

Sr. No.	Particulars	NBPDC	SBPDCL
15	Total Revenue Requirement	7938.35	9,044.06
16	Less: Non-tariff income	183.31	340.68
17	Aggregate Revenue Requirement	7755.04	8,703.37
18	Treatment of Gap of FY 2018-19	30.95	112.49
19	Revenue from Sale of Power	7569.20	9199.87
20	Total gap/(Surplus) for FY 2020-21	216.79	(384.01)

- 5.21.5. The Commission considers the net revenue surplus of Rs. 1,908.51 Crore for Discoms (revenue Gap of Rs.410.31 Crore for NBPDC and revenue Gap of Rs.1498.20 Crore for SBPDCL) in review for FY 2020-21 (RE) subject to final truing up as and when the audited annual accounts for FY 2020-21 are submitted by the Discoms.
- 5.21.6. According to Regulation 14 (f) of BERC (Multi Year Distribution Tariff) Regulations, 2018 the estimated revenue Gap/(Surplus) as a result of Annual Performance Review (APR) shall not be passed in the ARR of ensuing year i.e. FY 2021-22.

6. Aggregate Revenue Requirement for FY 2021-22

6.1. Background

- 6.1.1. The Commission had determined the Aggregate Revenue Requirement (ARR) for the control period FY 2019-20 to FY 2021-22 for the Discoms viz., SBPDCL & NBPDC in the MYT Order dated 25 February, 2019. Discoms have now submitted the Petitions for approval of revised Aggregate Revenue Requirement and determination of Retail Supply Tariff for FY 2021-22.
- 6.1.2. The Commission has undertaken determination of ARR for FY 2021-22 on the basis of audited annual accounts for FY 2019-20, revised estimates for FY 2020-21 and projections submitted by the Petitioners for FY 2021-22 as per the provisions of BERC (Multi-Year Distribution Tariff) Regulations, 2018. The component-wise scrutiny of Petitioners' submissions and the Commission's approvals are detailed in the subsequent paragraphs of this section

6.2. Number of Consumers, Connected Load and Sales for FY 2021-22

NBPDC & SBPDCL's Submission:

- 6.2.1. Petitioners have submitted that the projection of number of consumers is based on the UDAY and the Saubhagya Schemes in line with the large scale initiatives being taken by Central Government and the State Government with an aim of overall development of the power sector in the state. The objective of the above-mentioned initiatives is to make power available to all households, industry, commercial businesses, public needs, any other electricity consuming entity and adequate power to agriculture farm holdings.
- 6.2.2. Petitioners submitted that segregation of the agricultural feeders will have a positive effect on the overall system stability and will improve the hours of power supply resulting in an increase in the units consumed. Hence an above normal CAGR is assumed in the agricultural category.
- 6.2.3. Petitioners submitted that the initiatives taken by the DISCOMs in providing connections under the Har Ghar Nal is already reflecting in the sales of the Petitioner and is further expected to increase the energy sales. The initiatives of Discom are expected to mainly impact the consumers who would fall under the IAS-I and Public Water Works categories, since a lot of emphasis is on connecting agricultural consumers and the growth rate projected under these categories is above the normal CAGR growth as large number of new connections to be released in the ensuing years.
- 6.2.4. However, with release of huge number of connections to the rural households and left over urban households in recent years under various State and Central Govt. schemes the scope of adding new consumers is getting minimized. Therefore, less number of consumers are expected to be added over next year in comparison to the previous years. Taking the same into account, the growth in number of consumers for various categories

have been considered at a lower rate as compared to previous years.

- 6.2.5. Segregation of the agricultural feeders will have a positive effect on the overall system stability and will improve the hours of power supply resulting in an increase in the units consumed. Hence an above normal CAGR is assumed in the agricultural category.
- 6.2.6. The Discoms have submitted that general approach followed for projection of all categories, as given below:
- i. Successful implementation of the Saubhagya scheme ensured that all the willing households are connected. Due to the rise in consumerism among consumers in the country, there will be a rise in the consumption of electricity in the control period. Gradually the customers currently segregated under the Kutir Jyoti category move on to higher categories.
 - ii. For projecting the connected load, an average connected load per consumer has been taken as per the actual data of the past few years. This has been then multiplied by projected number of consumers to arrive at the connected Load.
 - iii. The energy sale has been projected by considering the average consumption per consumer per month and then multiplying the same to the projected number of consumers.
 - iv. The number of years taken for estimating the CAGR however varies since the trend in certain categories is impacted by multiple other factors and taking a uniform period for calculating the CAGR skews the outcome.
 - v. In addition to the CAGR, it has also been ensured that other factors impacting demand, such as growth in the no. of consumers (due to schemes including Chief Minister scheme and Saubhagya scheme), enhanced power procurement, strengthening of distribution network for enhancing quality of supply, energy efficiency and DSM measures etc., have been adequately incorporated to reflect a realistic demand scenario.
- 6.2.7. Accordingly, the Petitioners have projected the category wise number of consumers, connected load and energy sales for FY 2021-22 as shown in the Tables below:

Table 216: Category-wise number of consumers, sales and connected load projected by SBPDCL for FY 2021-22

Category	Number of Consumer	Connected Load (KW)	Sales (MUs)
Domestic	55,56,377	70,74,502	8,198.34
Kutir Jyoti	16,06,159	2,21,889	1,280.61
Domestic Rural (DS-I)	25,57,569	27,68,101	3,479.31
Domestic Urban (DS II)	13,92,465	40,84,197	3,438.34
DS III	183	315	0.08
Non-Domestic Service	4,89,623	14,68,025	1,333.27

Category	Number of Consumer	Connected Load (KW)	Sales (MUs)
Non-Domestic (NDS I)	1,23,793	1,81,034	337.96
Non-Domestic (NDS II)	3,65,830	12,86,991	995.31
Contract Demand <0.5 kW	8,858	4,215	5.88
Contract Demand >0.5 kW	3,56,972	12,82,776	989.42
Street Light Services	1,556	20,874	70.19
Streetlight I	1,023	8,486	18.54
Streetlight II	534	12,389	51.65
Irrigation & Allied Services	2,57,309	6,99,477	851.78
IAS I	2,51,495	5,94,575	718.06
IAS II	5,814	1,04,902	133.72
Public Service Connections	18,258	93,116	174.36
Public Water Works	2,807	36,487	91.77
Har Ghar Nal	15,451	56,629	82.59
Low Tension Industrial Services	60,537	6,75,798	494.86
LTIS I (0-19 kW)	56,529	4,83,404	373.02
LTIS II (>19 kW - 74 kW)	4,008	1,92,394	121.84
High Tension	1,931	8,10,523	2,305.27
HTS I - 11 kV	1,775	3,77,116	721.24
HTS II - 33 kV	137	2,62,745	511.53
HTS III -132 kV	5	33,753	236.51
HTS IV - 220 kV	-	-	-
HTS IV - 33/11 Kv	14	1,36,909	836.00
Railway Traction Services	-	-	-
Total	63,85,590.98	1,08,42,315.81	13,428.07

Table 217: Category-wise number of consumers, sales and connected load projected by NBPDCCL for FY 2021-22

Category	Number of Consumer	Connected Load (KW)	Sales (MUs)
Domestic	1,03,07,751	74,76,739	8,540.00
Kutir Jyoti	42,72,276	6,57,592	2,755.03
Domestic Rural (DS-I)	47,21,954	51,36,017	3,945.78
Domestic Urban (DS II)	13,13,453	16,83,000	1,839.15
DS III	69	130	0.04
Non-Domestic Service	6,37,793	12,58,493	1,381.94
Non-Domestic (NDS I)	2,58,886	2,93,323	209.36
Non-Domestic (NDS II)	3,78,908	9,65,170	1,172.58
Contract Demand <0.5 kW	1,413	959	2.30
Contract Demand >0.5 kW	3,77,494	9,64,211	1,170.29
Street Light Services	1,203	20,955	38.99

Category	Number of Consumer	Connected Load (KW)	Sales (MUs)
Streetlight I	463	4,574	9.08
Streetlight II	739	16,381	29.91
Irrigation & Allied Services	1,14,408	3,63,288	188.75
IAS I	1,07,566	2,94,775	132.64
IAS II	6,841	68,513	56.11
Public Service Connections	28,574	91,353	117.75
Public Water Works	1,627	23,989	23.51
Har Ghar Nal	26,947	67,364	94.24
Low Tension Industrial Services	55,595	5,73,912	364.41
LTIS I (0-19 kW)	54,285	5,09,299	311.87
LTIS II (>19 kW - 74 kW)	1,309	64,613	52.54
High Tension	1,144	3,60,797	644.72
HTS I - 11 kV	1,093	2,31,091	416.00
HTS II - 33 kV	44	71,321	118.23
HTS III -132 kV	3	45,985	59.77
HTS IV - 220 kV	-	-	-
HTS IV - 33/11 Kv	4	12,401	50.72
Railway Traction Services	3	24,350	116.41
Sub – Total			
Nepal	1	-	151.61
Total	1,11,46,472	1,01,69,886	11,544.57

Commission's Analysis

Analysis of Category-wise number of consumers, energy sales and connected load

- 6.2.8. The Commission notes that it has been constantly directing the Discoms to complete 100% metering of consumers so that un-metered categories can be removed. The Commission in previous Tariff Order out of the four (4) un-metered categories – Kutir Jyoti (KJ), Domestic Rural (DS-I), Irrigation and Agriculture un-metered services (IAS-I) and Street Lights un-metered services (SS), had removed un-metered sub-category in Kutir Jyoti (KJ) and Domestic (Rural) (DS-I) categories. Further, considering the undertaking on affidavit dated 24 January, 2019 by both the Discoms that 100% metering in four un-metered categories shall be completed by March 2020 and also request from Discoms to retain these un-metered categories till March 2021, the Commission had decided to continue un-metered sub-categories in IAS-I (Private Tube wells) and SS (Unmetered) categories till FY 2020-21. Discoms were directed to install meters in these two un-metered categories till 31 March, 2021.
- 6.2.9. However, in the present submission, it is observed that the Discoms have not complied with the said directives and have considered the un-metered sub-categories in IAS-I (Private Tube wells) and SS (Unmetered) categories for FY 2021-22. Upon clarification

sought, Discoms stated that it is currently not feasible for the them to provided meters to the unmetered categories of IAS-I and SS-II consumers due to the geographical challenges faced by the Discoms in metering such consumers. Further, Discoms submitted that unmetered categories in Agriculture are being billed by the approval of respective Regulatory Commissions in the state of Gujarat, Maharashtra, Tamil Nadu, Uttar Pradesh etc. wherein Regulatory Commissions in the States of Uttar Pradesh, Tamil Nadu, etc., have also allowed billing of Street Light consumers under unmetered category. Discoms have accordingly requested the Commission to approve the unmetered consumers for IAS-I and SS-II categories.

- 6.2.10. The Commission is not at all satisfied with the reasoning provided by the Discoms. The Commission is of the view that electricity supply should be metered for all category in order to have proper accounting and to track the performance of Discoms. However, considering the present circumstance on account of challenges faced due to outbreak of COVID-19, the Commission after thoughtful consideration has given one last opportunity for Discoms to install meters in these two un-metered categories till 31 March, 2022. The Commission reiterating its direction that the Licensees to comply with the directions given by the Commission to put its sincere efforts for converting the unmetered consumers to metered consumers thereby ensuring that metering is achieved up to the satisfactory level, failing which the Commission may take a strict view for appropriate action.
- 6.2.11. The Commission has analysed the submissions made by Discoms in detailed. The following paragraphs highlight the approach and assumptions used by the Discoms for projecting the category-wise number of consumers, connected load and energy sales for FY 2020-21 as well as the analysis and approval of the same by the Commission.

Number of Consumers and sales for SBPDCL:

- 6.2.12. SBPDCL has submitted that for projecting the number of consumers and energy sales for FY 2020-21, the percentage growth rates for each consumer category are considered as shown in the Table below:

Table 218: Growth rates considered by SBPDCL for projecting consumers and sales for FY 2021-22

Consumer Category	Number of Consumers			Sales (MU)		
	FY 2020-21 (R.E.)	Growth Rate	FY 2021-22 (Projected)	FY 2020-21 (R.E.)	Growth Rate	FY 2021-22 (Projected)
Domestic	5283517	5.16%	5556377	7585.91	8.07%	8198.34
Kutir Jyoti	1544384	4.00%	1606159	1219.16	5.04%	1280.61
Domestic Rural (DS-I)	2412801	6.00%	2557569	3218.01	8.12%	3479.31
Domestic Urban (DS II)	1326157	5.00%	1392465	3148.66	9.20%	3438.34

Consumer Category	Number of Consumers			Sales (MU)		
	FY 2020-21 (R.E.)	Growth Rate	FY 2021-22 (Projected)	FY 2020-21 (R.E.)	Growth Rate	FY 2021-22 (Projected)
DS III	174	5.00%	183	0.08	8.15%	0.08
Non-Domestic Service	446230	8.21%	482888	1213.62	9.86%	1333.27
Non-Domestic (NDS I)	116786	6.00%	123793	309.53	9.18%	337.96
Non-Domestic (NDS II)	329444	9.00%	365830	904.08	10.09%	995.31
Contract Demand <0.5 kW	8127	9.00%	8858	5.34	10.09%	5.88
Contract Demand >0.5 kW	321318	11.10%	356972	898.74	10.09%	989.42
Street Light Services	1445	7.69%	1556	71.53	-1.88%	70.19
Streetlight I	852	20.00%	1023	14.71	26.00%	18.54
Streetlight II	593	-10.00%	534	56.82	-9.10%	51.65
Irrigation & Allied Services	250185	2.85%	257309	599.79	42.01%	851.78
IAS I	244900	2.69%	251495	520.82	37.87%	718.06
IAS II	5286	10.00%	5814	78.98	69.31%	133.72
Public Service Connections	13080	39.59%	18258	139.31	25.16%	174.36
Public Water Works	2780	1.00%	2807	87.36	5.04%	91.77
Har Ghar Nal	10300	50.00%	15451	51.95	59.00%	82.59
Low Tension Industrial Services	56159	7.80%	60537	455.73	8.59%	494.86
LTIS I (0-19 kW)	52342	8.00%	56529	341.97	9.08%	373.02
LTIS II (>19 kW - 74 kW)	3817	5.00%	4008	113.76	7.10%	121.84
High Tension	1856	4.06%	1932	2057.51	12.04%	2305.27
HTS I - 11 kV	1707	4.00%	1775	636.65	13.29%	721.24
HTS II - 33 kV	131	5.00%	137	460.91	10.98%	511.53
HTS III -132 kV	5	5.00%	5	226.62	4.36%	236.51
HTS IV - 220 kV	-		-	-		-
HTS IV - 33/11 Kv	13	2.00%	14	733.34	14.00%	836
Total	6052472	5.39%	6385591	12123.41	10.76%	13428.07

6.2.13. The Commission notes that the following approach and assumptions have been used by SBPDCL for projecting category wise number of consumers and energy sales for FY 2021-22.

- i. The growth rate in KJY consumers was 4% in FY 2019-20 the Petitioner

estimated that in FY 2020-21 the growth rate in consumers of KJ will be similar to that of FY 2019-20, as the objective of Saubhagya scheme has already been achieved and almost all the households are connected to the grid. Hence a nominal growth rate of 4% was considered in FY 2020-21. The Petitioner has considered 5% growth in sales for FY 2020-21 as there was a phenomenal growth of 137% in this category for FY 2018-19 which dipped down to 2% in FY 2019-20.

- ii. The growth rate of DS-I consumers was 11% in FY 2019-20, since the objective of Saubhagya scheme has already been achieved and almost all the households are connected to the grid, the nominal growth rate of 6% is considered for projecting consumers for FY 2021-22. There was an increase of 30% in the monthly consumption per consumer in FY 2019-20. The fact that almost all the domestic consumers are connected to the grid, hence there would be constant growth in future. The Petitioner therefore have estimated 2% increase in average consumption per consumer in FY 2020-21 and FY 2021-22. Hence the growth rate in overall sales for DS-I is considered as 4% in FY 2021-22.
- iii. There was a growth of 1% in the DS-II category of consumers for FY 2019-20. Considering the minimum growth rate, the Petitioner has considered the growth rate of 2% for projecting consumers under this category. In Energy sales, a growth of 6% is assumed in this category for FY 2021-22. In FY 2019-20 growth rate of 18% is observed in this category. The petitioner did not foresee major growth in this category, hence 6% of growth is requested to be adopted by the Commission in FY 2021-22. It has also been observed that the consumer demand is always near the peak demand limit set for the category.
- iv. The Petitioner submitted that it has estimated nominal growth rate of 6% in NDS-I category while projecting number of consumers for FY 2021-22. Though this category depicts phenomenal growth rates (24% in FY 21), still the Petitioner submits that owing to huge growth in previous years the consumers will grow at a normal pace. The sales projections for NDS-I category is done in a way to rationalize the sales pattern for the category considering that the average consumption per consumer in previous years. The growth in average consumption per consumer has been varying and hence a growth rate of 7% is assumed for FY 2021-22 for this category.
- v. The half yearly growth rate in the number of consumers in NDS-II category, i.e., H1 of FY 2020- 21 over FY 2019-20, is 4% despite the lockdown due to COVID-19. The Petitioner submitted that this trend cannot be trusted on standalone data. Hence a growth rate of 6% is assumed for FY 2020-21 in NDS-II category and a nominal growth rate of 9% is assumed for FY 2021- 22.
- vi. As per the third agricultural roadmap, Bihar has started work to set up dedicated feeders to provide electricity for agriculture. A total of 296 power substations will be set up to provide electricity to 1,312 dedicated feeders. Hence a modest growth of 3% is estimated for FY 2021- 22 in IAS-I category. The specific consumption has decreased hugely during the lockdown. Also, with the agenda of 100% metering in the state, a decrease in unmetered category of IAS- I has been considered for projection. This will also ensure

better billing of customers and a reduced AT&C loss. The overall growth in sales is assumed to decrease by 1% considering the above factors.

- vii. For IAS-II category, the petitioner submitted that the growth in number of consumers for FY 2021-22 has been taken as 5% considering that the growth rate for FY 2020-21 as 45%. There was a significant growth observed in monthly consumption per customer and therefore overall growth rate of 60% is considered for FY 2021-22 to estimated sales under IAS-II category.
- viii. The petitioner submitted that the consumer growth for LTIS-I category in FY 2021-22 is assumed to be a nominal as 8%. This is due to a fluctuant growth rate shown over the years in the consumption pattern of the IAS-II category. The average consumption per consumer has decreased over the years but has increased by 24% in FY 2019-20. Hence the petitioner has considered a nominal growth rate of 6% for projection of consumers. The average consumption per consumer for FY 2018-19 was -7%. Hence the petitioner has considered the growth rate of 8% for projection of consumers.
- ix. The petitioner submitted that the consumer growth for LTIS-II in FY 2021-22 is assumed to be 5%. There has been a dip in the first six months of FY 2021. However, Petitioner estimated that same would not have any considerable impact much FY 2021-22 assuming that there will be modest growth in the industrial sector as per Ministry of Statistics and Programme Implementation. It is further assumed that the increase in consumption will directly be reflected through addition of consumers and an increase of 5% is considered to project the sales of FY 2021-22.
- x. The Petitioner has estimated a growth rate of 1% in number of consumers in FY 2021-22 in PWW category. In Har Ghar Nal Yojana the Petitioner submits that there will be exceptional high growth in coming years. A growth rate of 220% is expected in 2020-21. However, since it is expected to complete most of the electrification process in FY 2020-21, a growth rate of 50% is assumed in FY 2021-22. The Petitioner has estimated the growth rate of 1% in PWW for FY 2021-22 sales. The growth rate in sales for Har Ghar Nal Yojana is estimated as 50% considering rapid expansion of scheme in coming years.
- xi. The petitioner has assumed the consumer growth for both FY 2020-21 and FY 2021-22 to be 5% for Street Light Services, as the Growth in H1 of FY 2019-20 over FY 2018 was 6% and the yearly growth rate from H1 of 2019-20 over H1 of 2018- 19 was 11%. The monthly consumption per customer was 20% for FY 2019-20 but with the conversion of unmetered category to metered category, it is further expected that the unmetered consumption will decrease whereas the metered consumption will show a significant increase. The overall impact as per the assumed figures show an expected decrease in FY 2020-21 and FY 2021-22 respectively, as the growth in the number of consumers is 5% each for FY 2020-21 and FY 2021-22. The overall sales growth for FY 2019-20 was 102% which has hugely dipped in the first half of FY 2020-21. Hence the Petitioner has estimated sales growth rate as (-5%) in FY 2021-22.

- xii. The petitioner has not estimated huge growth in number of consumers of HT category in FY 2021-22 considering decreasing trends in past and as per the data released by Ministry of Statistics and Programme Implementation.
- xiii. The Petitioner has considered no projection for consumers for RTS category, load and sales or RTS category for FY 2021-22 since all the consumers have moved to Open access.

