FY 2020-21, DPN has proposed ARR of Rs. 1,102.56 Crore with a revenue gap of Rs. 690.53 Crore. DPN has also proposed an overall increase in tariff by 4.57%.

With regard to Annual Performance Review (APR) for FY 2019-20, DPN has estimated a revised ARR of Rs. 953.72 Crore with a Revenue gap of Rs. 589.35 Crore against the approved ARR of Rs. 618.40 with Revenue gap of Rs. 208.32 Crore.

After thorough deliberation on the issue, the Committee Members advised that the Commission may approve the present tariff petition as deemed fit. The Committee Members further advised the Commission not to entertain any revision/hike of tariff from the next financial year i.e. 2021-22 unless DPN submit True-Up for the previous year as per MYT Regulations, 2016.

AGENDA NO: (ii). Representation from AWUM, Mokokchung Town and Shri. R. Kevichusa, Dimapur.

The Commission highlighted that, in response to the DPN invitation published on 18th & 19th December, 2019 in local dailies, AWUM submitted representation to the Commission to fix the tariff for Single Point Metering (Urban) at ₹ 5/kWh at par with prepaid domestic tariff. Shri. R. Kevichusa Dimapur also submitted a representation to the Commission on certain existing issues such as power theft, high tariff, random connection of electricity by industrial consumers and irregularities of electricity bill in the state.

The Commission informed that the two representations were also deliberated in the Public Hearing on 4th February, 2020.

The Members present deliberated on the above issues by sharing opinions & suggestions. The Members were of the opinion that the consumers of 18 wards under AWUM, Mokokchung are the honest paying consumers who are extending their full cooperation in revenue collection and supporting the Department by controlling power theft under its jurisdiction.

The Members after thorough deliberation, advised the Commission to take into consideration their representation and pass appropriate order(s) as deemed fit & proper while finalising the said Tariff.

The Members were also of the opinion that the issues raised by Shri. R. Kevichusa in his representation dated 11-01-2020 is the prevailing irregularities in the Department and advised the DPN officials present to address those issues at the earliest possible time.

AGENDA NO: (iii). Prevalence of High Losses and Low Revenue Collection:

The Commission highlighted that, the Power Department despite its best efforts, is still fighting a losing battle in regards to revenue collection. The DPN has been taking various initiatives such as Communitisation, Anti Power Theft Mobile Squad (APTMS), online payment, trust reading etc. The electricity demand has also been increasing in the State due to higher living standards of the Consumers and is expected to rise further in the years to come. The revenue losses is also expected to increase at a much higher rate along with increase in demand which may adversely affect the power supply unless Technical & Commercial losses are checked & controlled.

The DPN officials apprised the members present that, in spite of its best efforts, the losses could not be controlled till date. Also informed that the Technical Losses are all due to non-replacement of old Technical parameters in the system and cannot be improved until the Central/State Government provides sufficient fund to replace/upgrade the present technical parameters which is again linked to the performance of the DPN in Revenue collection.

The Members, after thorough deliberation were of the opinion that in spite of enhancing the tariff each financial year, the DPN is unable to collect the revenue as fixed by the Commission and even to recover its own power purchase cost which adversely affect the power supply in the State. The Members advised the DPN to rigorously implement and monitor the prevailing technical & commercial losses in the Department.

AGENDA NO: (iv). Installation of Grid Connected Rooftop Solar (RTS) System in the State:

The Commission highlighted that, Department is yet to comply with Solar Renewable Purchased Obligation (RPO) and informed that the Commission has already issued the RTS Regulations, 2019 but the DPN is yet to initiate for development of RTS in the state and also have not framed the Rules & Procedure for connectivity with the distribution grid.

The Director, N&RE Department, Nagaland present in the Meeting highlighted about the Government of India initiatives for achieving 175 GW by 2022 through Renewable Energy (RE) Source, i.e. Solar is 100 GW & Non-Solar is 75 GW. Under the said initiative, every state has to either generate or purchase Renewable Energy Certificate (REC) to achieve the target of RPO set by the Ministry.

The Members deliberated on the issue and advised the DPN officials present in the meeting to expedite for early finalisation of the said Rules & Procedures for availing grid connected RTS system by the interested consumers.

Concluding Remarks:

The Chairperson thanked the SAC Members, the Officers of DPN and N&RE for making the meeting a successful & fruitful and requested all to extend their support & cooperation in the future too.