Number of Consumers and sales for NBPDC:

6.2.14. NBPDC has submitted that for projecting the number of consumers and energy sales for FY 2020-21, the percentage growth rates for each consumer category are considered as shown in the Table below:

Table 219: Growth rates considered by NBPDC for projecting consumers and sales for FY 2021-22

Consumer Category	Number of Consumers			Sales (MU)		
	FY 2020-21 (R.E.)	Growth Rate	FY 2021-22 (Projected)	FY 2020-21 (R.E.)	Growth Rate	FY 2021-22 (Projected)
Domestic	9841686	5.00%	10307751	7982.29	7.00%	8540.00
Kutir Jyoti	4147841	3.00%	4272276	2648.3	4.00%	2755.03
Domestic Rural (DS-I)	4454673	6.00%	4721954	3649.45	8.00%	3945.78
Domestic Urban (DS II)	1239106	6.00%	1313453	1684.51	9.00%	1839.15
DS III	65	5.00%	69	0.03	8.00%	0.04
Non-Domestic Service	588413	8.00%	636532	1255.07	10.00%	1381.94
Non-Domestic (NDS I)	241949	7.00%	258886	189.96	10.00%	209.36
Non-Domestic (NDS II)	346464	9.00%	377646	1065.11	10.00%	1172.58
Contract Demand <0.5 kW	1297	9.00%	1413	2.08	10.00%	2.3
Contract Demand >0.5 kW	345168	9.00%	377494	1063.03	10.00%	1170.29
Street Light Services	1160	4.00%	1203	38.79	1.00%	38.99
Streetlight I	357	30.00%	463	6.91	31.00%	9.08
Streetlight II	804	-8.00%	739	31.88	-6.00%	29.91
Irrigation & Allied Services	103332	11.00%	114408	149.07	27.00%	188
IAS I	96997	11.00%	107566	122.56	8.00%	132.64
IAS II	6335	8.00%	6841	26.52	112.00%	56.11
Public Service Connections	23122	24.00%	28574	91.55	29.00%	117.75

Consumer Category	Number of Consumers			Sales (MU)		
	FY 2020-21 (R.E.)	Growth Rate	FY 2021-22 (Projected)	FY 2020-21 (R.E.)	Growth Rate	FY 2021-22 (Projected)
Public Water Works	1564	4.00%	1627	21.74	8.00%	23.51
Har Ghar Nal	21558	25.00%	26947	69.81	35.00%	94.24
Low Tension Industrial Services	49230	13.00%	55595	320.55	14.00%	364.41
LTIS I (0-19 kW)	48040	13.00%	54285	273.26	14.00%	311.87
LTIS II (>19 kW - 74 kW)	1190	10.00%	1309	47.29	11.00%	52.54
High Tension	1121	2.00%	1144	528.93	22.00%	644.72
HTS I - 11 kV	1072	2.00%	1093	332.14	25.00%	416
HTS II - 33 kV	42	3.00%	44	111.67	6.00%	118.23
HTS III -132 kV	3	4.00%	3	37.3	60.00%	59.77
HTS IV - 220 kV	-	-	-	-	-	-
HTS IV - 33/11 Kv	4	2.00%	4	47.83	6.00%	50.72
Railway Traction Services	3	3.00%	3	72.04	62.00%	116.41
Nepal	1	0.00%	1	151.61	0.00%	151.61
Total	10608069	5.00%	11145211	10589.92	9.00%	11544.57

6.2.15. The Commission notes that the following approach and assumptions are used by NBPDC for projecting category wise number of consumers and energy sales for FY 2021-22.

- i. The growth rate in KJY consumers was 3% in FY 2020-21, the Petitioner estimated that in FY 2021-22 the growth rate in consumers of KJ will be similar to that of FY 21, as the objective of Saubhagya scheme has already been achieved and almost all the households are connected to the grid. Hence a nominal growth rate of 4% is considered in FY 2021-22. The Petitioner has considered 4% growth in sales for FY 2020-21 and a similar assumption is considered for FY 2021-22. Therefore, considering the fact that electrification spread across, the growth pattern will stabilize till FY 2021-22. Accordingly, the Petitioner has requested the Commission to approve the rate of 4% for sales and 4% for number of consumers.
- ii. The growth rate of DS-I consumers was 5% in FY 2020-21, since the objective of Saubhagya scheme has already been achieved and almost all the households are connected to the grid, the nominal growth rate of 7% is considered for projecting consumers for FY 2021-22. There was an increase of 43% in the monthly consumption per consumer in FY 2019-20. The fact that almost all the domestic consumers are connected to the grid, hence there would be constant growth in

- future. The Petitioner therefore have estimated 2% increase in average consumption per consumer in FY 2020-21 and FY 2021-22. Hence the growth rate in overall sales for DS-I is considered as 8% in FY 2021-22.
- iii. There was rise of 3% in the DS-II category of consumers for FY 2019-20. Considering the minimum growth rate, the Petitioner has considered the growth rate of 5% for projecting consumers under this category. In Energy sales, a growth of 9% is assumed in this category for FY 2021-22. In FY 2019-20 monthly consumption per consumers dropped by 21% in this category. The petitioner has not envisaged any major growth in this category; hence 9% growth is requested to for consideration by the Commission in FY 2021-22. Petitioner also submitted that the consumer demand is always near the peak demand limit set for the category.
 - iv. The Petitioner submitted that it has estimated nominal growth rate of 9% in NDS-I category while projecting number of consumers for FY 2021-22. Though this category depicts phenomenal growth rates (23% in FY 21), still the Petitioner submits that owing to huge growth in previous years the consumers will grow at a normal pace. The sales projections for NDS-I category is done in a way to rationalize the sales pattern for the category considering that the average consumption per consumer in previous years. The growth in average consumption per consumer has been varying and hence a growth rate of 10% is assumed for FY 2021-22 for this category.
 - v. The half yearly growth rate in the number of consumers in NDS-II category, i.e., H1 of FY 2020-21 over FY 2019-20, is 13% despite the lockdown due to COVID-19. The Petitioner submitted that this trend cannot be trusted on standalone data. Hence, a growth rate of 19% is assumed for FY 2020-21 in NDS-II category and a nominal growth rate of 14% is assumed for FY 2021-22.
 - vi. As per the third agricultural roadmap, Bihar has started work to set up dedicated feeders to provide electricity for agriculture. A total of 296 power substations will be set up to provide electricity to 1,312 dedicated feeders. Hence a modest consumer growth of 11% is estimated for FY 2021-22 in IAS-I category. The specific consumption has increased slightly during the lockdown. Also, with the agenda of 100% metering in the State, a decrease in unmetered category of IAS-I has been considered for projection. This will also ensure better billing of customers and a reduced AT&C loss. The overall growth in sales is assumed to increase by 8% considering the above factors.
 - vii. The number of consumer growth for FY 2021-22 is taken as 8% considering that the growth rate for FY 2020-21 as 24% for IAS-II category. There was a significant drop in growth observed in monthly consumption per customer and therefore overall growth rate of 108% is considered for FY 2021-22 to estimate sales under IAS-II category.
 - viii. The petitioner submitted that the consumer growth for LTIS-I category in FY 2021-22 is assumed to 20%. This is due to a fluctuant growth rate shown over the years in the consumption pattern of the LTIS-I category. The average consumption per

consumer has decreased over the years. The average consumption per consumer for FY 2019-20 was -11%. Hence, the Petitioner has considered a growth rate of 17% for projection of sales.

- ix. The Petitioner submitted that the consumer growth for LTIS-II in FY 2021-22 is assumed to be 12%. There has been a dip in sales in the first six months of FY 2021, however, it is believed not to impact much in FY 2021-22. And assuming that there will be modest growth in the industrial sector as per Ministry of Statistics and Programme Implementation. It is further assumed that the increase in consumption will directly be reflected through addition of consumers and an increase of 14% is considered to project the sales of FY 2021-22.
- x. The Petitioner has estimated a growth rate of 4% in number of consumers in FY 2021-22 in PWW category. In Har Ghar Nal Yojana the Petitioner submits that there will be exceptional high growth in coming years. A growth rate of 118% is expected in 2020-21. However, since all the electrification is completed, a growth rate of 25% growth is assumed in FY 2021-22. The Petitioner has estimated the growth rate of 4% in PWW for FY 2021-22 sales. The growth rate in sales for Har Ghar Nal Yojana is estimated as 8% considering rapid expansion of scheme in coming years.
- xi. The Petitioner submitted that the consumer growth for FY 2020-21 and FY 2021-22 is assumed to be 11% and 4% respectively for Street Light Services, as the Growth in H1 of FY2020-21 over FY 2019-20 was 11%. The monthly consumption per customer was 55% for FY 2019-20 but with the conversion of unmetered category to metered category, it is further expected that the unmetered consumption will decrease whereas the metered consumption will show a significant increase. The overall impact as per the assumed figures show an expected decrease in FY 2021-22 respectively as the growth in the number of consumers is 11% in FY 2020-21 and 4% in FY 2021-22. The overall sales growth for FY 2019-20 was 29% which has hugely dipped in the first half of FY 2020-21. Hence, the Petitioner has estimated sales growth rate as 1% in FY 2021-22.
- xii. The petitioner also submitted that that is has not envisaged any huge growth in number of consumers in FY 2021-22 considering decreasing trends in past and as per the data released by Ministry of Statistics and Programme Implementation.
- xiii. The Petitioner has considered no change in consumers for RTS category, with a sales increase of 67% in FY 2021-22, as all the remaining RTS consumers have been moved to Open Access.

6.2.16. **SBPDCL and NBPDCCL have also submitted** that for projecting the connected load, an average connected load per consumer has been taken as per the actual data of the past few years. This has then been then multiplied by projected number of consumers to arrive at the connected Load.

6.2.17. Further, NBPDCCL and SBPDCL have submitted number of consumers have been considered based on provisional figures available for September 2020 and thereafter,

considering the appropriate growth rate. The energy sale has been projected by considering the average consumption per consumer per month and then multiplying the same to the projected number of consumers. The impact of COVID-19 on number of consumers and sales of certain categories in the first half of FY 2021 has also been considered while projecting the overall sales for FY 2021. This has further been rationalized for FY 2021-22 by considering the average consumption per consumer per month on annual basis.

- 6.2.18. The number of years taken for estimating the CAGR however varies since the trend in certain categories is impacted by multiple other factors and taking a uniform period for calculating the CAGR skews the outcome. In addition to the CAGR, it has also been ensured that other factors impacting demand, such as growth in the no. of consumers (due to schemes including Chief Minister scheme and Saubhagya scheme), enhanced power procurement, strengthening of distribution network for enhancing quality of supply, energy efficiency and DSM measures etc., have been adequately incorporated to reflect a realistic demand scenario.
- 6.2.19. Considering that the Discoms might have taken care of all possible options such as electrification of un-electrified rural areas and households in rural areas, improved number of hours of supply in rural areas, pending applications on hand for new connections, present economic slowdown in the country, impact of COVID, etc., the Commission approves the category-wise number of consumers, connected load and energy sales for FY 2020-21 as per the principle adopted by SBPDCL & NBPDC. However, wherever arithmetical mistakes have been noticed, the same have been corrected.
- 6.2.20. The Commission has noted that many of RTS consumers have gradually opted for Open Access facility and no RTS is left with SBPDCL while 3 RTS consumers are left with NBPDC as on H1 of FY 2020-21. Accordingly, same is considered by the Commission.
- 6.2.21. Accordingly, the Commission approves the category-wise number of consumers, connected load and sales for SBPDCL and NBPDC for FY 2021-22 as shown in the Tables below:

Table 220: Category-wise number of consumers approved for SBPDCL & NBPDC for FY 2021-22

Category	NBPDC	SBPDCL	Total
Domestic	10,307,751	5,556,377	15,864,128
Kutir Jyoti	4,272,276	1,606,159	5,878,436
Domestic Rural (DS-I)	4,721,954	2,557,569	7,279,523
Domestic Urban (DS II)	1,313,453	1,392,465	2,705,918
DS III	69	183	252

Category	NBPDCCL	SBPDCL	Total
Non-Domestic Service	637,793	489,623	1,127,416
Non-Domestic (NDS I)	258,886	123,793	382,679
Non-Domestic (NDS II)	378,908	365,830	744,737
Contract Demand <0.5 kW	1,413	8,858	10,272
Contract Demand >0.5 kW	377,494	356,972	734,466
Street Light Services	1,203	1,556	2,759
Streetlight I	739	534	1,273
Streetlight II	463	1,023	1,486
Irrigation & Allied Services	114,408	257,309	371,716
IAS I	107,566	251,495	359,061
IAS II	6,841	5,814	12,656
Public Service Connections	28,574	18,258	46,832
Public Water Works	1,627	2,807	4,434
Har Ghar Nal	26,947	15,451	42,398
Low Tension Industrial Services	55,595	60,537	116,131
LTIS I (0-19 kW)	54,285	56,529	110,815
LTIS II (>19 kW - 74 kW)	1,309	4,008	5,317
High Tension	1,144	1,931	3,075
HTS I - 11 kV	1,093	1,775	2,868
HTS II - 33 kV	44	137	181
HTS III -132 kV	3	5	9
HTS IV - 220 kV	0	0	0
HTS IV - 33/11 Kv	4	14	18
Railway Traction Services	3	0	3
Nepal	1		1
Total	11,146,472	6,385,591	1,75,32,063

Table 221: Category-wise Connected Load approved for SBPDCL & NBPDCCL for FY 2021-22 (kW)

Category	NBPDCCL	SBPDCL	Total
Domestic			
Kutir Jyoti	7,476,739	7,074,502	14,551,242
Domestic Rural (DS-I)	657,592	221,889	879,481
Domestic Urban (DS II)	5,136,017	2,768,101	7,904,118
DS III	1,683,000	4,084,197	5,767,197
Non-Domestic Service	130	315	446
Non-Domestic (NDS I)	1,258,493	1,468,025	2,726,518
Non-Domestic (NDS II)	293,323	181,034	474,357
Contract Demand <0.5 kW	965,170	1,286,991	2,252,161

Category	NBPDCCL	SBPDCL	Total
Contract Demand >0.5 kW	959	4,215	5,174
Street Light Services	964,211	1,282,776	2,246,988
Streetlight I	20,955	20,874	41,829
Streetlight II	16,381	12,389	28,770
Irrigation & Allied Services	4,574	8,486	13,059
IAS I	363,288	699,477	1,062,765
IAS II	294,775	594,575	889,350
Public Service Connections	68,513	104,902	173,415
Public Water Works	91,353	93,116	184,468
Har Ghar Nal	23,989	36,487	60,476
Low Tension Industrial Services	67,364	56,629	123,992
LTIS I (0-19 kW)	573,912	675,798	1,249,710
LTIS II (>19 kW - 74 kW)	509,299	483,404	992,704
High Tension	64,613	192,394	257,007
HTS I - 11 kV	360,797	810,523	1,171,320
HTS II - 33 kV	231,091	377,116	608,207
HTS III -132 kV	71,321	262,745	334,066
HTS IV - 220 kV	45,985	33,753	79,738
HTS IV - 33/11 Kv	0	0	0
Railway Traction Services	12,401	136,909	149,310
Nepal	24,350	0	24,350
SLDC Deviation			
Total	10,169,887	10,842,316	2,10,12,203

Table 222: Category-wise Energy Sales approved for SBPDCL & NBPDCCL for FY 2021-22 (MU)

Category	NBPDCCL	SBPDCL	Total
Domestic	8,540.00	8,198.34	16,738.34
Kutir Jyoti	2,755.03	1,280.61	4,035.64
Domestic Rural (DS-I)	3,945.78	3,479.31	7,425.10
Domestic Urban (DS II)	1,839.15	3,438.34	5,277.48
DS III	0.04	0.08	0.12
Non-Domestic Service	1,381.94	1,333.27	2,715.21
Non-Domestic (NDS I)	209.36	337.96	547.32
Non-Domestic (NDS II)	1,172.58	995.31	2,167.89
Contract Demand <0.5 kW	2.30	5.88	8.18
Contract Demand >0.5 kW	1,170.29	989.42	2,159.71
Street Light Services	38.99	70.19	109.18
Streetlight I	29.91	51.65	81.56

Category	NBPDCCL	SBPDCL	Total
Streetlight II	9.08	18.54	27.62
Irrigation & Allied Services	188.75	851.78	1,040.53
IAS I	132.64	718.06	850.71
IAS II	56.11	133.72	189.82
Public Service Connections	117.75	174.36	292.12
Public Water Works	23.51	91.77	115.28
Har Ghar Nal	94.24	82.59	176.84
Low Tension Industrial Services	364.41	494.86	859.27
LTIS I (0-19 kW)	311.87	373.02	684.90
LTIS II (>19 kW - 74 kW)	52.54	121.84	174.37
High Tension	644.72	2,305.27	2,949.99
HTS I - 11 kV	416.00	721.24	1,137.24
HTS II - 33 kV	118.23	511.53	629.76
HTS III -132 kV	59.77	236.51	296.28
HTS IV - 220 kV	0.00	0.00	0.00
HTS IV - 33/11 Kv	50.72	836.00	886.71
Railway Traction Services	116.41	0.00	116.41
Nepal	151.61		151.61
Total	11,544.57	13,428.07	24,972.65

6.3. Distribution Loss

NBPDCCL & SBPDCL's Submission:

- 6.3.1. Petitioners submitted that to reform themselves by achieving a financial and operational turnaround, the Government of Bihar and the two Distribution Companies have signed a tripartite Memorandum of Understanding (MoU) of Ujwal DISCOM Assurance Yojana (UDAY) with the Ministry of Power, Government of India on 22nd February, 2016.
- 6.3.2. In a Letter to Ministry of Power in July, 2019 the Discoms have expressed their inability to achieve the losses of 15% as agreed under UDAY and requested for a revision of UDAY targets for FY 2019-20 from present 15% to 20% .
- 6.3.3. Petitioners further submitted that a letter to MoP, GoI on the roadmap for loss reduction, they proposed a revised trajectory for reduction in AT&C loss till FY 2023-24, as shown in the Table below:

Table 223: AT&C Loss trajectory proposed by NBPDCCL and SBPDCL to MoP

Category	UoM	NBPDCCL	SBPDCL
FY 2020-21 (Projected)	%	29.88	39
FY 2021-22 (Projected)	%	25.50	34

Category	UoM	NBPDCCL	SBPDCL
FY 2022-23 (Projected)	%	23.00	29
FY 2023-24 (Projected)	%	18.00	23

- 6.3.4. Petitioners further submitted that in light of the various measures being undertaken by the State and the existing levels of T&D losses, they have targeted a reduction in AT&C losses and to achieve AT&C loss by FY 2021-22, Distribution loss and the collection efficiency as shown in the table below:

Table 224: AT&C Loss, Distribution loss and collection efficiency proposed by NBPDCCL and SBPDCL to MoP

Category	UoM	NBPDCCL	SBPDCL
Distribution loss	%	20%	22%
Collection Efficiency	%	93.1%	85%
AT&C Loss	%	25.5%	34%

- 6.3.5. Further the Petitioner submitted that as per Regulation 18 of the BERC (Multi Year Distribution Tariff) Regulations, 2018, the Commission has the authority to revise the Distribution loss baseline in the state based on actual situation in the state.
- 6.3.6. Petitioners further submitted that in FY 2017-18 and FY 2018-19, a large number of rural consumers have been added to their consumer database. Due to this addition in the number of consumers at a Low Tension level in rural areas, where the length of feeders is generally longer, the technical losses are expected to go up. Therefore, for the DISCOM as a whole, it would not be possible to drastically reduce losses in FY 2021-22.
- 6.3.7. Further, Petitioners submitted that though they are making the best possible efforts to reduce the losses with the introduction of feeder separation schemes, spot billing etc. and various other IT initiatives, the reduction in losses would still occur in a phased manner.
- 6.3.8. Accordingly, the Petitioners requested the Commission to allow the distribution losses for FY 2021-22 as submitted in the Table above.

Commission's Analysis

- 6.3.9. As regard to request of the Discoms to revise the Distribution losses, the Commission has already dealt with such an issue in detailed at para 4.3.14 in True-up section of this Order. The Commission held that it is the responsibility of the Discoms to achieve the agreed distribution loss target which is controllable in nature. The Commission had given a number of directives to improve the performance of distribution licensees,

which if implemented in true spirit, should have brought down the Distribution loss level considerably. The Discoms have already been given a sufficient opportunity to reduce their actual distribution losses below specified targets.

- 6.3.10. Accordingly, the Commission does not deem it prudent and appropriate to revise the distribution loss trajectory time and again in the interest of operational efficiency of the Discoms and safeguarding the consumers' interest. Therefore, the Commission decides to retain the Distribution loss for the Discoms for FY 2021-22 at 15% as shown in the Table below:

Table 225: Distribution Loss Approved for Discoms for FY 2021-22

DISCOM	Approved in Tariff Order Dated 15.02.2019	Projected in the Petition for FY 2020-21	Approved by the Commission for FY 2020-21
NBPDCCL	15%	20%	15%
SBPDCL	15%	22%	15%

(A) Collection Efficiency:

- 6.3.11. As per UDAY scheme, the Discoms have agreed to achieve the collection efficiency of 100% in FY 2019-20. The Commission approved the same 100% collection efficiency for FY 2021-22 for the Discoms in the MYT Order dated 25 February, 2019. Therefore, the Commission retains the collection efficiency for FY 2021-22 at 100% as shown in subsequent Table:

(B) AT&C Losses:

- 6.3.12. From the UDAY MOU, the Commission has also noted that the AT&C loss target for FY 2019-20 is agreed by the Discoms at 15%. The Commission approved the AT&C losses for the Discoms for FY 2021-22 at 15% in the MYT Order, dated 25 February, 2019. Therefore, the Commission retains the AT&C losses for FY 2021-22 at 15% as shown in the table below:

Table 226: Distribution Loss, Collection Efficiency and AT&C Loss approved for FY 2020-21

Particulars	NBPDCCL		SBPDCL	
	Projected in the Petition for FY 2021-22	Approved by the Commission for FY 2021-22	Projected in the Petition for FY 2021-22	Approved by the Commission for FY 2021-22
Distribution Loss	21%	15%	24%	15%
Collection Efficiency	88.70%	100%	80%	100%
AT&C Loss	29.90%	15%	39%	15%

6.3.13. The Commission has explained with an example the methodology to be followed for computation of AT&C loss in the Regulation 18.5 of BERC (Multi Year Distribution Tariff) Regulations, 2018.

6.3.14. **The Discoms are directed to compute the AT&C loss following the same formulae and methodology as provided in the review (Chapter 5) of this Order.**

6.4. State Transmission Loss

NBPDCCL & SBPDCL's Submission:

6.4.1. Discoms have submitted that the Commission has approved Intra-State Transmission Loss at 3.00% for FY 2021-22 in the last Tariff Order and accordingly considered 3.00% for FY 2021-22.

Commission's Analysis:

6.4.2. The Commission has approved the Intra-State Transmission Loss at 3.92% for FY 2021-22 in the MYT Order dated 15 February, 2019. However, as explained in the APR and ARR chapters of BSPTCL Tariff Order for FY 2021-22 dated 19 March, 2021, the Commission has already approved the Intra-State Transmission Losses at 3.00%. Therefore, the Commission considers the Intra-State Transmission Loss for FY 2021-22 at 3.00%, subject to True-up based on actuals.

6.5. Central Transmission Loss

NBPDCCL & SBPDCL's Submission:

6.5.1. The Petitioner has considered Transmission Loss of 1.73% as per latest 52 weeks moving average and accordingly requests the Commission to consider the same.

Commission's Analysis:

6.5.2. The Commission considers the central Transmission Loss at 1.73% for FY 2021-22 as projected by the Petitioner subject to True-up based on actuals.

6.6. Power Purchase

NBPDCCL & SBPDCL's Submission:

6.6.1. The Discoms have submitted that they rely on allocation from central generating stations and state projects for procuring power for sale in the state. This power has been proposed to be allocated between North and South Bihar in the proportion as determined by the BSPHCL's Board resolution as detailed below:

“RESOLVED THAT Power Purchase & Transmission charges bills are to be admitted and payment by both Discoms i.e. NBPDCCL and SBPDCL in the ratio 46:54 respectively w.e.f.1-4-2017 subjected to the final reconciliation of actual consumption”

6.6.2. Petitioners submitted that the following plant addition has been considered by the for FY 2020-21 and FY 2021-22 as shown in the Table below:

Table 227: New Plant addition for FY 2020-21 and FY 2021-22 submitted by Petitioners

Sr. No	Plant Name	NBPDC's submission		SBPDCL's submission	
		CoD	Bihar Allocation (MW)	CoD	Bihar Allocation (MW)
A	Conventional		3172		3072
1	Barh Stage I Unit I	Mar-21	342	Dec-20	342
2	Barh Stage I Unit II	Nov-21	342	Jul-21	342
3	Barh Stage I Unit III	Jun-22	342	Jan-22	342
4	Nabinagar BRBCL Unit IV	Apr-21	24	Feb-21	24
5	NPGCL Unit II	Apr-21	517	Dec-20	517
6	NPGCL Unit III	Aug-21	517	Aug-21	517
7	North Karanpura Unit I	Dec-21	229	Jun-21	229
8	North Karanpura Unit II	Jun 2022`	229	Nov-21	229
9	Darlipali STPS Unit I	Mar-20	80		
10	Darlipali STPS Unit II	May-21	80	Dec-20	80
11	BTPS Stage I Unit I	Jan-20	110	Jan-20	110
12	BTPS Stage I Unit II	Mar-21	110	May-21	110
13	BTPS Stage II Unit II	Mar-21	250	May-21	250
B	Non-Conventional		2,030		2,030
1	SECI Phase-II (Solar)	Mar-22	150	Mar-22	150
2	SECI Phase-III (Solar)	May-21	300	May-21	300
3	NTPC (Solar)	Jun-21	300	Jun-21	300
4	Torrent Power	Mar-21	49.8	Mar-21	49.8
5	Adani Green	Dec-20	50	Dec-20	50
6	Alfanar	Dec-20	50	Dec-20	50
7	Adani Green (V)	Oct-21	125	Oct-21	125
8	Boreas Renewable	Dec-20	175	Dec-20	175
9	Ostro Kannad	Aug-21	300	Aug-21	300
10	Morjar Windfarm	Aug-21	50	Aug-21	50
11	SECI Phase-V	Jan-22	480	Jan-22	480
	Total		5102		5102

6.6.3. The power purchase (MU) has been calculated on yearly basis keeping in mind the maintenance schedule as notified by ERPC/ERLDC from April 2019 to March 2020. The methodology of projecting Power purchase quantum (MU) is as mentioned below:

- i. The above-mentioned share allocation has been considered using the latest COD's of each unit and weighted average based on its projected availability. Many new plants are expected to start operations in the financial year 2021-22. The increase in the share allocation has grown with the demand and is in lines allocated generation capacity in the 24x7 Power for All (PFA) agreement.
 - ii. The Plant Load Factor (PLF) for each plant has been calculated on actual basis of past 4 to 5 years as applicable and for new upcoming conventional plants, a minimum technical PLF of 55% or the PLF of plants with similar capacity (whichever is minimum) is considered. Further, three plants namely FSTPP – 1 & 2 (502 MW), KHSTPP 1 (352 MW) and Talcher Stage I (412 MW) are completing their 25 years in FY 2021- 22 and therefore, a PLF of 55% has been considered for these plants during Power purchase for FY 2021-22.
 - iii. Normative Plant Load Factor Plant (PLF) provided by central Electricity Regulatory Commission (CERC) for the thermal and hydro plants and the auxiliary consumptions specified for the plants. For the state plants PLF highest among the PLF norms specified by BERC and the plant wise auxiliary consumption determined by BERC for thermal, and biomass has been considered. For the solar plants highest among the CUF of 19%. For new plants addition for non-conventional, minimum take off energy has been considered.
 - iv. Considering the PLF as mentioned above and using the power purchase allocation data mentioned in the above table total number of units purchased were calculated from every source/ plant separately.
 - v. The following PPAs are expiring in FY 2021 and FY 2022 and therefore Petitioners have not been considered in Power purchase for the respective years:
 - a. FSTPP – 1 & 2 (502 MW): - Expiring in July 2021
 - b. KHSTPP 1 (352 MW)-Expiring in July 2021
 - c. Talcher Stage I (412 MW) - Expiring in June 2021
- 6.6.4. Discoms have submitted the total Power purchase projections for FY 2021-22 as shown in the table below:

Table 228: Power purchase projected by Discoms for FY 2021-22 (MU)

Sr. No	Plant Name	SBPDCL		NBPDC	
		Share allocated (MW)	Units purchased (MU)	Share allocated (MW)	Units purchased (MU)
A	Central Generating Stations	3,538.32	15,039.06	3,014.13	12,811.05
1	FSTPP I & II	271.28	1,195.92	231.09	1,018.74
2	FSTPP III	58.1	310.5	49.49	264.5
3	KHSTPP I	189.87	837.03	161.74	713.02
4	KHSTPP II	40.34	233.5	34.36	198.91

Sr. No	Plant Name	SBPDCL		NBPDC	
		Share allocated (MW)	Units purchased (MU)	Share allocated (MW)	Units purchased (MU)
5	Barh Stage I Unit I	184.62	816.1	157.26	695.2
6	Barh Stage I Unit II	184.62	272.03	157.26	231.73
7	Barh Stage II	646.77	3,296.83	550.95	2,808.41
8	Nabinagar (BRBCL) Unit I - III	40.5	172.19	34.5	146.68
9	Nabinagar (BRBCL) Unit IV	13.5	52.84	11.5	45.01
10	Talcher Stage I	222.73	960.41	189.73	818.13
11	KBUNL Stage II	157.89	520.33	134.5	443.25
12	NPGCL Unit I	302.11	1,988.78	257.35	1,694.15
13	NPGCL Unit II	302.11	1,335.48	257.35	1,137.63
14	NPGCL Unit III	302.11	777.2	257.35	662.06
15	North Karanpura Unit I	123.85	136.12	105.5	115.96
16	Darlipali STPS Unit I	51.24	204.68	43.64	174.36
17	Darlipali STPS Unit II	51.24	204.68	43.64	174.36
18	Chuka	43.2	230.76	36.8	196.58
19	Rangit	11.34	65.15	9.66	55.5
20	Tala	139.05	534.71	118.45	455.5
21	Teesta	58.55	317.27	49.88	270.27
22	Mangdechhu	143.35	576.54	122.11	491.12
B	State Generating Stations	536.92	1,706.96	457.38	1,454.08
1	BSPHC	29.32	32.4	24.98	27.6
2	KBUNL Stage I	118.8	391.51	101.2	333.51
3	BTPS Stage I Unit I	59.4	195.75	50.6	166.75
4	BTPS Stage I Unit II	59.4	196.29	50.6	167.21
5	BTPS Stage II Unit I	135	444.9	115	378.99
6	BTPS Stage II Unit II	135	446.12	115	380.02
C	IPPs	263.52	1,260.56	224.48	1,073.81
1	GMR	140.4	770.31	119.6	656.19
2	JITPL	123.12	490.25	104.88	417.62
D	Renewables	1,474.96	2,695.88	1,256.44	2,296.49
1	M/s SunmarkEnergy Projects Limited (Formerly MBCEL)	5.4	8.92	4.6	7.6
2	M/s Response renewable Energy Ltd, Kolkata.	5.4	8.92	4.6	7.6

Sr. No	Plant Name	SBPDCL		NBPDC	
		Share allocated (MW)	Units purchased (MU)	Share allocated (MW)	Units purchased (MU)
3	M/s Avantika Contractors Ltd., Hyderabad	2.7	4.46	2.3	3.8
4	M/s Glatt Solutions Pvt. Ltd, Kolkata.	1.62	2.68	1.38	2.28
5	Alfa Infraprop Pvt. Ltd.	10.8	17.84	9.2	15.2
6	Udipta Energy & Equipment Pvt. Ltd.	2.7	4.46	2.3	3.8
7	Azure Power India Pvt. Ltd.	5.4	8.92	4.6	7.6
8	Welspun Renewables Project - I	5.4	8.92	4.6	7.6
9	Welspun Renewables Project-II	8.1	13.38	6.9	11.4
10	Welspun Renewables Project - III	8.1	13.38	6.9	11.4
11	Acme Cleantech Project (Nalanda)	8.1	13.38	6.9	11.4
12	Acme Cleantech Project (Magadh)	5.4	8.92	4.6	7.6
13	Solar Energy Corporation of India Ltd., Government of India	5.4	8.92	4.6	7.6
14	SECI Phase-II	81	14.38	69	12.25
15	SECI Phase-III	162	317.12	138	270.14
16	NTPC	162	277.31	138	236.23
17	Wind ISTS Scheme Tranche I (PTC) (Green Infra, Inox, Mytrah & Ostro)	108	253	92	215.52
18	Wind ISTS Scheme Tranche II (SECI) (Orange)	54	145.78	46	124.18
19	SECI Green Infra	54	147.89	46	125.98
20	Torrent Power	26.89	88.06	22.91	75.02
21	Adani Green	27	76.06	23	64.79
22	Alfanar	27	73.52	23	62.63
23	Betam	27.11	84.21	23.09	71.73
24	Adani Green (V)	67.5	79.24	57.5	67.5
25	Boreas Renewable	94.5	295.98	80.5	252.13
26	Ostro Kannad	162	279.43	138	238.03
27	Morjar Windfarm	27	41.85	23	35.65
28	SECI Phase-V	259.2	116.53	220.8	99.27
29	New Swadeshi Sugar Mill, Narkataganj	5.4	23.81	4.6	20.28
30	Hasanpur Sugar Mill, Dalsinghsarai	7.83	34.52	6.67	29.4
31	Bharat Sugar Mills, Sidhwalia, Gopalganj	8.1	35.71	6.9	30.42
32	Hari Nagar Sugar Mills, Hari Nagar, West Champaran	7.83	34.52	6.67	29.4
33	HPCL Biofuels Ltd., Sugauli, East Champaran	10.8	47.61	9.2	40.56

Sr. No	Plant Name	SBPDCL		NBPDC	
		Share allocated (MW)	Units purchased (MU)	Share allocated (MW)	Units purchased (MU)
34	HPCL Biofuels Ltd., Lauria, West Champaran	10.8	47.61	9.2	40.56
35	Riga Sugar Company Ltd.	1.62	7.14	1.38	6.08
36	Siddhashram Rice Mill Cluster Pvt ltd	0.54	3.46	0.46	2.95
37	Bihar Distillers & Bottlers Pvt ltd	5.08	32.55	4.32	27.73
38	Tirupati Sugar	3.24	15.49	2.76	13.2
E	Others	59.4	238.74	110	203.37
1	PTC JITPL	37.13	147.83	68.75	125.93
2	PTC SKS Power	22.28	90.91	41.25	77.45
F	Total	5,873.12	20941.21	5,062.43	17838.81

6.6.5. The Discoms requested the Commission to approve the afore mentioned revised power purchase quantity for the FY 2020-21.

Commission's Analysis:

6.6.6. The Commission notes that for some of the stations the PPAs are expiring in FY 2021-22 as detailed in below:

Table 229: Treatment of plants whose PPA expires in FY 2020-21

Sr. No	Plant Name	PPA Expiry date	Treatment of power purchase
1	FSTPP – 1 & 2 (502 MW)	July 2021	Power purchase considered till July 2021
2	KHSTPP 1 (352 MW)-	July 2021	Power purchase considered till July 2021
3	Talcher Stage I (412 MW)	June 2021	Power purchase considered till June 2021

6.6.7. Accordingly, from the above stations, the power purchase quantum is estimated considering their expiry date of PPA. The Commission has also noted that the Discoms have approached with proposals to procure 300 MW from SECI Phase-V (Wind) and the approval is under process. It is also observed that with the existing arrangements to purchase Non-solar Renewable Energy, the Discoms are in a position to fulfil the non-solar RPO in FY 2021-22.

6.6.8. The Commission further notes that the Discoms have also proposed to purchase 150 MW from SECI Phase-II (Solar), 300 MW from SECI Phase-III (Solar) and 300 MW from NTPC (Solar). The Commission also notes that, approval from SECI Phase III

(Solar) is under process. However, since there is shortfall in Solar RE for meeting the solar RPO in FY 2021-22, the Commission provisionally considers the power purchase from these three Solar RE sources.

- 6.6.9. Further, the Commission has observed discrepancy between the CoD of new conventional plant additions submitted by SBPDCL and NBPDC. Accordingly, the Commission has considered the COD as submitted by BSHPC during coordination committee meeting, as shown in the Table below:

Table 230: New Plant addition for FY 2020-21 and FY 2021-22 submitted by Petitioners

Sr. No	Plant Name	CoD	Bihar Allocation (MW)
A	Conventional		3172
1	Barh Stage I Unit I	Mar-21	342
2	Barh Stage I Unit II	Nov-21	342
3	Barh Stage I Unit III	Jun-22	342
4	Nabinagar BRBCL Unit IV	Apr-21	24
5	NPGCL Unit II	Apr-21	517
6	NPGCL Unit III	Aug-21	517
7	North Karanpura Unit I	Dec-21	229
8	North Karanpura Unit II	Jun 2022`	229
9	Darlipali STPS Unit I	Mar-20	80
10	Darlipali STPS Unit II	May-21	80
11	BTPS Stage I Unit I	Jan-20	110
12	BTPS Stage I Unit II	Mar-21	110
13	BTPS Stage II Unit II	Mar-21	250
B	Non-Conventional		2,030
1	SECI Phase-II (Solar)	Mar-22	150
2	SECI Phase-III (Solar)	May-21	300
3	NTPC (Solar)	Jun-21	300
4	Torrent Power	Mar-21	49.8
5	Adani Green	Dec-20	50
6	Alfanar	Dec-20	50
7	Adani Green (V)	Oct-21	125
8	Boreas Renewable	Dec-20	175
9	Ostro Kannad	Aug-21	300
10	Morjar Windfarm	Aug-21	50
11	SECI Phase-V	Jan-22	480
	Total		5102

- 6.6.10. To arrive at the power purchase from various Stations/Sources, the Commission has followed the following methodology:-

- i. The Commission has considered the availability of share of power (MW) to Bihar from various Central, State, IPPs, allocated to SBPDCL & NBPDC in the power sharing ratio of 54:46.
- ii. Hydro stations and renewable sources are considered as must run and total power purchase from aforesaid sources are considered as claimed by the Discoms.
- iii. For other conventional sources (including Central Generating Stations, IPPs and State Generating Stations), the Commission notes that the Discoms have estimated Plant Load Factor (PLF) and auxiliary consumptions considering the maintenance schedule notified by ERPC/ERLDC, past trend and CERC norms. Accordingly, the Commission has considered PLF and auxiliary consumptions for each generating station as estimated by the Discoms.
- iv. After satisfying the energy generated from must run sources the remaining energy for the purpose of energy balancing has been met from energy available from other conventional sources duly following the MOD principle.