Sd/-

W. Y. YANTHAN

Member Secretary, SAC
Nagaland Electricity Regulatory
Commission (NERC), Kohima.

**LIST OF MEMBERS PRESENT IN THE 14th STATE ADVISORY COMMITTEE
HELD ON 19th MARCH, 2020 AT HOTEL JAPFU, KOHIMA**

Sl. No.	Name	Designation
1.	Er. Imlikumzuk Ao	Chairperson
2.	Mr. W.Y. Yanthan	Member Secretary
3.	Mr. T. Meren Paul	SAC Member
4.	Capt. Hekiye Sema	SAC Member
5.	Mr. Jonas Yanthan	SAC Member
6.	Mr. C.R. Lotha, NCS (Retd)	SAC Member
7.	Mr. Bishnu Bhattacharjee	SAC Member
8.	Mr. Kekhriengulie Theunuo	SAC Member
9.	Rev/Dr. Chingmak Kejong	SAC Member
10.	Mr. Shiwoto Wotsa	SAC Member
11.	Mr. R. Ayim Longkumer	SAC Member
12.	Mr. A. Bendang Jamir	SAC Member
13.	Mr. Joshua Sheqi	SAC Member
14.	Er. Indianoba Tally	Chief Engineer (D&R), DPN
15.	Er. Penrithung Yanthan	S.E (Rev), DPN
16.	Er. Wabangmeren Jamir	E.E (Rev), DPN
17.	Er. Temjensangba	Asst. CE, DPN
18.	Er. Alemla Thonger	Jr. Engineer, DPN
19.	Er. Kavito Chishi	Director, NRE
20.	Er. Kimaba	Addl. Director, NRE
21.	Er. James Khala	Joint Director, NRE
22.	Er. Lhoubeizo Kesiye	Dy. Director, NRE
23.	Mr. Limawapang Lkr	Legal Consultant, NERC
24.	Er. Hekavi N Ayemi	Asst. Engineer (Tariff), NERC
25.	Mr. Shivito Wotsa	Accounts Officer, NERC

ANNEXURE - II**REVENUE FROM APPROVED/REVISED TARIFF FOR THE FY 2020-21**

Sl. No.	Category	No. of Consumers	Energy Sales (In MUs)	Energy Charges (₹ / kWh)	Revenue (₹ in Crores)	Average Revenue (₹ / kWh)
1	Category 'A' Domestic					
a)	Up to 30 kwh		66.04	4.70	31.04	
b)	31 to 100 kwh		114.54	5.45	62.42	
c)	101-250 kwh		21.10	6.00	12.66	
d)	Above 250 kwh		31.38	7.00	21.96	
	Total	176,925	233.06		128.09	5.50
2	Category 'B' Industrial					
a)	Up to 500 kwh		39.31	6.00	23.59	
b)	501 to 5000 kwh		15.22	6.50	9.89	
c)	Above 5000 kwh		8.15	7.30	5.95	
	Total	6,182	62.68		39.43	6.29
3	Category 'C' Bulk	2,677	100.71	6.60	66.47	6.60
4	Category 'D' Commercial					
a)	Up to 60 kwh		89.06	7.10	63.23	
b)	61 to 240 kwh		5.14	8.20	4.21	
c)	Above 240 kwh		4.39	8.90	3.90	
	Total	23,665	98.58		71.35	7.24
5	Category 'E' PWW	38	11.50	7.00	8.05	7.00
6	Category 'F' Public Light	630	14.01		4.38	3.13
7	Category 'G' Agriculture	1	0.02	3.10	0.01	3.10
8	Category 'H' Temporary Connection					
9	Category 'I' Inter-state					
10	Kuti Jyoti (Point)					
11	Single Point Metered Rural	122,704	136.41	5.00	68.20	5.00
12	Single Point Metered Urban	10,917	20.26	5.20	10.53	5.20
13	Outside State Sale					
14	Grand Total	343,738	677.22		396.50	5.85
Calculation of Revenue from Public Light						
a)	Domestic	300100 X 10 X 12			3.73	
b)	Commercial	24110 X 15 X 12			0.43	
c)	Industrial	5808 X 20 X 12			0.15	
d)	Bulk Supply	1919 X 25 X 12			0.08	
	Total				4.38	