6.6.11. The Table below provides a detail of capacity share allocation considered for NBPDC and SBPDCL for FY 2021-22:

Table 231: Capacity share allocation for NBPDC and SBPDCL for FY 2021-22 (MW)

Sr No	Particulars	Source	Capacity (MW)	Allocation (%)	Allocation (MW)	NBPDC (@46%) MW	SBPDCL (@54%) MW
I	Central Generating Stations		16,353.60		6,552.44	3,014.11	3,538.30
1	FSTPP I & II	Thermal	1,600.00	31.40%	502.36	231.09	271.28
2	FSTPP III	Thermal	500.00	21.52%	107.60	49.49	58.10
3	KHSTPP I	Thermal	840.00	41.86%	351.61	161.74	189.87
4	KHSTPP II	Thermal	1,500.00	4.98%	74.70	34.36	40.34
5	Barh Stage I Unit I	Thermal	660.00	51.80%	341.88	157.26	184.61
6	Barh Stage I Unit II	Thermal	660.00	51.80%	341.88	157.26	184.61
7	Barh Stage II	Thermal	1,320.00	90.74%	1,197.72	550.95	646.77
8	Nabinagar (BRBCL) Unit I - III	Thermal	750.00	10.00%	75.00	34.50	40.50
9	Nabinagar (BRBCL) Unit IV	Thermal	250.00	10.00%	25.00	11.50	13.50
10	Talcher Stage I	Thermal	1,000.00	41.25%	412.45	189.73	222.73
11	KBUNL Stage II	Thermal	390.00	74.97%	292.39	134.50	157.89
12	NPGL Unit I	Thermal	660.00	84.77%	559.46	257.35	302.11
13	NPGL Unit II	Thermal	660.00	84.77%	559.46	257.35	302.11
14	NPGL Unit III	Thermal	660.00	84.77%	559.46	257.35	302.11
15	North Karanpura Unit I	Thermal	660.00	34.75%	229.35	105.50	123.85
16	Darlipali STPS Unit I	Thermal	800.00	11.86%	94.87	43.64	51.23
17	Darlipali STPS Unit II	Thermal	800.00	11.86%	94.87	43.64	51.23
18	Chuka	Hydro	333.60	23.98%	80.00	36.80	43.20
19	Rangit	Hydro	60.00	35.00%	21.00	9.66	11.34
20	Tala	Hydro	1,020.00	25.25%	257.50	118.45	139.05
21	Teesta	Hydro	510.00	21.26%	108.43	49.88	58.55
22	Mangdechhu	Hydro	720.00	36.87%	265.46	122.11	143.35

Sr · No	Particulars	Source	Capacity (MW)	Allocation (%)	Allocation (MW)	NBPDC @46% MW	SBPDCL @54% MW
II	State Generating Stations		994.30		994.30	457.38	536.92
1	BSPHC	Hydro	54.30	100.00 %	54.30	24.98	29.32
2	KBUNL Stage I	Thermal	220.00	100.00 %	220.00	101.20	118.80
3	BTPS Stage I Unit I	Thermal	110.00	100.00 %	110.00	50.60	59.40
4	BTPS Stage I Unit II	Thermal	110.00	100.00 %	110.00	50.60	59.40
5	BTPS Stage II Unit I	Thermal	250.00	100.00 %	250.00	115.00	135.00
6	BTPS Stage II Unit II	Thermal	250.00	100.00 %	250.00	115.00	135.00
III	IPPs		2,250.00		488.00	224.48	263.52
1	GMR	Thermal	1,050.00	24.76%	260.00	119.60	140.40
2	JITPL	Thermal	1,200.00	19.00%	228.00	104.88	123.12
IV	Renewables		2,731.40		2,731.40	1,256.44	1,474.95
1	M/s Sunmark Energy Projects Limited (Formerly MBCEL)	Solar	10.00	100.00 %	10.00	4.60	5.40
2	M/s Response renewable Energy Ltd, Kolkata.	Solar	10.00	100.00 %	10.00	4.60	5.40
3	M/s Avantika Contractors Ltd., Hyderabad	Solar	5.00	100.00 %	5.00	2.30	2.70
4	M/s Glatt Solutions Pvt. Ltd, Kolkata.	Solar	3.00	100.00 %	3.00	1.38	1.62
5	Alfa Infraprop Pvt. Ltd.	Solar	20.00	100.00 %	20.00	9.20	10.80
6	Udipta Energy & Equipment Pvt. Ltd.	Solar	5.00	100.00 %	5.00	2.30	2.70
7	Azure Power India Pvt. Ltd.	Solar	10.00	100.00 %	10.00	4.60	5.40
8	Welspun Renewables Project - I	Solar	10.00	100.00 %	10.00	4.60	5.40
9	Welspun Renewables Project - II	Solar	15.00	100.00 %	15.00	6.90	8.10
10	Welspun Renewables Project - III	Solar	15.00	100.00 %	15.00	6.90	8.10
11	Acme Cleantech Project (Nalanda)	Solar	15.00	100.00 %	15.00	6.90	8.10
12	Acme Cleantech Project (Magadh)	Solar	10.00	100.00 %	10.00	4.60	5.40
13	Solar Energy Corporation of India Ltd., Government of India	Solar	10.00	100.00 %	10.00	4.60	5.40
14	SECI Phase-II	Solar	150.00	100.00 %	150.00	69.00	81.00
15	SECI Phase-III	Solar	300.00	100.00 %	300.00	138.00	162.00
16	NTPC ISTS Solar	Solar	300.00	100.00 %	300.00	138.00	162.00
17	Wind ISTS Scheme Tranche I	Non	200.00	100.00	200.00	92.00	108.00

Sr · No	Particulars	Source	Capacity (MW)	Allocation (%)	Allocation (MW)	NBDCL @46%) MW	SBPDCL (@54%) MW
	(PTC) (Green Infra, Inox, Mytrah & Ostro)	Solar		%			
18	Wind ISTS Scheme Tranche II (SECI) (Orange)	Non Solar	100.00	100.00 %	100.00	46.00	54.00
19	SECI Phase-III Wind						-
	SECI Green Infra	Non Solar	100.00	100.00 %	100.00	46.00	54.00
	Torrent Power	Non Solar	49.80	100.00 %	49.80	22.91	26.89
	Adani Green	Non Solar	50.00	100.00 %	50.00	23.00	27.00
	Alfanar	Non Solar	50.00	100.00 %	50.00	23.00	27.00
	Betam	Non Solar	50.20	100.00 %	50.20	23.09	27.11
20	SECI Phase-V Wind						-
	Adani Green (V)	Non Solar	125.00	100.00 %	125.00	57.50	67.50
	Boreas Renewable	Non Solar	175.00	100.00 %	175.00	80.50	94.50
21	SECI Phase-VI Wind						-
	Ostro Kannad	Non Solar	300.00	100.00 %	300.00	138.00	162.00
	Morjar Windfarm	Non Solar	50.00	100.00 %	50.00	23.00	27.00
22	SECI Phase-V	Solar	480.00	100.00 %	480.00	220.80	259.20
23	New Swadeshi Sugar Mill, Narkataganj	Non Solar	10.00	100.00 %	10.00	4.60	5.40
24	Hasanpur Sugar Mill, Dalsinghsarai	Non Solar	14.50	100.00 %	14.50	6.67	7.83
25	Bharat Sugar Mills, Sidhwalia, Gopalganj	Non Solar	15.00	100.00 %	15.00	6.90	8.10
26	Hari Nagar Sugar Mills, Hari Nagar, West Champaran	Non Solar	14.50	100.00 %	14.50	6.67	7.83
27	HPCL Biofuels Ltd., Sugauli, East Champaran	Non Solar	20.00	100.00 %	20.00	9.20	10.80
28	HPCL Biofuels Ltd., Lauria, West Champaran	Non Solar	20.00	100.00 %	20.00	9.20	10.80
29	Riga Sugar Company Ltd.	Non Solar	3.00	100.00 %	3.00	1.38	1.62
30	Siddhashram Rice Mill Cluster Pvt ltd	Non Solar	1.00	100.00 %	1.00	0.46	0.54
31	Bihar Distillers & Bottlers Pvt ltd	Non Solar	9.40	100.00 %	9.40	4.32	5.07
32	Tirupati Sugar	Non Solar	6.00	100.00 %	6.00	2.76	3.24
V	Others		-		239.13	110.00	129.13
1	PTC JITPL		-		149.46	68.75	80.71
2	PTC SKS Power		-		89.67	41.25	48.42
	Total		22,329.30		11,005.27	5,062.41	5,942.83

6.6.12. The following Table shows the details of Merit Order Dispatch approved for FY 2021-22 while estimating the power purchase requirement for FY 2021-22:

Table 232: Merit Order Dispatch considered by the Commission for FY 2021-22

Sr. No	Particulars	Source	Mode of Dispatch	Energy Charges
1	Darlipali STPS Unit I	Thermal	Merit	1.04
2	Darlipali STPS Unit II	Thermal	Merit	1.04
3	JITPL	Thermal	Merit	1.09
4	Teesta	Hydro	Must run	1.16
5	GMR	Thermal	Merit	1.20
6	Rangit	Hydro	Must run	1.91
7	North Karanpura Unit I	Thermal	Merit	2.01
8	NPGL Unit II	Thermal	Merit	2.01
9	NPGL Unit III	Thermal	Merit	2.01
10	NPGL Unit I	Thermal	Merit	2.01
11	Talcher Stage I	Thermal	Merit	2.02
12	KHSTPP II	Thermal	Merit	2.07
13	Tala	Hydro	Must run	2.16
14	KHSTPP I	Thermal	Merit	2.19
15	SECI Green Infra	Non Solar	Must run	2.22
16	Chuka	Hydro	Must run	2.40
17	BSPHC	Hydro	Must run	2.41
18	Nabinagar (BRBCL) Unit I - III	Thermal	Merit	2.43
19	Nabinagar (BRBCL) Unit IV	Thermal	Merit	2.43
20	SECI Phase-II	Solar	Must run	2.51
21	Betam	Non Solar	Must run	2.52
22	SECI Phase-III	Solar	Must run	2.62
23	NTPC	Solar	Must run	2.67
24	Barh Stage I Unit I	Thermal	Merit	2.68
25	Barh Stage I Unit II	Thermal	Merit	2.68
26	Barh Stage II	Thermal	Merit	2.68
27	SECI Phase-V	Solar	Must run	2.69
28	KBUNL Stage II	Thermal	Merit	2.70
29	Wind ISTS Scheme Tranche II (SECI) (Orange)	Non Solar	Must run	2.71
30	Torrent Power	Non Solar	Must run	2.71
31	Alfanar	Non Solar	Must run	2.71
32	Adani Green	Non Solar	Must run	2.72
33	FSTPP III	Thermal	Merit	2.72
34	FSTPP I & II	Thermal	Merit	2.76
35	BTPS Stage II Unit I	Thermal	Merit	2.82
36	BTPS Stage II Unit II	Thermal	Merit	2.82

Sr. No	Particulars	Source	Mode of Dispatch	Energy Charges
37	Boreas Renewable	Non Solar	Must run	2.83
38	Adani Green (V)	Non Solar	Must run	2.83
39	Ostro Kannad	Non Solar	Must run	2.89
40	Morjar Windfarm	Non Solar	Must run	2.89
41	BTPS Stage I Unit I	Thermal	Merit	3.16
42	BTPS Stage I Unit II	Thermal	Merit	3.16
43	PTC SKS Power	Thermal	Merit	3.18
44	KBUNL Stage I	Thermal	Merit	3.34
45	Wind ISTS Scheme Tranche I (PTC) (Green Infra, Inox, Mytrah & Ostro)	Non Solar	Must run	3.53
46	Bharat Sugar Mills, Sidhwalia, Gopalganj	Non Solar	Must run	3.54
47	PTC JITPL	Thermal	Merit	4.14
48	Mangdechu	Hydro	Must run	4.19
49	New Swadeshi Sugar Mill, Narkataganj	Non Solar	Must run	5.08
50	Solar Energy Corporation of India Ltd., Government of India	Solar	Must run	5.50
51	HPCL Biofuels Ltd., Lauria, West Champaran	Non Solar	Must run	5.57
52	Hari Nagar Sugar Mills, Hari Nagar, West Champaran	Non Solar	Must run	5.57
53	HPCL Biofuels Ltd., Sugauli, East Champaran	Non Solar	Must run	5.57
54	M/s Response renewable Energy Ltd, Kolkata.	Solar	Must run	5.67
55	M/s Sunmark Energy Projects Limited (Formerly MBCEL)	Solar	Must run	5.67
56	M/s Glatt Solutions Pvt. Ltd, Kolkata.	Solar	Must run	5.67
57	Hasanpur Sugar Mill, Dalsinghsarai	Non Solar	Must run	6.22
58	Riga Sugar Company Ltd.	Non Solar	Must run	6.26
59	Tirupati Sugar	Non Solar	Must run	6.34
60	Bihar Distillers & Bottlers Pvt ltd	Non Solar	Must run	6.36
61	Siddhashram Rice Mill Cluster Pvt ltd	Non Solar	Must run	7.39
62	M/s Avantika Contractors Ltd., Hyderabad	Solar	Must run	7.69
63	Alfa Infraprop Pvt. Ltd.	Solar	Must run	7.87
64	Udipta Energy & Equipment Pvt. Ltd.	Solar	Must run	7.98
65	Azure Power India Pvt. Ltd.	Solar	Must run	8.39
66	Welspun Renewables Project – III	Solar	Must run	8.56
67	Welspun Renewables Project – II	Solar	Must run	8.64
68	Welspun Renewables Project - I	Solar	Must run	8.70

Sr. No	Particulars	Source	Mode of Despatch	Energy Charges
69	Acme Cleantech Project (Nalanda)	Solar	Must run	8.73
70	Acme Cleantech Project (Magadh)	Solar	Must run	8.73

6.6.13. Based on above MOD despatch and considering the energy availability as claimed by the Discoms, the Commission has worked out the power purchase requirement as shown in the Table below:

Table 233: Power Purchase quantum approved for NBPDC for FY 2021-22

Sr No	Name of The Source	Share allocation (MW)	Units Claimed (MUs)	Unit Considered (MUs)	Surplus Units (MUs)
A	MOD sources				
1	Darlipali STPS Unit I	43.64	174.36	174.36	
2	Darlipali STPS Unit II	43.64	174.36	174.36	
3	JITPL	104.88	417.62	417.62	
4	GMR	119.60	656.19	656.19	
5	North Karanpura Unit I	105.50	115.96	115.96	
6	NPGCL Unit II	257.35	1137.63	1137.63	
7	NPGCL Unit III	257.35	662.06	662.06	
8	NPGCL Unit I	257.35	1694.15	1694.15	
9	Talcher Stage I	189.73	818.13	818.13	
10	KHSTPP II	34.36	198.91	198.91	
11	KHSTPP I	161.74	713.02	713.02	
12	Nabinagar (BRBCL) Unit I - III	34.50	146.68	146.68	
13	Nabinagar (BRBCL) Unit IV	11.50	45.01	45.01	
14	Barh Stage I Unit I	157.26	695.20	695.20	
15	Barh Stage I Unit II	157.26	231.73	231.73	
16	Barh Stage II	550.95	2808.41	2500.60	307.81
17	KBUNL Stage II	134.50	443.25		443.25
18	FSTPP III	49.49	264.50		264.50
19	FSTPP I & II	231.09	1018.74		1,018.74
20	BTPS Stage II Unit I	115.00	378.99		378.99
21	BTPS Stage II Unit II	115.00	380.02		380.02
22	BTPS Stage I Unit I	50.60	166.75		166.75
23	BTPS Stage I Unit II	50.60	167.21		167.21
24	KBUNL Stage I	101.20	333.51		333.51
25	PTC JITPL	68.75	125.93		125.93
26	PTC SKS Power	41.25	77.45		77.45
	Sub Total (A)	3444.10	14045.75	10381.60	3664.15
B	Must-Run Sources				
27	Teesta	49.88	270.27	270.27	

Sr No	Name of The Source	Share allocation (MW)	Units Claimed (MUs)	Unit Considered (MUs)	Surplus Units (MUs)
28	Rangit	9.66	55.50	55.50	
29	Tala	118.45	455.50	455.50	
30	Chuka	36.80	196.58	196.58	
31	BSPHCL	24.98	27.60	27.60	
32	Mangdechu	122.11	491.12	491.12	
33	Renewables	1,256.44	2,296.49	2,296.49	
	Sub-total (B)	1,618.32	3,793.05	3,793.05	
C	Total (A+B)	5,062.42	17,838.81	14,174.65	3,664.15

Table 234: Power Purchase quantum approved for SBPDCL for FY 2021-22

Sr No	Name of The Source	Share allocated (MW)	Units claimed (MUs)	Unit Considered (MUs)	Surplus power (MUs)
A	MOD sources				
1	Darlipali STPS Unit I	51.24	204.68	204.68	
2	Darlipali STPS Unit II	51.24	204.68	204.68	
3	JITPL	123.12	490.25	490.25	
4	GMR	140.40	770.31	770.31	
5	North Karanpura Unit I	123.85	136.12	136.12	
6	NPGCL Unit II	302.11	1,335.48	1,335.48	
7	NPGCL Unit III	302.11	777.20	777.20	
8	NPGCL Unit I	302.11	1,988.78	1,988.78	
9	Talcher Stage I	222.73	960.41	960.41	
10	KHSTPP II	40.34	233.50	233.50	
11	KHSTPP I	189.87	837.03	837.03	
12	Nabinagar (BRBCL) Unit I - III	40.50	172.19	172.19	
13	Nabinagar (BRBCL) Unit IV	13.50	52.84	52.84	
14	Barh Stage I Unit I	184.62	816.10	816.10	
15	Barh Stage I Unit II	184.62	272.03	272.03	
16	Barh Stage II	646.77	3,296.83	2,820.69	476.14
17	KBUNL Stage II	157.89	520.33		520.33
18	FSTPP III	58.10	310.50		310.50
19	FSTPP I & II	271.28	1,195.92		1,195.92
20	BTPS Stage II Unit I	135.00	444.90		444.90
21	BTPS Stage II Unit II	135.00	446.12		446.12
22	BTPS Stage I Unit I	59.40	195.75		195.75
23	BTPS Stage I Unit II	59.40	196.29		196.29
24	KBUNL Stage I	118.80	391.51		391.51
25	PTC JITPL	-	147.83		147.83
26	PTC SKS Power	-	90.91		90.91

Sr No	Name of The Source	Share allocated (MW)	Units claimed (MUs)	Unit Considered (MUs)	Surplus power (MUs)
	Sub-Total A	3,913.95	16,488.49	12,072.29	4,416.20
B	Must-Run Sources				
27	Teesta	58.55	317.27	317.27	
28	Rangit	11.34	65.15	65.15	
29	Tala	139.05	534.71	534.71	
30	Chuka	43.20	230.76	230.76	
31	BSPHCL	29.32	32.40	32.40	
32	Mangdechu	143.35	576.54	576.54	
33	Renewables	1,474.95	2,695.88	2,695.88	
	Sub-total (B)	1,899.75	4,452.72	4,452.72	-
C	Total (A+B)	5,813.70	20,941.21	16,525.01	4,416.20

6.6.14. From the above, it can be inferred that the Discoms have projected higher power purchase requirement for FY 2021-22. This can also be validated from the energy availability as submitted by Discoms wherein they have estimated availability of surplus power at State Periphery. However, as against this the Commission has projected the power purchase quantum wherein the power purchase quantum is reduced to the approved requirement at the regional periphery duly following Merit Order Principle (MOD).

6.6.15. As regard to surplus power, the Discoms have liberty to sell it in open market or through any other arrangement within the purview of respective PPAs/Regulations etc. and recover the fixed and variable charges. However, at the same time Discoms need to ensure the availability in the State should not hamper.

6.7. Energy Balance

NBPDCCL & SBPDCL's Submission:

6.7.1. Discoms have submitted the energy balance for FY 2021-22 as given in the Table below:

Table 235: Energy Balance Projected by Petitioners for FY 2021-22

Sl. No	Particulars	Unit	SBPDCL		NBPDCCL	
			Approved in MYT Order Dated 25.02.2019	Projected FY 2021-22	Approved in MYT Order Dated 25.02.2019	Projected FY 2021-22
A	Energy Requirement					
1	Energy sales	MU	18,397	13,428	16,171	11,545
2	Less: Inter-state sales, DF &	MU		-	1,657	152

Sl. No	Particulars	Unit	SBPDCL		NBPDC	
			Approved in MYT Order Dated 25.02.2019	Projected FY 2021-22	Approved in MYT Order Dated 25.02.2019	Projected FY 2021-22
	Nepal if any					
3	Energy sales excluding Inter-state sales, if any	MU	18396.76	13,428	14,514	11,393
4	Distribution Loss	%	15%	22%	15%	20%
5	Add: Distribution Loss	MU	5431.70	3,787	4,323	2,848
6	Total energy required at Distribution periphery	MU	21,643	17,215	17,075	14,241
7	Add: Inter-state sales & Nepal if any	MU	0	-	1,657	152
8	Total energy required at Distribution periphery including Inter-state sales	MU	21,643	17,215	18,732	14,393
9	State Transmission Loss	%	3.92%	3.00%	3.92%	3.00%
10	Add: State Transmission Loss	MU	883.03	532	764.25	445
11	Total energy required at State Transmission periphery	MU	22,526	17,748	19,496	14,838
B	Energy Available					
1	Total Power Purchase from CGS,IPPS,JV's, SGS etc.	MU	22,923	20,941	19,841	17,839
2	Power Purchase from CGS and Others from Outside the State	MU	17,551	16,538.36	15,278	14,088
3	Central Transmission Loss	%	2.26%	1.73%	2.26%	1.73%
4	Central Transmission Loss	MU	396.66	281.98	345.28	240.21
5	Power Purchase from SGS, RE's, etc., within the State	MU	5,372	4,403	4,564	3,751
6	Net Power Purchase Available	MU	22,526	20,659.22	19,496	17,598.60
7	Energy Surplus/(Deficit) at State Transmission Periphery	MU	0	2,911.31	0	2,760.65

Commission's Analysis:

- 6.7.2. The Commission noted that in the above Table, the DISCOMs have computed the energy requirement considering the distribution loss at 22% and 20% each for SBPDCL and NBPDC, respectively, as against 15% approved by the Commission in its Order dated 25 February, 2019. The Commission has considered distribution loss of 15% for FY 2021-22 as approved in this Order for FY 2021-22.
- 6.7.3. Further, the Commission has considered STU losses and CTU losses as approved in this Order for FY 2021-22.
- 6.7.4. Accordingly, the details of energy requirement, energy availability during FY 2021-22 are as shown in the Table below:

Table 236: Energy Requirement Computed with approved sales and losses for FY 2021-22

Sr No	Particulars	Unit	SBPDCL	NBPDC	Total
A	Energy Requirement				
1	Energy sales	MU	13,428.07	11,544.57	24,972.65
2	Less: Inter-state sales	MU	-	151.613	151.61
3	Energy sales excluding Inter-state sales	MU	13,428.07	11,392.96	24,821.04
4	Distribution Loss	%	15.00%	15.00%	
5	Add: Distribution Loss	MU	2,369.66	2,010.52	4,380.18
6	Total energy required at Distribution periphery	MU	15,797.73	13,403.48	29,201.22
7	Add: Inter-state sales	MU	-		
7	Total energy required at Distribution periphery	MU	15,797.73	13,403.48	29,201.22
8	State Transmission Loss	%	3.00%	3.00%	
9	Add: State Transmission Loss	MU	488.59	414.54	903.13
10	Total energy required at State Transmission Periphery	MU	16,286.32	13,818.02	30,104.35
11	Add: Inter-state sales		-	151.613	151.61
12	Total energy required at State Transmission Periphery	MU	16,286.32	13,969.64	30,255.96
B	Energy Available				
1	From Central Sector	MU	12,536.17	10,776.75	23,312.93
2	From IPP	MU	1,260.56	1,073.81	2,334.36
3	From State Generating Stations	MU	32.40	27.60	59.99
4	From Renewable Sources	MU	2,695.88	2,296.49	4,992.38
5	UI (Net)	MU	-	-	-
6	Others(please specify)	MU	-	-	-
7	CTU losses	%	1.73%	1.73%	
8	CTU Losses	MU	238.68	205.01	443.70
9	Net power available at State periphery (1+2+3+4+5+6-8)	MU	16,286.32	13,969.64	30,255.96
C	Energy Surplus/(Deficit) at State Periphery	MU	-	-	-

6.8. Renewable Power Purchase Obligation (RPO)

NBPDCCL & SBPDCL's Submission:

- 6.8.1. Discoms have submitted that they have already taken steps to enhance their Renewable Energy mix and accordingly have anticipated addition in Solar and Non-solar power in FY 2021-22 as given in the Table below:

Table 237: RPO projected by Discoms for FY 2021-22

Particular		Units	NBPDCCL	SBPDCL
Energy Sale (excluding interstate sales)	A	MUs	11,544.57	13,428.07
Hydro Power Purchase	B	MUs	1,468.96	1,724.44
Inter-State Transmission Loss	C	%	0.02	0.02
Inter-State Transmission Loss	$D=B*C$	MUs	25.41	29.83
Intra-State Transmission Loss	E	%	0.03	0.03
Intra-State Transmission Loss	$F=E*(B-D)$	MUs	43.31	50.84
Distribution Loss	G	%	0.20	0.22
Distribution Loss	$H=G*(B-D-F)$	MUs	280.05	361.63
Hydro Power Consumed	$I=B-D-F-H$	MUs	1,120.19	1,282.14
Conventional Power Consumed	$J=A-I$	MUs	10,424.38	12,145.93
RPO Targets		%	0.17	0.17
Solar RPO %	K	%	0.08	0.08
Non-Solar RPO %	L	%	0.09	0.09
RPO Targets		MUs	1,772.14	2,064.81
Solar RPO	$J*K$	MUs	833.95	971.67
Non-Solar PRO	$J*L$	MUs	938.19	1,093.13
Renewable Power Purchase		MUs	1,805.47	2,728.28
Solar Power Purchased		MUs	204.13	848.44
Non-Solar Power Purchased		MUs	1,601.34	1,879.84
Captive Consumption Solar		MUs	12.86	17.89
BREDA Off-grid solar		MUs	3.15	5.09
BREDA GCRT solar		MUs	0.85	0.39
DDG Standalone		MUs	1.70	2.27
DDG Mini grid		MUs	2.43	2.89
IPDS		MUs	0.51	0.57
Net/Gross Meter Consumer		MUs	3.37	4.91
SPV Plant Solar Generation		MUs	0.85	1.76
Captive Consumption Non-Solar BERDA		MUs	78.62	92.29
REC Purchase		MUs	-	-

Particular	Units	NBPDC	SBPDCL
Solar	MUs	-	-
Non-Solar	MUs	-	-
Total Solar RPO Compliance	MUs	216.99	866.33
Total Non-Solar RPO Compliance	MUs	1,679.96	1,972.12
RPO Shortfall	MUs	(124.81)	(773.64)
Solar Shortfall/ (Surplus)	MUs	616.96	105.34
Non-Solar Shortfall/ (Surplus)	MUs	(741.77)	(878.99)
Carried Forward Shortfall from FY 2019-20	MUs	431.81	447.67
Carried Forward Solar Shortfall	MUs	651.82	766.35
Carried Forward Non-Solar Shortfall	MUs	(220.01)	(318.68)
Total Shortfall	MUs	307.00	(325.97)
Solar Shortfall	MUs	1,268.78	871.69
Non-Solar Shortfall	MUs	(961.78)	(1,197.67)

- 6.8.2. The Petitioner submitted that, it may not be able to fulfil individual RPO targets for Solar and Non-solar, however, the overall target of RPO will be fully achieved by the Discoms and the Discoms will be in surplus.
- 6.8.3. The Petitioner further submits that it has entered into PPAs with SECI & NTPC for purchase of renewable power (Solar and Non-Solar) to the tune of 2,000 MW which were expected to be in commercial operation by FY 2020-21. However, the plants have extended their SCD date in FY 2021-22 (majorly in the second half of FY 2021-22) owing to various technical and commercial reasons one of which is the impact of COVID-19. The Petitioner had planned its power purchase in FY 2021-22 as per the original SCD of the upcoming plants. However, due to the extension in SCD of the renewable plants, the planning of the petitioner is less likely to materialize and therefore, a huge shortfall can be observed in fulfilling its RPO obligation.
- 6.8.4. The Discoms therefore requested the Commission to not penalize the them for parameters which are uncontrollable in nature for the Discoms.
- 6.8.5. for FY 2021-22 may please be revised based on actual RE purchase of the Discoms and the Discoms should not be burdened with additional cost of purchase of RECs. The Discoms further reiterated that all the related factors restricting the Discoms in fulfilling the set RPO target are uncontrollable in nature.

Commission's Analysis:

- 6.8.6. The details of Renewable Energy (RE) to be procured as per RPO Regulations, RE procured by the DISCOMs, and the balance RE to be procured are given in the Table below:-

Table 238: RPO Approved for Discoms for FY 2021-22

Particular		Units	NBDCL	SBPDCL
Energy Sale (excluding interstate sales)	A	MUs	11544.57	13428.07
Hydro Power Purchase	B	MUs	1468.96	1724.44
Inter-State Transmission Loss	C	%	1.73%	1.73%
Inter-State Transmission Loss	$D=B*C$	MUs	25.41	29.83
Intra-State Transmission Loss	E	%	3.00%	3.00%
Intra-State Transmission Loss	$F=E*(B-D)$	MUs	43.31	50.84
Distribution Loss	G	%	15.00%	15.00%
Distribution Loss	$H=G*(B-D-F)$	MUs	210.04	246.56
Hydro Power Consumed	$I=B-D-F-H$	MUs	1190.21	1397.20
Conventional Power Consumed	$J=A-I$	MUs	10354.37	12030.87
RPO Targets		%	17.00%	17.00%
Solar RPO %	K	%	8.00%	8.00%
Non-Solar RPO %	L	%	9.00%	9.00%
RPO Targets		MUs	1760.24	1848.92
Solar RPO	$J*K$	MUs	828.35	870.08
Non-Solar PRO	$J*L$	MUs	931.89	978.84
Renewable Power Purchase		MUs	2324.09	2728.28
Solar Power Purchased		MUs	623.48	731.91
Non-Solar Power Purchased		MUs	1700.61	1996.37
Captive Consumption Solar		MUs	9.71	12.79
BREDA Off-grid solar		MUs	0.00	0.00
BREDA GCRT solar		MUs	0.85	0.39
DDG Standalone		MUs	1.70	2.27
DDG Mini grid		MUs	2.43	2.89
IPDS		MUs	0.51	0.57
Net/Gross Meter Consumer		MUs	3.37	4.91
SPV Plant Solar Generation		MUs	0.85	1.76
Captive Consumption Non-Solar BERDA		MUs	74.00	92.29
REC Purchase		MUs	-	-
Solar		MUs	0.00	0.00
Non-Solar		MUs	0.00	0.00
Total Solar RPO Compliance		MUs	633.19	744.70
Total Non-Solar RPO Compliance		MUs	1774.61	2088.66
RPO Shortfall		MUs		
Solar Shortfall/ (Surplus)		MUs	195.16	125.38
Non-Solar Shortfall/ (Surplus)		MUs	(842.72)	(1109.82)
Carried Forward Shortfall from FY 2019-20		MUs		
Carried Forward Solar Shortfall		MUs	501.75	604.39

Particular	Units	NBPDCCL	SBPDCL
Carried Forward Non-Solar Shortfall	MUs	(204.13)	(229.86)
Total Shortfall	MUs		
Solar Shortfall	MUs	696.91	729.77
Non-Solar Shortfall	MUs	(1046.85)	(1339.69)

- 6.8.7. The Commission observes that the solar RPO Compliance of both SBPDCL and NBPDCCL are less than 85% as shown in the above Table. Further, the shortfall in solar RPO cannot be adjusted from the surplus of Non-solar RPO in accordance with the 3rd amendment to clause 4 of the BERC (Renewable Purchase Obligation, its compliance and REC Framework Implementation) Regulations, 2010.
- 6.8.8. The Commission notes that that despite of repetitive directions the Discoms have not been able to achieve their RPO obligations as set out by the Commission and have sought for either relaxation or carry forward of the same from time to time. Such practice of Discoms are not at all acceptable.
- 6.8.9. BSPHCL on behalf of Discoms has filed an instant Petition wherein it has prayed to carry forward the shortfall of RPO for FY 2019-20 into FY 2020-21 on account of difficulty faced due to COVID-19 outbreak. The Commission vide its Order dated 17 June, 2020 in Case No. 12 of 2020 has allowed the request of the Discoms for carry forward of RPO. The Commission has further observed that the Discoms have not been able to achieve their RPO obligations for FY 2020-21, as detailed in Para xxx of this Order. Accordingly, due to reasons detailed in Para xxx of this Order, the Commission has allowed the Petitioners to carry forward the shortfall in RPO of FY 2020-21 to FY 2021-22.
- 6.8.10. In view of RPO shortfall for consecutive years, the Commission expresses its concern that even for FY 2021-22, the Discoms have proposed RPO shortfall without even considering any option to meet the cumulative RPO shortfall till FY 2021-22. Although, the Commission notes the submissions of Discoms regarding delay in SCD of with SECI & NTPC plants (Wind and Solar) with whom Discoms had entered into PPA for purchase of renewable power (Solar and Non-Solar) to the tune of 2,000 MW. Discoms have submitted these plants were expected to be in commercial operation by FY 2020-21, however, due to various technical and commercial reasons one of which is the impact of COVID-19, the SCD date of these plants have extended in FY 2021-22 (majorly in the second half of FY 2021-22).
- 6.8.11. Since the SCD of these plants is expected in second half of FY 2021-22, the Commission is of the view that the Discoms might be able to meet the RPO requirement through SECI and NTPC plants in future year. Also, additional capacity required for meeting the RPO requirement could be tied up in FY 2021-22.
- 6.8.12. **The Commission hereby directs the DISCOMs to put forth more efforts to procure the balance solar energy required to meet the RPO requirements as detailed in the**

Table above. No further relaxation shall be accorded in RPO obligations whatsoever. Further, considering the cheaper Renewable Power available/discovered through various competitive biddings, the Discoms are advised to opt for Renewable Power instead of REC purchase to optimize the power purchase cost.

6.9. Power Purchase Cost

NBPDC & SBPDCL's Submission:

- 6.9.1. The power purchase cost mainly comprises of fixed charges and energy charges for two part tariff stations i.e. NTPC, NHPC & PTC in case of Petitioner. The Petitioner has considered the actual energy charges and fixed cost for existing power stations based on previous 12 months data and assumptions explained in previous chapter. The Discoms have considered the upcoming conventional power purchase cost as per MYT Order approved for the FY 2021-22. For Non-Conventional, it has considered as per tariff discovered.
- 6.9.2. Power Purchase Cost projected by the Discoms for FY 2021-22 are as given in Tables below:

Table 239: Power Purchase Cost projected by NBPDC for FY 2021-22

Name of The Source	MW	MUs	Fixed Charges (Rs Crore)	Energy Charges (Rs Crore)	Other Costs (Rs Crore)	Total Cost (Rs Crore)	Avg. Tariff (Rs/kWh)
Central Generating Stations	3,538.32	15,039.06	2,846.30	3,567.35	-	6,413.65	4.26
FSTPP I & II	271.28	1,195.92	129.87	330.37	-	460.23	3.85
FSTPP III	58.1	310.5	49.94	84.52	-	134.47	4.33
KHSTPP I	189.87	837.03	94.99	183.33	-	278.32	3.33
KHSTPP II	40.34	233.5	25.7	48.43	-	74.13	3.17
Barh Stage I Unit I	184.62	816.1	196.73	218.97	-	415.7	5.09
Barh Stage I Unit II	184.62	272.03	65.58	72.99	-	138.57	5.09
Barh Stage II	646.77	3,296.83	794.75	884.57	-	1,679.33	5.09
Nabinagar (BRBCL) Unit I - III	40.5	172.19	62.91	41.86	-	104.77	6.08
Nabinagar (BRBCL) Unit IV	13.5	52.84	19.3	12.85	-	32.15	6.08
Talcher Stage I	222.73	960.41	86.44	193.58	-	280.02	2.92
KBUNL Stage II	157.89	520.33	171.74	140.27	-	312.01	6
NPGCL Unit I	302.11	1,988.78	478.21	399.5	-	877.71	4.41
NPGCL Unit II	302.11	1,335.48	321.12	268.27	-	589.39	4.41

Name of The Source	MW	MUs	Fixed Charges (Rs Crore)	Energy Charges (Rs Crore)	Other Costs (Rs Crore)	Total Cost (Rs Crore)	Avg. Tariff (Rs/kWh)
NPGCL Unit III	302.11	777.2	186.88	156.12	-	343	4.41
North Karanpura Unit I	123.85	136.12	32.73	27.34	-	60.07	4.41
Darlipali STPS Unit I	51.24	204.68	44.36	21.29	-	65.65	3.21
Darlipali STPS Unit II	51.24	204.68	44.36	21.29	-	65.65	3.21
Chuka	43.2	230.76	-	55.42	-	55.42	2.4
Rangit	11.34	65.15	12.07	12.41	-	24.48	3.76
Tala	139.05	534.71	-	115.5	-	115.5	2.16
Teesta	58.55	317.27	28.61	36.9	-	65.51	2.06
Mangdechu	143.35	576.54	-	241.57	-	241.57	4.19
						-	
State Generating Stations	536.92	1,706.96	526.09	513.56	-	1,039.65	6.09
BSPHC	29.32	32.4	-	7.81	-	7.81	2.41
KBUNL Stage I	118.8	391.51	129.22	130.82	-	260.04	6.64
BTPS Stage I Unit I	59.4	195.75	60.55	61.78	-	122.33	6.25
BTPS Stage I Unit II	59.4	196.29	60.72	61.95	-	122.66	6.25
BTPS Stage II Unit I	135	444.9	137.61	125.43	-	263.04	5.91
BTPS Stage II Unit II	135	446.12	137.99	125.77	-	263.76	5.91
						-	
IPPs	263.52	1,260.56	281.07	145.64	50.75	477.46	3.79
GMR	140.4	770.31	144.09	92.21	57.36	293.66	3.81
JITPL	123.12	490.25	136.98	53.44	-6.61	183.81	3.75
						-	
Renewables	1,474.96	2,695.88	-	889.7	-	889.7	3.3
M/s SunmarkEnergy Projects Limited (Formerly MBCEL)	5.4	8.92	-	5.06	-	5.06	5.67
M/s Response renewable Energy Ltd, Kolkata.	5.4	8.92	-	5.06	-	5.06	5.67
M/s Avantika Contractors Ltd., Hyderabad	2.7	4.46	-	3.43	-	3.43	7.69
M/s Glatt Solutions Pvt. Ltd, Kolkata.	1.62	2.68	-	1.52	-	1.52	5.67
Alfa Infraprop Pvt. Ltd.	10.8	17.84	-	14.04	-	14.04	7.87
Udipta Energy & Equipment Pvt. Ltd.	2.7	4.46	-	3.56	-	3.56	7.98
Azure Power India Pvt. Ltd.	5.4	8.92	-	7.48	-	7.48	8.39
Welspun Renewables Project - I	5.4	8.92	-	7.76	-	7.76	8.7
Welspun Renewables Project – II	8.1	13.38	-	11.56	-	11.56	8.64
Welspun Renewables Project –	8.1	13.38	-	11.45	-	11.45	8.56

Name of The Source	MW	MUs	Fixed Charges (Rs Crore)	Energy Charges (Rs Crore)	Other Costs (Rs Crore)	Total Cost (Rs Crore)	Avg. Tariff (Rs/kWh)
III							
Acme Cleantech Project (Nalanda)	8.1	13.38	-	11.68	-	11.68	8.73
Acme Cleantech Project (Magadh)	5.4	8.92	-	7.79	-	7.79	8.73
Solar Energy Corporation of India Ltd., Government of India	5.4	8.92	-	4.91	-	4.91	5.5
SECI Phase-II	81	14.38	-	3.61	-	3.61	2.51
SECI Phase-III	162	317.12	-	83.08	-	83.08	2.62
NTPC	162	277.31	-	74.04	-	74.04	2.67
Wind ISTS Scheme Tranche I (PTC) (Green Infra, Inox, Mytrah & Ostro)	108	253	-	89.31	-	89.31	3.53
Wind ISTS Scheme Tranche II (SECI) (Orange)	54	145.78	-	39.51	-	39.51	2.71
SECI Green Infra	54	147.89	-	32.76	-	32.76	2.22
Torrent Power	26.89	88.06	-	23.87	-	23.87	2.71
Adani Green	27	76.06	-	20.69	-	20.69	2.72
Alfanar	27	73.52	-	19.94	-	19.94	2.71
Betam	27.11	84.21	-	21.22	-	21.22	2.52
Adani Green (V)	67.5	79.24	-	22.42	-	22.42	2.83
Boreas Renewable	94.5	295.98	-	83.76	-	83.76	2.83
Ostro Kannad	162	279.43	-	80.75	-	80.75	2.89
Morjar Windfarm	27	41.85	-	12.1	-	12.1	2.89
SECI Phase-V	259.2	116.53	-	31.35	-	31.35	2.69
New Swadeshi Sugar Mill, Narkataganj	5.4	23.81	-	12.09	-	12.09	5.08
Hasanpur Sugar Mill, Dalsinghsarai	7.83	34.52	-	21.46	-	21.46	6.22
Bharat Sugar Mills, Sidhwalia, Gopalganj	8.1	35.71	-	12.63	-	12.63	3.54
Hari Nagar Sugar Mills, Hari Nagar, West Champaran	7.83	34.52	-	19.22	-	19.22	5.57
HPCL Biofuels Ltd., Sugauli, East Champaran	10.8	47.61	-	26.51	-	26.51	5.57
HPCL Biofuels Ltd., Lauria, West Champaran	10.8	47.61	-	26.51	-	26.51	5.57
Riga Sugar Company Ltd.	1.62	7.14	-	4.47	-	4.47	6.26
Siddhashram Rice Mill Cluster Pvt ltd	0.54	3.46	-	2.56	-	2.56	7.39
Bihar Distillers & Bottlers Pvt ltd	5.08	32.55	-	20.71	-	20.71	6.36

Name of The Source	MW	MUs	Fixed Charges (Rs Crore)	Energy Charges (Rs Crore)	Other Costs (Rs Crore)	Total Cost (Rs Crore)	Avg. Tariff (Rs/kWh)
Tirupati Sugar	3.24	15.49	-	9.83	-	9.83	6.34
						-	
Others	59.4	238.74	-	90.16	-	90.16	3.78
PTC JITPL	37.13	147.83	-	61.27	-	61.27	4.24
PTC SKS Power	22.28	90.91	-	28.89	-	28.89	4.24
						-	
Transmission and Other Charges	-	-	1,654.04	-	-	1,654.04	
SLDC	-	-	4.27	-	-	4.27	
BGCL	-	-	359.83	-	-	359.83	
BSPTCL	-	-	742.21	-	-	742.21	
POSOCO	-	-	2.7	-	-	2.7	
PGCIL ULDC CHG	-	-	-	-	-	-	
PGCIL	-	-	545.03	-	-	545.03	
Open Access Charges	-	-	-	-	-	-	
Total	5,873.12	20941.21	5307.5	5206.41	50.75	10564.66	5.04

Table 240: Power Purchase Cost projected by NBPDC for FY 2021-22

Name of The Source	MW	MUs	Fixed Charges (Rs Crore)	Energy Charges (Rs Crore)	Other Costs (Rs Crore)	Total Cost (Rs Crore)	Avg. Tariff (Rs/kWh)
Central Generating Stations	3,014.13	12,811.05	2,424.62	3,038.86	-	5,463.48	4.26
FSTPP I & II	231.09	1,018.74	110.63	281.42	-	392.05	3.85
FSTPP III	49.49	264.5	42.54	72	-	114.55	4.33
KHSTPP I	161.74	713.02	80.92	156.17	-	237.09	3.33
KHSTPP II	34.36	198.91	21.89	41.26	-	63.15	3.17
Barh Stage I Unit I	157.26	695.2	167.59	186.53	-	354.12	5.09
Barh Stage I Unit II	157.26	231.73	55.86	62.18	-	118.04	5.09
Barh Stage II	550.95	2,808.41	677.01	753.53	-	1,430.54	5.09
Nabinagar (BRBCL) Unit I - III	34.5	146.68	53.59	35.66	-	89.25	6.08
Nabinagar (BRBCL) Unit IV	11.5	45.01	16.44	10.94	-	27.39	6.08
Talcher Stage I	189.73	818.13	73.63	164.9	-	238.53	2.92
KBUNL Stage II	134.5	443.25	146.3	119.49	-	265.79	6
NPGCL Unit I	257.35	1,694.15	407.36	340.32	-	747.68	4.41
NPGCL Unit II	257.35	1,137.63	273.54	228.52	-	502.07	4.41