APPENDIX**APPROVED TARIFF SCHEDULE FOR THE FY 2020-21**

Sl. No.	Category	Rs./kWh
A.	1 CATEGORY 'A' DOMESTIC	
	(a) up to 30 kwh	4.70
	(b) 31 to 100 kwh	5.45
	(c) 101 to 250 kwh	6.00
	(d) Above 250 kwh	7.00
	Monthly minimum charges (Rural)	Rs. 150.00 pm/kw of contract demand or part thereof
	Monthly minimum charges (Urban)	Rs. 200.00 pm/kw of contract demand or part thereof
	2 CATEGORY 'B' INDUSTRIAL	
	(a) up to 500 kwh	6.00
	(b) 501 to 5000 kwh	6.50
	(c) Above 5000 kwh	7.30
	Monthly minimum charges	Rs.200.00 pm/kva of contract demand or part thereof
	3 CATEGORY 'C' BULK	6.60
	Monthly minimum charges	Rs.200.00 pm/kva of contract demand or part thereof
	4 CATEGORY 'D' COMMERCIAL	
	(a) up to 60 kwh	7.10
	(b) 61 to 240 kwh	8.20
	(c) Above 240 kwh	8.90
	Monthly minimum charges	Rs.200.00 pm/kw of contract demand or part thereof
	5 CATEGORY 'E' P.W.W.	7.00
	Monthly minimum charges	Rs.100.00 pm/kva or part thereof
	6 CATEGORY 'F' Public Light	To be recovered from consumers*
	7 CATEGORY 'G' INTER-STATE	6.10
	8 CATEGORY 'H' AGRICULTURE	3.10
	Monthly minimum charges	Rs.75.00 pm/HP or part thereof
	9 CATEGORY 'I' TEMPORARY CONNECTION	DLF – 11.00 Others – 14.00
	10 Kutir Jyoti(point)	Same as DLF
	11 SINGLE POINT METERED RURAL	5.00
	12 SINGLE POINT METERED URBAN	5.20

* Charges for public lighting have to be recovered from the Consumes 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. TARIFF FOR PREPAID METERED CONSUMERS			Rs./kWh
	1	Category 'A' Domestic – All Units	5.15
	2	Category 'B' Industrial – All Units	6.00
	3	Category 'C' Bulk – All Units	6.40
	4	Category 'D' Commercial – All Units	7.50
	5	Category 'H' Agriculture – All Units	3.10
	<input type="checkbox"/> Meter Rent: Same as Postpaid		
C. OTHER CHARGES:			
	(a)	Disconnection Charges	Rs.
		i. Single phase L.T.	150.00/connection
		ii. Three phase L.T.	250.00/ connection
		iii. H.T. consumers (11 KV above)	1500.00/ connection
	(b)	Reconnection Charges	
		i. Single phase L.T.	150.00/ connection
		ii. Three phase L.T.	250.00/ connection
		iii. H.T. consumers (11 KV above)	1500.00/ connection
D. 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
E. METER TESTING CHARGES			Rs. Per meter per test
	i.	Single phase L.T.	100.00
	ii.	Three phase L.T.	300.00
	iii.	H.T. consumers (11 KV above)	1000.00
F. SECURITY DEPOSIT			Rs. Per connection
	i.	Single phase L.T.	250.00
	ii.	Three phase L.T.	750.00
	iii.	H.T. consumers (11 KV above)	3000.00
G. SURCHARGES (DELAYED PAYMENT)			Rs. 0.10/kwh pm or part thereof
H. BILLING PERIODICITY			Monthly
I. CHARGES OF POLES USAGE FOR ADVERTISEMENT			Rs.
	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./month
		40. Category I-Commercial area (Max size 3'X2')	100.00
		b. Category II – Residential area (Max size 3'X2')	60.00
		c. Category III-National Highway (Max size 3'X2') (outside the city/town limit)	40.00

Summary

1. Energy Balance approved:
 - a) Total Energy available from Eastern Region (ER), North-Eastern Region (NER), owned Generation (LHEP) and free Power from DHEP: **901.95 MU**.
 - b) Approved T&D losses in the system from source to the point of consumer is **224.73 MU** (ER-2.26%, NER-2.66%, Intra state-3% and distribution-20.75%).
 - c) Total Energy available for sale to End Consumers of 3,43,738 (approx): **677.22 MU**
2. Revenue from revised average tariff of ₹ 5.85/kwh (after subsidised): ₹ **396.50 Crores**.
3. Power Purchase cost approved (including Trans & SLDC charges): ₹ **367.11 Crores**

By Order of the Commission.

Sd/-
(**W. Y. YANTHAN**)
Secretary,
NERC, Kohima



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