Name of The Source	MW	MUs	Fixed Charges (Rs Crore)	Energy Charges (Rs Crore)	Other Costs (Rs Crore)	Total Cost (Rs Crore)	Avg. Tariff (Rs/kWh)
NPGCL Unit III	257.35	662.06	159.19	132.99	-	292.19	4.41
North Karanpura Unit I	105.5	115.96	27.88	23.29	-	51.17	4.41
Darlipali STPS Unit I	43.64	174.36	37.79	18.14	-	55.93	3.21
Darlipali STPS Unit II	43.64	174.36	37.79	18.14	-	55.93	3.21
Chuka	36.8	196.58	-	47.21	-	47.21	2.4
Rangit	9.66	55.5	10.28	10.57	-	20.85	3.76
Tala	118.45	455.5	-	98.39	-	98.39	2.16
Teesta	49.88	270.27	24.37	31.43	-	55.81	2.06
Mangdechhu	122.11	491.12	-	205.78	-	205.78	4.19
State Generating Stations	457.38	1,454.08	448.15	437.42	-	885.57	6.09
BSPHC	24.98	27.6	-	6.65	-	6.65	2.41
KBUNL Stage I	101.2	333.51	110.08	111.44	-	221.52	6.64
BTPS Stage I Unit I	50.6	166.75	51.58	52.63	-	104.21	6.25
BTPS Stage I Unit II	50.6	167.21	51.72	52.77	-	104.49	6.25
BTPS Stage II Unit I	115	378.99	117.23	106.82	-	224.05	5.91
BTPS Stage II Unit II	115	380.02	117.55	107.11	-	224.66	5.91
						-	
IPPs	224.48	1,073.81	239.43	124.07	43.24	406.73	3.79
GMR	119.6	656.19	122.74	78.55	48.87	250.15	3.81
JITPL	104.88	417.62	116.69	45.52	-5.63	156.58	3.75
						-	
Renewables	1,256.44	2,296.49	-	757.89	-	757.89	3.3
M/s Sunmark Energy Projects Limited (Formerly MBCEL)	4.6	7.6	-	4.31	-	4.31	5.67
M/s Response renewable Energy Ltd, Kolkata.	4.6	7.6	-	4.31	-	4.31	5.67
M/s Avantika Contractors Ltd., Hyderabad	2.3	3.8	-	2.92	-	2.92	7.69
M/s Glatt Solutions Pvt. Ltd, Kolkata.	1.38	2.28	-	1.29	-	1.29	5.67
Alfa Infraprop Pvt. Ltd.	9.2	15.2	-	11.96	-	11.96	7.87
Udipta Energy & Equipment Pvt. Ltd.	2.3	3.8	-	3.03	-	3.03	7.98
Azure Power India Pvt. Ltd.	4.6	7.6	-	6.38	-	6.38	8.39
Welspun Renewables Project - I	4.6	7.6	-	6.61	-	6.61	8.7
Welspun Renewables Project - II	6.9	11.4	-	9.85	-	9.85	8.64

Name of The Source	MW	MUs	Fixed Charges (Rs Crore)	Energy Charges (Rs Crore)	Other Costs (Rs Crore)	Total Cost (Rs Crore)	Avg. Tariff (Rs/kWh)
Welspun Renewables Project – III	6.9	11.4	-	9.76	-	9.76	8.56
Acme Cleantech Project (Nalanda)	6.9	11.4	-	9.95	-	9.95	8.73
Acme Cleantech Project (Magadh)	4.6	7.6	-	6.63	-	6.63	8.73
Solar Energy Corporation of India Ltd., Government of India	4.6	7.6	-	4.18	-	4.18	5.5
SECI Phase-II	69	12.25	-	3.08	-	3.08	2.51
SECI Phase-III	138	270.14	-	70.78	-	70.78	2.62
NTPC	138	236.23	-	63.07	-	63.07	2.67
Wind ISTS Scheme Tranche I (PTC) (Green Infra, Inox, Mytrah & Ostro)	92	215.52	-	76.08	-	76.08	3.53
Wind ISTS Scheme Tranche II (SECI) (Orange)	46	124.18	-	33.65	-	33.65	2.71
SECI Phase-III Wind	-	-	-	-	-	-	-
SECI Green Infra	46	125.98	-	27.9	-	27.9	2.22
Torrent Power	22.91	75.02	-	20.33	-	20.33	2.71
Adani Green	23	64.79	-	17.62	-	17.62	2.72
Alfanar	23	62.63	-	16.99	-	16.99	2.71
Betam	23.09	71.73	-	18.08	-	18.08	2.52
SECI Phase-V Wind	-	-	-	-	-	-	-
Adani Green (V)	57.5	67.5	-	19.1	-	19.1	2.83
Boreas Renewable	80.5	252.13	-	71.35	-	71.35	2.83
SECI Phase-VI Wind	-	-	-	-	-	-	-
Ostro Kannad	138	238.03	-	68.79	-	68.79	2.89
Morjar Windfarm	23	35.65	-	10.3	-	10.3	2.89
SECI Phase-V	220.8	99.27	-	26.7	-	26.7	2.69
New Swadeshi Sugar Mill, Narkataganj	4.6	20.28	-	10.3	-	10.3	5.08
Hasanpur Sugar Mill, Dalsinghsarai	6.67	29.4	-	18.28	-	18.28	6.22
Bharat Sugar Mills, Sidhwalia, Gopalganj	6.9	30.42	-	10.76	-	10.76	3.54
Hari Nagar Sugar Mills, Hari Nagar, West Champaran	6.67	29.4	-	16.37	-	16.37	5.57
HPCL Biofuels Ltd., Sugauli, East Champaran	9.2	40.56	-	22.58	-	22.58	5.57
HPCL Biofuels Ltd., Lauria, West Champaran	9.2	40.56	-	22.58	-	22.58	5.57

Name of The Source	MW	MUs	Fixed Charges (Rs Crore)	Energy Charges (Rs Crore)	Other Costs (Rs Crore)	Total Cost (Rs Crore)	Avg. Tariff (Rs/kWh)
Riga Sugar Company Ltd.	1.38	6.08	-	3.81	-	3.81	6.26
Siddhashram Rice Mill Cluster Pvt Ltd	0.46	2.95	-	2.18	-	2.18	7.39
Bihar Distillers & Bottlers Pvt Ltd	4.32	27.73	-	17.64	-	17.64	6.36
Tirupati Sugar	2.76	13.2	-	8.37	-	8.37	6.34
						-	
Others	110	203.37	-	76.81	-	76.81	3.78
PTC JITPL	68.75	125.93	-	52.2	-	52.2	4.24
PTC SKS Power	41.25	77.45	-	24.61	-	24.61	4.24
						-	
Transmission and Other Charges	-	-	1,408.99	-	-	1,408.99	
SLDC	-	-	3.64	-	-	3.64	
BGCL	-	-	306.52	-	-	306.52	
BSPTCL	-	-	632.25	-	-	632.25	
POSOCO	-	-	2.3	-	-	2.3	
PGCIL ULDC CHG	-	-	-	-	-	-	
PGCIL	-	-	464.28	-	-	464.28	
Total	5,062.43	17838.81	4521.2	4435.04	43.24	8999.47	5.04

6.9.3. The Discoms have made PPA agreements with the new plants according to 24x7 Power for All MoU but considering the reality, the expected COD from the plants have been considered reasonably. Discoms submitted that the average cost of power calculated above is subjected to change on actual basis since power drawl from open market will be available which is subjected to Annual performance review and True up process. The Discoms further submitted that in extreme cases wherein there is delay in CoD of any Plant, they might purchase power from open market at reasonable rates as determined by the market.

Commission's Analysis:

6.9.4. The Commission has noted the submission of Discoms regarding power purchase cost. The Commission observes that Discoms have projected higher power purchase requirement and in turn higher power purchase cost. Further, the surplus power on account of higher projections after satisfying the demand has been considered by Discoms to reduce the power purchase cost. The net power purchase cost so arrived after treatment of surplus power is then considered by the Discoms in their ARR. However, as against this the Commission has projected power purchase requirement in such a manner wherein the power purchase quantum is reduced to the approved

requirement at the regional periphery duly following Merit Order Principle (MOD). In other word the surplus power has not been projected and considered by the Commission in its projections.

- 6.9.5. Further, in doing so the Commission has taken the cognizance of actual six-month data from April, 2020 to September 2020 as submitted by the Discoms. The Commission has considered the energy charges, fixed charges and other charges on the basis of actual six-month data.
- 6.9.6. For existing solar, non-solar renewable energy sources, the rates as per PPA are considered. For the new stations, the energy charges as projected by the Discoms are considered.
- 6.9.7. The fixed charges for Central Generating Stations and State Generating Stations are considered as per availability of approved cost for FY 2021-22. However, for Stations including new plants for which Tariff Orders have not yet been approved, the fixed cost and other cost has been considered as submitted by the Discoms.
- 6.9.8. In view of above, the power purchase cost as approved by the Commission for FY 2021-22 is as shown in Table below:

Table 241: Power Purchase Cost approved by the Commission for NBPDCCL for FY 2021-22

Sr No.	Name of The Source	Claimed by NBPDCCL				Approved by the Commission							
		Units Claimed (MUs)	Energy Cost Claimed (Rs. Cr)	Fixed Cost claimed (Rs Crs)	Mis. Cost Claimed (Rs. Cr)	Unit Approved (MUs)	Energy Charges (Rs/kWh)	Fixed Charges (Rs./kWh)	Energy Cost considered (Rs. Cr)	Fixed Cost Approved (Rs Crs)	Misc. Cost Approved (Rs. Cr)	Total PP Cost Approved (Rs. Cr)	Avg. Tariff (Rs./kWh)
A	MOD sources												
1	<i>Darlipali STPS Unit I</i>	174.36	18.14	37.79	-	174.36	1.04	2.17	18.14	37.79		55.93	3.21
2	<i>Darlipali STPS Unit II</i>	174.36	18.14	37.79	-	174.36	1.04	2.17	18.14	37.79		55.93	3.21
3	<i>JITPL</i>	417.62	45.52	116.69	-5.63	417.62	1.09	2.79	45.52	116.69	-5.63	156.58	3.75
4	<i>GMR</i>	656.19	78.55	122.74	48.87	656.19	1.20	1.87	78.55	122.74	48.87	250.15	3.81
5	<i>North Karanpura Unit I</i>	115.96	23.29	27.88	-	115.96	2.01	2.40	23.29	27.88		51.17	4.41
6	<i>NPGCL Unit II</i>	1137.63	228.52	273.54	-	1137.63	2.01	2.40	228.52	273.54		502.07	4.41
7	<i>NPGCL Unit III</i>	662.06	132.99	159.19	-	662.06	2.01	2.40	132.99	159.19		292.19	4.41
8	<i>NPGCL Unit I</i>	1694.15	340.32	407.36	-	1694.15	2.01	2.40	340.32	407.36		747.68	4.41
9	<i>Talcher Stage I</i>	818.13	164.90	73.63	-	818.13	2.02	0.90	164.90	73.63		238.53	2.92
10	<i>KHSTPP II</i>	198.91	41.26	21.89	-	198.91	2.07	1.10	41.26	21.89		63.15	3.17
11	<i>KHSTPP I</i>	713.02	156.17	80.92	-	713.02	2.19	1.13	156.17	80.92		237.09	3.33
12	<i>Nabinagar (BRBCL) Unit I - III</i>	146.68	35.66	53.59	-	146.68	2.43	3.65	35.66	53.59		89.25	6.08
13	<i>Nabinagar (BRBCL) Unit IV</i>	45.01	10.94	16.44	-	45.01	2.43	3.65	10.94	16.44		27.39	6.08
14	<i>Barh Stage I Unit I</i>	695.20	186.53	167.59	-	695.20	2.68	2.41	186.53	167.59		354.12	5.09
15	<i>Barh Stage I Unit II</i>	231.73	62.18	55.86	-	231.73	2.68	2.41	62.18	55.86		118.04	5.09
16	<i>Barh Stage II</i>	2808.41	753.53	677.01	-	2500.60	2.68	2.41	670.94	602.81		1273.75	5.09
17	<i>KBUNL Stage II</i>	443.25	119.49	146.30	-		2.70	3.30					6.00
18	<i>FSTPP III</i>	264.50	72.00	42.54	-		2.72	1.61					4.33

Sr No.	Name of The Source	Claimed by NBPDC				Approved by the Commission							
		Units Claimed (MUs)	Energy Cost Claimed (Rs. Cr)	Fixed Cost claimed (Rs Crs)	Mis. Cost Claimed (Rs. Cr)	Unit Approved (MUs)	Energy Charges (Rs/k Wh)	Fixed Charges (Rs./kWh)	Energy Cost considered (Rs. Cr)	Fixed Cost Approved (Rs Crs)	Misc. Cost Approved (Rs. Cr)	Total PP Cost Approved (Rs. Cr)	Avg. Tariff (Rs./k Wh)
19	<i>FSTPP I & II</i>	1018.74	281.42	110.63	-		2.76	1.09					3.85
20	<i>BTPS Stage II Unit I</i>	378.99	106.82	117.23	-		2.82	3.09					5.91
21	<i>BTPS Stage II Unit II</i>	380.02	107.11	117.55	-		2.82	3.09					5.91
22	<i>BTPS Stage I Unit I</i>	166.75	52.63	51.58	-		3.16	3.09					6.25
23	<i>BTPS Stage I Unit II</i>	167.21	52.77	51.72	-		3.16	3.09					6.25
24	<i>PTC SKS Power</i>	77.45	24.61	-			4.24	-					4.24
25	<i>KBUNL Stage I</i>	333.51	111.44	110.08	-		3.34	3.30					6.64
26	<i>PTC JITPL</i>	125.93	52.20	-	-		4.24	-					4.24
	Sub Total (A)	14045.75	3277.1	3,077.55	43.24	10381.60			2214.04	2255.72	43.24	4512.99	
B	Must-Run Sources												
27	<i>Teesta</i>	270.27	31.43	24.37		270.27	1.16	0.90	31.43	24.37		55.81	2.06
28	<i>Rangit</i>	55.50	10.57	10.28		55.50	1.91	1.85	10.57	10.28		20.85	3.76
29	<i>Tala</i>	455.50	98.39			455.50	2.16		98.39	-		98.39	2.16
30	<i>Chuka</i>	196.58	47.21			196.58	2.40		47.21	-		47.21	2.40
31	<i>BSPHCL</i>	27.60	6.65			27.60	2.41		6.65	-		6.65	2.41
32	<i>Mangdechu</i>	491.12	205.78			491.12	4.19		205.78	-		205.78	4.19
	Sub Total (B)	1,496.56	400.03	34.66		1,496.56			400.03	34.66	-	434.69	
C	Renewables:												
33	<i>M/s Sunmark Energy Projects Limited (Formerly MBCEL)</i>	7.60	4.31			7.60	5.67		4.31				5.67
34	<i>M/s Response renewable Energy Ltd,</i>	7.60	4.31			7.60	5.67		4.31				5.67

Sr No.	Name of The Source	Claimed by NBPDC				Approved by the Commission							
		Units Claimed (MUs)	Energy Cost Claimed (Rs. Cr)	Fixed Cost claimed (Rs Crs)	Mis. Cost Claimed (Rs. Cr)	Unit Approved (MUs)	Energy Charges (Rs/k Wh)	Fixed Charges (Rs./kWh)	Energy Cost considered (Rs. Cr)	Fixed Cost Approved (Rs Crs)	Misc. Cost Approved (Rs. Cr)	Total PP Cost Approved (Rs. Cr)	Avg. Tariff (Rs./k Wh)
	<i>Kolkata.</i>												
35	<i>M/s Avantika Contractors Ltd., Hyderabad</i>	3.80	2.92			3.80	7.69		2.92				7.69
36	<i>M/s Glatt Solutions Pvt. Ltd, Kolkata.</i>	2.28	1.29			2.28	5.67		1.29				5.67
37	<i>Alfa Infraprop Pvt. Ltd.</i>	15.20	11.96			15.20	7.87		11.96				7.87
38	<i>Udipta Energy & Equipment Pvt. Ltd.</i>	3.80	3.03			3.80	7.98		3.03				7.98
39	<i>Azure Power India Pvt. Ltd.</i>	7.60	6.38			7.60	8.39		6.38				8.39
40	<i>Welspun Renewables Project - I</i>	7.60	6.61			7.60	8.70		6.61				8.70
41	<i>Welspun Renewables Project – II</i>	11.40	9.85			11.40	8.64		9.85				8.64
42	<i>Welspun Renewables Project – III</i>	11.40	9.76			11.40	8.56		9.76				8.56
43	<i>Acme Cleantech Project (Nalanda)</i>	11.40	9.95			11.40	8.73		9.95				8.73
44	<i>Acme Cleantech Project (Magadh)</i>	7.60	6.63			7.60	8.73		6.63				8.73
45	<i>Solar Energy Corporation of India Ltd., Government of India</i>	7.60	4.18			7.60	5.50		4.18				5.50
46	<i>SECI Phase-II</i>	12.25	3.08			12.25	2.51		3.08				2.51
47	<i>SECI Phase-III</i>	270.14	70.78			270.14	2.62		70.78				2.62
48	<i>NTPC</i>	236.23	63.07			236.23	2.67		63.07				2.67

Sr No.	Name of The Source	Claimed by NBPDC				Approved by the Commission							
		Units Claimed (MUs)	Energy Cost Claimed (Rs. Cr)	Fixed Cost claimed (Rs Crs)	Mis. Cost Claimed (Rs. Cr)	Unit Approved (MUs)	Energy Charges (Rs/kWh)	Fixed Charges (Rs./kWh)	Energy Cost considered (Rs. Cr)	Fixed Cost Approved (Rs Crs)	Misc. Cost Approved (Rs. Cr)	Total PP Cost Approved (Rs. Cr)	Avg. Tariff (Rs./kWh)
49	Wind ISTS Scheme Tranche I (PTC) (Green Infra, Inox, Mytrah & Ostro)	215.52	76.08			215.52	3.53		76.08				3.53
50	Wind ISTS Scheme Tranche II (SECI) (Orange)	124.18	33.65			124.18	2.71		33.65				2.71
51	SECI Phase-III Wind	-	-			-	-		-				-
52	SECI Green Infra	125.98	27.90			125.98	2.22		27.90				2.22
53	Torrent Power	75.02	20.33			75.02	2.71		20.33				2.71
54	Adani Green	64.79	17.62			64.79	2.72		17.62				2.72
55	Alfanar	62.63	16.99			62.63	2.71		16.99				2.71
56	Betam	71.73	18.08			71.73	2.52		18.08				2.52
	SECI Phase-V Wind	-	-			-	-		-				-
57	Adani Green (V)	67.50	19.10			67.50	2.83		19.10				2.83
58	Boreas Renewable	252.13	71.35			252.13	2.83		71.35				2.83
	SECI Phase-VI Wind	-	-			-	-		-				-
59	Ostro Kannad	238.03	68.79			238.03	2.89		68.79				2.89
60	Morjar Windfarm	35.65	10.30			35.65	2.89		10.30				2.89
	SECI Phase-V	99.27	26.70			99.27	2.69		26.70				2.69
61	New Swadeshi Sugar Mill, Narkataganj	20.28	10.30			20.28	5.08		10.30				5.08
62	Hasanpur Sugar Mill, Dalsinghsarai	29.40	18.28			29.40	6.22		18.28				6.22
63	Bharat Sugar Mills,	30.42	10.76			30.42	3.54		10.76				3.54

Sr No.	Name of The Source	Claimed by NBPDCCL				Approved by the Commission							
		Units Claimed (MUs)	Energy Cost Claimed (Rs. Cr)	Fixed Cost claimed (Rs Crs)	Mis. Cost Claimed (Rs. Cr)	Unit Approved (MUs)	Energy Charges (Rs/k Wh)	Fixed Charges (Rs./kWh)	Energy Cost considered (Rs. Cr)	Fixed Cost Approved (Rs Crs)	Misc. Cost Approved (Rs. Cr)	Total PP Cost Approved (Rs. Cr)	Avg. Tariff (Rs./k Wh)
	<i>Sidhwalia, Gopalganj</i>												
64	<i>Hari Nagar Sugar Mills, Hari Nagar, West Champaran</i>	29.40	16.37			29.40	5.57		16.37				5.57
65	<i>HPCL Biofuels Ltd., Sugauli, East Champaran</i>	40.56	22.58			40.56	5.57		22.58				5.57
66	<i>HPCL Biofuels Ltd., Lauria, West Champaran</i>	40.56	22.58			40.56	5.57		22.58				5.57
67	<i>Riga Sugar Company Ltd.</i>	6.08	3.81			6.08	6.26		3.81				6.26
68	<i>Siddhashram Rice Mill Cluster Pvt ltd</i>	2.95	2.18			2.95	7.39		2.18				7.39
69	<i>Bihar Distillers & Bottlers Pvt ltd</i>	27.73	17.64			27.73	6.36		17.64				6.36
70	<i>Tirupati Sugar</i>	13.20	8.37			13.20	6.34		8.37				6.34
	Renewables Sub-Total (C)	2,296.49	757.89			2,296.49	3.30		757.89	-		757.89	
	Total Must Run (B+C)	3,793.05	1,157.9	34.66		3,793.05			1,157.92	34.66		1,192.58	
D	Total Power Purchase (A+B+C)	17,838.8	4,434.0	3,112.2		14,174.7			3,371.96	2,290.38	43.24	5,705.57	4.02

Table 242: Power Purchase Cost approved by the Commission for SBPDCL for FY 2021-22

Sr No.	Name of The Source	Claimed by NBPDCCL				Approved by the Commission							
		Units Claimed (MUs)	Energy Cost Claimed (Rs. Cr)	Fixed Cost claimed (Rs Crs)	Mis. Cost Claimed (Rs. Cr)	Unit Approved (MUs)	Energy Charges (Rs/k Wh)	Fixed Charges Rs./Unit	Energy Cost considered (Rs. Cr)	Fixed Cost Approved (Rs Crs)	Misc. Cost Approved (Rs. Cr)	Total PP Cost Approved (Rs. Cr)	Average Tariff (Rs. Cr)
A	MOD Sources												
1	<i>Darlipali STPS Unit I</i>	204.68	21.29	44.36		204.68	1.04	2.17	21.29	44.36		65.65	3.21
2	<i>Darlipali STPS Unit II</i>	204.68	21.29	44.36		204.68	1.04	2.17	21.29	44.36		65.65	3.21
3	<i>JITPL</i>	490.25	53.44	136.98	(6.61)	490.25	1.09	2.79	53.44	136.98	(6.61)	183.81	3.88
4	<i>GMR</i>	770.31	92.21	144.09	57.36	770.31	1.20	1.87	92.21	144.09	57.36	293.66	3.07
5	<i>North Karanpura Unit I</i>	136.12	27.34	32.73		136.12	2.01	2.40	27.34	32.73		60.07	4.41
6	<i>NPGCL Unit II</i>	1,335.48	268.27	321.12		1,335.48	2.01	2.40	268.27	321.12		589.39	4.41
7	<i>NPGCL Unit III</i>	777.20	156.12	186.88		777.20	2.01	2.40	156.12	186.88		343.00	4.41
8	<i>NPGCL Unit I</i>	1,988.78	399.50	478.21		1,988.78	2.01	2.40	399.50	478.21		877.71	4.41
9	<i>Talcher Stage I</i>	960.41	193.58	86.44		960.41	2.02	0.90	193.58	86.44		280.02	2.92
10	<i>KHSTPP II</i>	233.50	48.43	25.70		233.50	2.07	1.10	48.43	25.70		74.13	3.17
11	<i>KHSTPP I</i>	837.03	183.33	94.99		837.03	2.19	1.13	183.33	94.99		278.32	3.33
12	<i>Nabinagar (BRBCL) Unit I - III</i>	172.19	41.86	62.91		172.19	2.43	3.65	41.86	62.91		104.77	6.08
13	<i>Nabinagar (BRBCL) Unit IV</i>	52.84	12.85	19.30		52.84	2.43	3.65	12.85	19.30		32.15	6.08
14	<i>Barh Stage I Unit I</i>	816.10	218.97	196.73		816.10	2.68	2.41	218.97	196.73		415.70	5.09
15	<i>Barh Stage I Unit II</i>	272.03	72.99	65.58		272.03	2.68	2.41	72.99	65.58		138.57	5.09
16	<i>Barh Stage II</i>	3,296.83	884.57	794.75		2,820.69	2.68	2.41	756.82	679.97		1,436.79	5.09
17	<i>KBUNL Stage II</i>	520.33	140.27	171.74			2.70	3.30					6.00
18	<i>FSTPP III</i>	310.50	84.52	49.94			2.72	1.61					4.33

Sr No.	Name of The Source	Claimed by NBPDC				Approved by the Commission							
		Units Claimed (MUs)	Energy Cost Claimed (Rs. Cr)	Fixed Cost claimed (Rs Crs)	Mis. Cost Claimed (Rs. Cr)	Unit Approved (MUs)	Energy Charges (Rs/k Wh)	Fixed Charges Rs./Unit	Energy Cost considered (Rs. Cr)	Fixed Cost Approved (Rs Crs)	Misc. Cost Approved (Rs. Cr)	Total PP Cost Approved (Rs. Cr)	Average Tariff (Rs. Cr)
19	<i>FSTPP I & II</i>	1,195.92	330.37	129.87			2.76	1.09					3.85
20	<i>BTPS Stage II Unit I</i>	444.90	125.43	137.61			2.82	3.09					5.91
21	<i>BTPS Stage II Unit II</i>	446.12	125.77	137.99			2.82	3.09					5.91
22	<i>BTPS Stage I Unit I</i>	195.75	61.78	60.55			3.16	3.09					6.25
23	<i>BTPS Stage I Unit II</i>	196.29	61.95	60.72			3.16	3.09					6.25
24	<i>KBUNL Stage I</i>	391.51	130.82	129.22			3.34	3.30					6.64
25	<i>PTC JITPL</i>	147.83	61.27	-			4.19	-					4.24
26	<i>PTC SKS Power</i>	90.91	28.89	-			4.19	-					4.24
	Sub-Total A	16,488.5	3,847.1	3,612.77	50.75	12,072.3			2,568.28	2,620.35	50.75	5,239.38	
B	Must-Run Sources												
27	<i>Teesta</i>	317.27	36.90	28.61		317.27	1.16	0.90	36.90	28.61		65.51	2.06
28	<i>Rangit</i>	65.15	12.41	12.07		65.15	1.91	1.85	12.41	12.07		24.48	3.76
29	<i>Tala</i>	534.71	115.50			534.71	2.16		115.50			115.50	2.16
30	<i>Chuka</i>	230.76	55.42			230.76	2.40		55.42			55.42	2.40
31	<i>BSPHCL</i>	32.40	7.81			32.40	2.41		7.81			7.81	2.41
32	<i>Mangdechu</i>	576.54	241.57			576.54	4.19		241.57			241.57	4.19
	Sub-Total B												
C	Renewables												
33	<i>M/s Sunmark Energy Projects Limited (Formerly MBCEL)</i>	8.92	5.06			8.92	5.67		5.06				5.67
34	<i>M/s Response renewable Energy Ltd,</i>	8.92	5.06			8.92	5.67		5.06				5.67

Sr No.	Name of The Source	Claimed by NBPDCCL				Approved by the Commission							
		Units Claimed (MUs)	Energy Cost Claimed (Rs. Cr)	Fixed Cost claimed (Rs Crs)	Mis. Cost Claimed (Rs. Cr)	Unit Approved (MUs)	Energy Charges (Rs/k Wh)	Fixed Charges Rs./Unit	Energy Cost considered (Rs. Cr)	Fixed Cost Approved (Rs Crs)	Misc. Cost Approved (Rs. Cr)	Total PP Cost Approved (Rs. Cr)	Average Tariff (Rs. Cr)
	<i>Kolkata.</i>												
35	<i>M/s Avantika Contractors Ltd., Hyderabad</i>	4.46	3.43			4.46	7.69		3.43				7.69
36	<i>M/s Glatt Solutions Pvt. Ltd, Kolkata.</i>	2.68	1.52			2.68	5.67		1.52				5.67
37	<i>Alfa Infraprop Pvt. Ltd.</i>	17.84	14.04			17.84	7.87		14.04				7.87
38	<i>Udipta Energy & Equipment Pvt. Ltd.</i>	4.46	3.56			4.46	7.98		3.56				7.98
39	<i>Azure Power India Pvt. Ltd.</i>	8.92	7.48			8.92	8.39		7.48				8.39
40	<i>Welspun Renewables Project - I</i>	8.92	7.76			8.92	8.70		7.76				8.70
41	<i>Welspun Renewables Project – II</i>	13.38	11.56			13.38	8.64		11.56				8.64
42	<i>Welspun Renewables Project – III</i>	13.38	11.45			13.38	8.56		11.45				8.56
43	<i>Acme Cleantech Project (Nalanda)</i>	13.38	11.68			13.38	8.73		11.68				8.73
44	<i>Acme Cleantech Project (Magadh)</i>	8.92	7.79			8.92	8.73		7.79				8.73
45	<i>Solar Energy Corporation of India Ltd., Government of India</i>	8.92	4.91			8.92	5.50		4.91				5.50
46	<i>SECI Phase-II</i>	14.38	3.61			14.38	2.51		3.61				2.51
47	<i>SECI Phase-III</i>	317.12	83.08			317.12	2.62		83.08				2.62

Sr No.	Name of The Source	Claimed by NBPDC				Approved by the Commission							
		Units Claimed (MUs)	Energy Cost Claimed (Rs. Cr)	Fixed Cost claimed (Rs Crs)	Mis. Cost Claimed (Rs. Cr)	Unit Approved (MUs)	Energy Charges (Rs/k Wh)	Fixed Charges Rs./Unit	Energy Cost considered (Rs. Cr)	Fixed Cost Approved (Rs Crs)	Misc. Cost Approved (Rs. Cr)	Total PP Cost Approved (Rs. Cr)	Average Tariff (Rs. Cr)
48	NTPC	277.31	74.04			277.31	2.67		74.04				2.67
49	Wind ISTS Scheme Tranche I (PTC) (Green Infra, Inox, Mytrah & Ostro)	253.00	89.31			253.00	3.53		89.31				3.53
50	Wind ISTS Scheme Tranche II (SECI) (Orange)	145.78	39.51			145.78	2.71		39.51				2.71
51	SECI Phase-III Wind	-	-			-	-		-				-
52	SECI Green Infra	147.89	32.76			147.89	2.22		32.76				2.22
53	Torrent Power	88.06	23.87			88.06	2.71		23.87				2.71
54	Adani Green	76.06	20.69			76.06	2.72		20.69				2.72
55	Alfanar	73.52	19.94			73.52	2.71		19.94				2.71
56	Betam	84.21	21.22			84.21	2.52		21.22				2.52
	SECI Phase-V Wind	-	-			-	-		-				-
57	Adani Green (V)	79.24	22.42			79.24	2.83		22.42				2.83
58	Boreas Renewable	295.98	83.76			295.98	2.83		83.76				2.83
	SECI Phase-VI Wind	-	-			-	-		-				-
59	Ostro Kannad	279.43	80.75			279.43	2.89		80.75				2.89
60	Morjar Windfarm	41.85	12.10			41.85	2.89		12.10				2.89
	SECI Phase-V	116.53	31.35			116.53	2.69		31.35				2.69
61	New Swadeshi Sugar Mill, Narkataganj	23.81	12.09			23.81	5.08		12.09				5.08
62	Hasanpur Sugar Mill, Dalsinghsarai	34.52	21.46			34.52	6.22		21.46				6.22

Order on approval of Truing-up for FY 2019-20, APR of FY 2020-21 and ARR for FY2021-22 for NBPDC & SBPDCL

Sr No.	Name of The Source	Claimed by NBPDC				Approved by the Commission							
		Units Claimed (MUs)	Energy Cost Claimed (Rs. Cr)	Fixed Cost claimed (Rs Crs)	Mis. Cost Claimed (Rs. Cr)	Unit Approved (MUs)	Energy Charges (Rs/k Wh)	Fixed Charges Rs./Unit	Energy Cost considered (Rs. Cr)	Fixed Cost Approved (Rs Crs)	Misc. Cost Approved (Rs. Cr)	Total PP Cost Approved (Rs. Cr)	Average Tariff (Rs. Cr)
63	<i>Bharat Sugar Mills, Sidhwalia, Gopalganj</i>	35.71	12.63			35.71	3.54		12.63				3.54
64	<i>Hari Nagar Sugar Mills, Hari Nagar, West Champaran</i>	34.52	19.22			34.52	5.57		19.22				5.57
65	<i>HPCL Biofuels Ltd., Sugauli, East Champaran</i>	47.61	26.51			47.61	5.57		26.51				5.57
66	<i>HPCL Biofuels Ltd., Lauria, West Champaran</i>	47.61	26.51			47.61	5.57		26.51				5.57
67	<i>Riga Sugar Company Ltd.</i>	7.14	4.47			7.14	6.26		4.47				6.26
68	<i>Siddhashram Rice Mill Cluster Pvt ltd</i>	3.46	2.56			3.46	7.39		2.56				7.39
69	<i>Bihar Distillers & Bottlers Pvt ltd</i>	32.55	20.71			32.55	6.36		20.71				6.36
70	<i>Tirupati Sugar</i>	15.49	9.83			15.49	6.34		9.83				6.34
	Renewables	2,695.88	889.70			2,695.88	3.30		889.70			889.70	
	Sub-total (B)	4,452.72	1,359.3	40.68	-	4,452.72			1,359.30	40.68		1,399.98	
D	Total (A+B)	20,941.2	5,206.4	3,653.45	50.75	16,525.0			3,927.58	2,661.03	50.75	6,639.36	4.02

- 6.9.9. The Commission directs the Discoms to procure power to meet the demand on “Real Time Basis” strictly following the “Merit Order Dispatch” principles. The Discoms shall also take into consideration the prevailing rates in the IEX/PXIL while procuring the power and shall try to minimise the cost of power purchase as much as possible. The power, if necessary, from short term sources shall be procured at cheapest possible rates which in any case shall not be more than that of average power pooled cost considered for FY 2020-21.

6.10. Transmission Charges

NBPDC & SBPDCL’s Submission:

- 6.10.1. Discoms have submitted that they have to pay transmission charges to PGCIL for use of Transmission facilities enabling power drawl from eastern region. Discoms have considered PGCIL charges as approved in MYT for FY 2021-22. Discoms further submitted that they have to pay BSPTCL, BGCL and SLDC charges as approved by the Commission for FY 2021-22.
- 6.10.2. Discoms requested the Commission to approve the Transmission and related charges for Inter-State as well as Intra-State Transmission transactions for FY 2021-22 as per the Table 6.24 below:

Table 243: Transmission charges projected by Discoms for FY 2021-22 (Rs. Crore)

Particulars	SBPDCL	NBPDC	Total
SLDC	4.27	3.64	7.91
BGCL	359.83	306.52	666.35
BSPTCL	742.21	632.25	1374.46
POSOCO	2.7	2.3	5
PGCIL	545.03	464.28	1009.31
Total Transmission Charges	1654.04	1,408.99	3063.03

Commission’s Analysis:

PGCIL & POSOCO Charges

- 6.10.3. The Petitioners have submitted that PGCIL Charges and POSOCO charges are at same level as approved by the Commission in MYT Order. The Commission has considered PGCIL charges and POSOCO charges as approved for FY 2021-22 in MYT Order as per Petitioners’ submission. The Commission has allocated the same among SBPDCL and NBPDC in their power purchase sharing ratio of 54:46 as approved by the Board. PGCIL and POSOCO charges are approved for the Discoms for FY 2021-22 as given in the Table below:

Table 244: PGCIL and POSOCO Charges approved for Discoms for FY 2021-22 (Rs. Crore)

SI. No	Particulars	FY 2021-22
1	PGCIL Charges approved including POSOCO Charges	1009.31
2	SBPDCL (54%)	545.03
3	NBPDC (46%)	464.28

BSPTCL Transmission Charges

6.10.4. The Commission has approved the transmission charges of BSPTCL for FY 2021-22 in BSPTCL Tariff Order dated 19 March, 2021 for FY 2021-22 as given in the Table below. The Commission has allocated the same among SBPDCL and NBPDC in their power purchase sharing ratio of 54:46 respectively. Accordingly, the Commission has considered the BSPTCL Transmission charges for FY 2021-22 and included the same in the Power purchase cost of Discoms for FY 2021-22.

Table 245: BSPTCL Charges approved for Discoms for FY 2021-22 (Rs. Crore)

SI. No	Particulars	FY 2021-22
1	BSPTCL Charges approved in its Tariff Order for FY 2021-22	1130.68
2	SBPDCL (54%)	610.57
3	NBPDC (46%)	520.11

Bihar Grid Company Limited (BGCL) Transmission Charges

6.10.5. The Commission has approved the transmission charges of for FY 2021-22 in BGCL Tariff Order dated 19 March, 2021 for FY 2021-22 as given in the Table below. The Commission has allocated the same to SBPDCL and NBPDC in their power purchase sharing ratio of 54:46 respectively. Accordingly, the Commission has considered the BGCL transmission charges for FY 2021-22 and included the same in the Power purchase cost of Discoms for FY 2021-22.

Table 246: BGCL Charges approved for Discoms for FY 2021-22 (Rs. Crore)

SI. No	Particulars	FY 2021-22
1	BGCL Charges approved in its Tariff Order for FY 2021-22	452.62
2	SBPDCL (54%)	244.41
3	NBPDC (46%)	208.21

SLDC Charges

6.10.6. The Commission has approved the SLDC charges for FY 2021-22 in SLDC Tariff Order dated 19 March, 2021 for FY 2021-22 as given in Table below. The Commission has allocated to SBPDCL and NBPDC in their power purchase sharing ratio of 54 : 46 respectively. Accordingly, the Commission has considered SLDC charges for FY 2021-22 and included in their power purchase cost.

Table 247: SLDC Charges approved for Discoms for FY 2021-22 (Rs. Crore)

SI. No	Particulars	FY 2021-22
1	SLDC Charges approved in its Tariff Order for FY 2021-22	10.4
2	SBPDCL (54%)	5.62
3	NBPDC (46%)	4.78

6.11. Total Power Purchase Cost

6.11.1. The total power purchase cost approved for the Discoms for the FY 2020-21 are given in the Table below:

Table 248: Total Power Purchase Cost approved for FY 2021-22 (Rs. Crore)

SI. No.	Particulars	NBPDC	SBPDCL	Total
1	Power Purchase Cost	5705.57	6,639.36	12,344.93
2	PGCIL & POSOCO Charges	466.58	547.73	1,014.31
3	BSPTCL Charges	520.11	610.57	1,130.68
4	SLDC Charges	4.78	5.62	10.40
5	BGCL Charges	208.21	244.41	452.62
6	Sub-Total	6905.25	8047.69	14,952.94

6.11.2. The Commission approves total power purchase cost of for both companies put together for FY 2021-22 as shown in the table above.

6.12. Incremental Power Purchase Cost

6.12.1. The Commission has dealt with the procedure for identification of incremental cost and process of recovery of incremental cost in the Regulation, 20.1 of BERC (Multi-Year Distribution Tariff) Regulations, 2018. The formula for computation of Fuel and Power Purchase Cost Adjustment (FPPCA) and Terms and Conditions for application of the FPPCA formula are also explained in detail in Regulation 20.2 of BERC (Multi-Year Distribution Tariff) Regulation, 2018 to facilitate the Discoms to claim additional power purchase cost, if any, promptly.

6.13. Capital Expenditure

NBPDC & SBPDCL's Submission:

6.13.1. The Petitioners have computed the capitalization of investment on the assumption that

80% of the opening CWIP will get capitalized every year and 20% of the fresh investment is would capitalize. During FY 2021-22, the Petitioner targets that most of the schemes would end, and the remaining schemes would be capitalized fully.

- 6.13.2. The Petitioner has allocated the investments through various schemes into grant, Loan and Equity. The said allocation is based on the actual source from which funds were received by the Petitioner. The Petitioner has provided the detailed capitalization plan to the Commission as required in the tariff formats.
- 6.13.3. Discoms have projected capitalisation and funding of capitalisation under various schemes for FY 2020-21 as given below:

Table 249: Projected scheme-wise capitalisation and source of funding for FY 2020-21 (Rs. Crore)

S.N	Name of scheme	Name of Funding Agency	SBPDCL	NBPDCCL	Total
1	BRGF	GoB	-	315.74	315.74
2	R-APDRP		-	11.13	11.13
3	NABARD Phase VIII		-	9.40	9.40
4	Burnt DTR State Plan		2.00	1.00	3.00
5	State Plan -Others	GoB	131.57	314.59	446.16
6	Reconductoring		106.20	315.74	421.94
7	IPDS		800.00	136.00	936.00
8	RGGVY	GoI/REC	197.91	600.00	797.91
9	DDUGJY	GoI/GoB	100.00	9.10	109.10
10	APL Connection/Saubhagya	GoB	-	50.00	50.00
11	Own Sources		75.70	60.47	136.17
12	R-APDRP		-	25.11	25.11
13	Total		1,413.38	1,532.54	2,945.92

- 6.13.4. Discoms have submitted the details of opening CWIP, investment during the year, capitalisation and funding of capex for FY 2021-22 as detailed in the Table below:

Table 250: CWIP, Capitalisation and Funding of capitalisation projected for FY 2021-22 (Rs. Crore)

S. No.	Particulars	SBPDCL	NBPDCCL	Total
1	Opening CWIP	6,226.72	8281.52	14508.24
2	New Investment	66.5	697.03	763.53
3	Less Capitalization	1,413.38	1532.54	2945.92
(a)	CWIP	1,130.70	1226.03	2356.73
(b)	New Investment	282.68	306.51	589.19
4	Closing CWIP (1+2-3)	4,879.84	7446.02	12325.86

S. No.	Particulars	SBPDCL	NBPDCCL	Total
5	Funding			
(a)	CWIP Capitalization	1130.7	1226.02	2356.72
(i)	Grant	574.5	374.45	948.95
(ii)	Loan	231.83	165.63	397.46
(iii)	Equity	324.38	685.95	1010.33
(b)	New Investment Capitalization	282.68	306.51	589.19
(i)	Grant	143.62	93.61	237.23
(ii)	Loan	57.96	41.41	99.37
(iii)	Equity	81.09	171.49	252.58
6	Total capitalization	1,413.38	1532.54	2945.92
(i)	Total Grant	718.12	468.06	1186.18
(ii)	Total Loan	289.79	207.04	496.83
(iii)	Equity	405.47	857.44	1262.91

Commission's Analysis:

6.13.5. The Commission had approved the capital investment plan and capitalisation in the Business plan for the control period FY 2019-20 to FY 2021-22. As per the Business plan, the approved capex and capitalisation for FY 2020-21 relating to NBPDCCL and SBPDCL is as given hereunder:

Table 251: Capex and Capitalization approved in Business Plan for NBPDCCL & SBPDCL for FY 2021-22 (in Rs. Crore)

S. No.	Particulars	NBPDCCL	SBPDCL
		Approved for FY 2020-21 (Table 6.38 of Business plan)	Approved for FY 2020-21 (Table 6.35 of Business plan)
1	Capital investment	313.78	277.99
2	Capitalization	1199.16	559.25

6.13.6. During the present Tariff proceedings, Discoms have furnished the scheme-wise details of capital expenditure and capitalisation for FY 2021-22 in Format 11 enclosed to the petition.

6.13.7. The Commission observes that projections made by Discoms in present Petition is further deviating with the approved figures. The Discoms, without furnishing any information in support of deviation in figures of capital expenditure and capitalization from Business Plan, have simply replied that Business plan is an estimate which is prepared under various assumptions keeping in mind factors like government preferences, Right of Way (RoW), man power requirement, land issues, general

elections etc., which are important factors in determination of progress of work, Due to change in the assumptions on account of these factors, capex filed is not in line with the figures approved in Business Plan.

- 6.13.8. The Commission does not satisfy with the reasoning provided by the Discoms. The Commission finds that for many schemes' capital expenditure projected for FY 2021-22 are in excess of the expenditure approved in Business Plan. This simply shows that these excessive capital expenditure projected by the petitioner are for new capital work that has to be undertaken in FY 2021-22, which have not been approved by the Commission yet, accordingly the Commission does not consider these capital expenditure and their capitalization of FY 2021-22 which have not been approved by the Commission yet.
- 6.13.9. For the purpose of projection of capital expenditure and capitalization for FY 2021-22, the Commission has restricted the same to the tune of capital expenditure and capitalization as approved in Business Plan. The Commission has considered the cumulative capital expenditure and capitalization as approved by the Commission till FY 2019-20. The Commission has then worked out the scheme wise difference of cumulative capital expenditure and capitalization as on 31 March 2020 with that of approved in Business plan. The difference so computed is to compared with the capital expenditure and capitalization as projected by the Discoms for FY 2021-22. The Commission has considered expenditure and capitalization only for those schemes in which the projection made by Discoms were within the approved limit. The excessive projections of capital expenditure and capitalization have not been considered by the Commission.
- 6.13.10. The commission has approved capital expenditure of NBDCL and SBPDCL for FY 2021-22 following the above-mentioned approach as shown in Tables below and explanations have been mentioned in the subsequent paras.

Reconductoring Scheme:

- 6.13.11. The Commission notes that, Reconductoring scheme is not approved by the Commission. In response to the justification sought by the Commission regarding capital expenditure and capitalisation towards unapproved scheme/project, the Petitioners submitted that for implementation of smart meter petition has already been filed by the Petitioner in the month of March 2020 for obtaining necessary approvals from the Commission. The Petitioner also stated that it will formulate appropriate procedures so that necessary prior approval can be taken from the Commission for each scheme undertaken by the DISCOMs.
- 6.13.12. The Commission opines that implementation of Reconductoring Scheme is in view of strengthening of distribution network to provide quality and uninterrupted 24x7 power to all. Thus, the Commission noting the fact that, petitioners have already incurred investment against the scheme without taking prior approval, the Commission after thoughtful consideration has taken the Reconductoring Scheme for projection of capitalization only for FY 2021-22 out of CWIP made till FY 2019-20. However, the

Commission is not inclined to consider any capital expenditure against the said scheme. The Commission hereby clarifies mere one-time consideration of capitalization without prior approval does not imply that the Discoms shall undertake such practice in future also. Further, the Commission reiterates its direction to petitioners to take prior approval for each scheme to be undertaken by the DISCOMs. Therefore, in view of above, the Commission disallows any proposed capital expenditure by NBPDC and SBPDCL in reconductoring scheme for FY 2021-22.

Capital Expenditure of SBPDCL:

6.13.13. SBPDCL has claimed capital expenditure in NABARD Phase VIII, NABARD Phase XI, ABD, Burnt DTR State Plan, State Plan – others and in Own source Scheme for FY 2021-22. Commission finds the capital expenditure claimed in NABARD XI, ADB, Burnt DTR, Own Source Scheme within the limit of approved capital expenditure as per Business Plan 2019.

NABARD Phase VIII

6.13.14. Total capital expenditure as approved in Business Plan for NABARD Phase VIII is Rs. 1.28 Crore. Petitioner has claimed Rs. 0.50 Crore in the said scheme for FY 2021-22. The Commission observes that, cumulative capitalisation of Rs. 4.55 Crore has already been approved by the Commission till FY 2019-20. Thus, claim of petitioner is in excess of approved capitalisation as per Business Plan 2019. Though, commission noted the fact that, above said scheme is 100% funded through grant. Thus, considering the above, the Commission approves the claim of petitioner of Rs. 0.50 crore as capitalisation for FY 2021-22.

State Plan-Others

6.13.15. Total capital expenditure as approved in Business Plan in State Plan Scheme is Rs. 582.02 Crore. The claim of petitioner is Rs. 50.00 Crore as capital expenditure in FY 2021-22. The Commission observes that, it has already approved Rs. 582.02 Crore as capital expenditure till FY 2019-20. The capital expenditure as claimed petitioner seems as over expenditure. Thus, the Commission disallows Rs. 50.00 crore of capital expenditure for FY 2021-22.

6.13.16. Thus, the Commission approves Rs. 16.50 Crore for SBPDCL as capital expenditure against claim of Rs. 66.50 Crore for FY 2021-22.

Table 252: Capex approved for SBPDCL for FY 2021-22 (in Rs. Crore)

Name of Schemes	Capital Expenditure as claimed by Petitioner for FY 2021-22	Capital expenditure as approved by the Commission for FY 2021-22
NABARD Phase VIII	0.50	0.50
NABARD Phase XI	1.00	1.00
ADB	1.00	1.00
BURNT DTR State Plan	2.00	2.00
Sate Plan- Others	50.00	

Name of Schemes	Capital Expenditure as claimed by Petitioner for FY 2021-22	Capital expenditure as approved by the Commission for FY 2021-22
Own Source	12	12
Total	66.50	16.50

Capital Expenditure of NBPDC:

6.13.17. NBPDC has claimed capital expenditure in BRGF, NABARD Phase VIII, Burnt DTR State Plan, State Plan-Others, Reconductoring, IPDS, RGGVY and APL Connection Scheme. The Commission finds capital expenditure of NABARD Phase VIII, Burnt DTR State Plan, State Plan-Others and APL Connection Scheme is within the limit of capital expenditure as approved in Business Plan.

BRGF Scheme

6.13.18. Total capital expenditure as approved in Business plan is Rs. 2740.81 Crore. Petitioner has claimed Rs. 67.68 crore in above said scheme for FY 2021-22. The Commission notes that, Rs. 2741.00 Crore has already been approved in BRGF Scheme for FY 2021-22. Thus, claim of petitioner seems to be over expenditure for FY 2021-22. Hence, the Commission disallows claim of Rs. 67.68 Crore in BRGF scheme for FY 2021-22.

Reconductoring Scheme

6.13.19. The petitioner has claimed Rs. 293.59 Crore as capital expenditure in Reconductoring Scheme for FY 2021-22. The Commission has already dealt the disallowance of capital expenditure in Reconductoring Scheme in above Para XXX. Hence, the Commission disallows claim of capital expenditure in said scheme for FY 2021-22.

IPDS Scheme

6.13.20. Total capital expenditure as approved in Business Plan for FY 2021-22 in IPDS Scheme is Rs. 78.89 Crore. The petitioner has claimed Rs. 176.02 Crore in IPDS Scheme for FY 2021-22. Claim of petitioner clearly seems on higher side of as approved in Business Plan. Thus, noting the above fact, the Commission disallows capital expenditure as claimed by petitioner.

RGGVY Scheme

6.13.21. Total capital expenditure as approved in Business Plan for FY 2021-22 in RGGVY scheme is Rs. 3983.51 Crore. The Commission notes that, cumulative capital expenditure of Rs. 3983.51 Crore has already been approved by the commission till FY 2019-20. The petitioner has claimed Rs. 6.84 Crore which seems as over expenditure in RGGVY scheme. Thus, the Commission disallows claim of petitioner for FY 2021-22.

6.13.22. Thus, the Commission approves Rs. 152.90 Crore for NBPDC as capital expenditure against claim of Rs. 697.03 Crore for FY 2021-22.

Table 253: Capex approved for NBDCL for FY 2021-22 (in Rs. Crore)

Name of Schemes	Capital Expenditure as claimed by Petitioner for FY 2021-22	Capital expenditure as approved by the Commission for FY 2021-22
BRGF	67.68	0
NABARD Phase VIII	9.00	9.00
BURNT DTR State Plan	1.80	1.80
State Plan – Others	43	43
Reconductoring	293.59	
IPDS	176.02	
RGVY	6.84	
APL Connection	99.10	99.10
Total	697.03	152.90

Capitalisation in SBPDCL:

6.13.23. The Petitioner has claimed capitalisation in Burnt DTR State Plan, State Plan-Others, Reconductoring, IPDS, RGVY, DDUGJY and Own Source Scheme. The Commission has considered claim of petitioner in burnt DTR State Plan, State Plan-others, reductoring, RGVY, DDUGJY and Own Source Scheme for FY 2021-22. The Commission has disallowed capitalisation of IPDS as discussed in para below:

IPDS Scheme

6.13.24. Total capitalisation as approved in business Plan 2019 in IPDS Scheme is Rs. 1098.17 Crore. The petitioner has claimed Rs. 800 Crore as capitalisation for FY 2021-22. The Commission notes that, cumulative capitalisation of Rs. 762.00 Crore has already been approved till FY 2021-22 in IPDS Scheme. Thus, the Commission finds claim of petitioner at more than as approved in Business Plan 2019. Hence, the Commission approves, Rs. 515.43 Crore as capitalisation in FY 2021-22.

6.13.25. Thus, the Commission approves Rs. 1128.81 Crore for SBPDCL as capitalisation against claim of Rs. 1413.38 Crore for FY 2021-22.

Table 254: Capitalization approved for SBPDCL for FY 2021-22 (in Rs. Crore)

Name of Scheme	SBPDCL	
	Capitalisation as claimed by petitioner for FY 2021-22	Capitalisation as approved by Commission for FY 2021-22
Burnt DTR State Plan	2.00	2.00
State Plan -Others	131.57	131.57
Reconductoring	106.20	106.20
IPDS	800.00	515.43
RGVY	197.91	197.91
DDUGJY	100.00	100.00
Own Sources	75.70	75.70
Total	1,413.38	1,128.81

Capitalisation in NBPDCCL

6.13.26. NBPDCCL has claimed capitalisation in BRGF, RAPDRP, NABARD Phase VIII, Burnt DTR State Plan, State Plan – Others, Reconductoring, IPDS, RGGVY, DDUGJY, APL Connection and Own Source Scheme. The Commission finds capitalisation as claimed by petitioner BRGF, NABARD Phase VIII, Burnt DTR State Plan, State Plan – Others, Reconductoring, RGGVY, DDUGJY, APL Connection and Own Source Scheme within the limit of as approved in Business Plan. The Commission has disallowed capitalisation as claimed by petitioner in RAPDRP and IPDS Scheme as discussed in para below:

RAPDRP Scheme

6.13.27. Total capitalisation as approved in Business Plan 2019 is Rs. 224.51 Crore. The petitioner has claimed Rs. 11.13 Crore as capitalisation in RAPDRP scheme for FY 2021-22. The Commission notes that, cumulative capitalisation of Rs. 228.83 Crore in has already been approved in RAPDRP scheme till FY 2019-20. Thus, the claim of petitioner as capitalisation in FY 2021-22 seems over capitalisation as compared to approved in Business Plan 2019. Hence, the Commission disapproves, capitalisation as claimed for FY 2021-22.

IPDS Scheme

6.13.28. Total capitalisation as approved in Business Plan 2019 is Rs. 7.05 Crore. The petitioner has claimed Rs. 600.00 Crore as capitalisation in IPDS scheme for FY 2020-21. The claim of petitioner is more than as approved in Business Plan 2019. Thus, the Commission disallows capitalisation as claimed by petitioner for FY 2021-22.

6.13.29. Thus, the Commission approves Rs. 921.41 Crore for NBPDCCL as capitalisation against claim of Rs. 1532.54 Crore for FY 2021-22.

Table 255: Capitalization approved for SBPDCL for FY 2021-22 (in Rs. Crore)

Name of Scheme	NBPDCCL	
	Capitalisation as claimed by petitioner for FY 2021-22	Capitalisation as approved by Commission for FY 2021-22
BRGF	315.74	315.74
R-APDRP	11.13	
NABARD Phase VIII	9.40	9.40
Burnt DTR State Plan	1.00	1.00
State Plan -Others	314.59	314.59
Reconductoring	136.00	136.00
IPDS	600.00	
RGGVY	9.10	9.10
DDUGJY	50.00	50.00
APL Connection	60.47	60.47
Own Sources	25.11	25.11
Total	1,532.54	921.41

Table 256: Summary of CWIP and source of funding approved for SBPDCL & NBPDCCL for FY 2021-22 (in Rs. Crore)

Particulars	Approved for FY 2021-22 (NBPDCCL)	Approved for FY 2021-22 (SBPDCL)
Opening CWIP	6,573.37	4,156.30
Adjustment in opening		
New Investment	152.90	16.50
Less: Capitalisation (4+5)	921.41	1,128.81
Opening CWIP		
New Investment		
Closing CWIP (1+2-3)	5,804.86	3,043.99
Funding		
Total Grant (9+13)	108.06	547.38
Total Equity (10+14)	242.73	156.18
Total Loan (11+15)	570.62	425.25

6.14. Gross Fixed Assets

SBPDCL and NBPDCCL' submission:

6.14.1. Discoms have submitted the computation of GFA based on the opening GFA and capitalisation for FY 2021-22 as detailed in the tables below:

Table 257: GFA projected for SBPDCL for FY 2021-22 (Rs. Crore)

Sl. No.	Assets group	Closing balance at the end of Previous Year	Addition during ensuing year	Closing balance at the end of ensuing year
1	Land and land rights	1,642.35	191	1,833.35
2	Buildings	145.73	18.88	164.6
3	Hydraulic works	1.05	0.14	1.19
4	Other civil works	46.25	5.66	51.91
5	Plant and Machinery	2,590.64	325.2	2,915.84
6	Lines and cable network	6,810.30	849.94	7,660.24
7	Vehicles	1.42	0.17	1.59
8	Furniture and Fixtures	5.72	0.71	6.43
9	Office equipment	158.13	21.5	179.63
10	Spare unit/service unit	1.27	0.15	1.41
11	Assets taken over from licensees pending final valuation	0.34	0.04	0.38
	Total	11,403.20	1,413.38	12,816.58

Table 258: GFA projected for NBPDC for FY 2021-22 (Rs. Crore)

Sl. No.	Assets group	Closing balance at the end of Previous Year	Addition during ensuing year	Closing balance at the end of ensuing year
1	Land and land rights	1,072.56	98.47	1,171.04
2	Buildings	44.38	6.71	51.09
3	Hydraulic works	0	0	0
4	Other civil works	73.05	10.2	83.25
5	Plant and Machinery	1,980.91	228.81	2,209.72
6	Lines and cable network	11,057.16	1,181.33	12,238.48
7	Vehicles	1.02	0.11	1.13
8	Furniture and Fixtures	4.46	0.65	5.11
9	Office equipment	33.01	5.87	38.88
10	Spare unit/service unit	4.36	0.4	4.76
	Total	14,270.92	1,532.54	15,803.46

Commission's Analysis

- 6.14.2. The Commission has adopted the opening GFA for FY 2021-22 same as closing GFA approved for FY 2020-21 in review and further updated with the capitalisation considered for FY 2021-22 in the Paras above.
- 6.14.3. The Commission has arrived at the opening GFA, additions to GFA and closing GFA for control period as detailed in the Table below:

Table 259: GFA of NBPDC & SBPDCL for FY 2021-22 as approved by the Commission (Rs. Crore)

Particulars	NBPDC	SBPDCL
	FY 2021-22	FY 2021-22
Opening GFA	14,966.09	12,591.05
Net Additions during the year	921.41	1,128.81
Closing GFA	15,887.50	13,719.86

6.15. Depreciation

SBPDCL and NBPDC's submission:

- 6.15.1. Discoms have submitted that depreciation is computed annually on straight line method by applying weighted average rate of depreciation on the average GFA in accordance with Regulation 23 of BERC (Multi Year Distribution Tariff) Regulations 2018. Discoms have further submitted that the depreciation on assets created out of grants is reduced from the gross depreciation to arrive at the net depreciation to be charged.

6.15.2. Discoms have projected the depreciation for FY 2021-22 as detailed in the Table below:

Table 260: Depreciation projected for FY 2020-21 (Rs. Crore)

Particulars	NBPDC	SBPDCL	Total
Gross fixed assets of the beginning of the year	13,198.35	9,760.85	22,959.20
Additions during the year	1,434.07	1,222.38	2,656.45
IDC	-	-	
Adjustment for assets sold/discarded etc.	-	-	
Closing GFA	14,632.41	10,983.22	25,615.63
Average GFA	13,915.38	10,372.04	24,287.42
Weighted Average Rate of Depreciation	3.95%	4.78%	8.73%
Gross Depreciation at the end of the year	550	495.29	1045.29
Opening grants	8,000	4,595.89	12,596
Grants during the year	427	619.57	1046.57
Adjustment for assets sold/discarded etc.			0
Total Grants	8,426	5,215.45	13,641
Average Grants	8,213	4,905.68	13,119
Weighted Average rate of Depreciation	3.52%	5.23%	8.75%
Depreciation for GFA on Grants	288.73	256.68	545.41
Net Depreciation of GFA on loans (8-15)	261.24	238.61	499.85

Commission's Analysis:

- 6.15.3. The Commission has considered closing depreciable assets approved in review for FY 2020-21 as the opening depreciable assets for FY 2021-22 for NBPDC and SBPDCL. Addition to assets during FY 2021-22 is considered as approved in this Order for FY 2021-22. Addition to land value as projected by the Petitioners in the format 14 of the petition is reduced from the additions for computation of depreciation.
- 6.15.4. The Commission has considered opening grants for FY 2021-22 based on the closing grants approved in review for FY 2020-21 and further updated based on the funding of capitalisation approved in this Order.
- 6.15.5. The Commission has provisionally adopted weighted average rate of depreciation on asset and grants based on actual weighted average rate of depreciation at as per the audited accounts for FY 2019-20 as considered in the True-up.
- 6.15.6. The Commission in terms of regulation 23 of the BERCL (Multi Year Distribution Tariff) Regulations 2018 has computed the depreciation for FY 2021-22 as detailed in the Table below:

Table 261: Depreciation approved for FY 2021-22 (Rs. Crore)

Particulars	NBPDCCL	SBPDCL
	Approved for FY 2021-22	Approved for FY 2021-22
Opening GFA balance for FY 2021-22	14,951.84	12,591.05
Less: Value of land	1,069.30	1,641.42
Net opening GFA (excl. land value)	13,896.77	10,949.63
Additions during the year (excl. value of land)	849.45	981.65
Adjustment of assets sold/ discarded	0.00	0.00
Closing GFA balance of depreciable asset for FY 2021-22	14,746.23	11,931.29
Average GFA	14,321.48	11,440.46
Weighted average rate of depreciation	4.19%	4.86%
Depreciation for the Year	600.00	555.52
Net opening grant balance (excl. value of land)	9,132.56	5,898.50
Grant added during year (excl. value of land)	99.72	476.02
Closing Grants balance for FY 2021-22 (excl. value of land)	9,232.29	6,374.52
Average Grants	9,182.45	6,136.51
Weighted average rate of Depreciation	4.19%	4.86%
Depreciation for GFA on Grants	384.70	297.97
Net Depreciation	215.30	257.54

6.16. Interest on Loans

SBPDCL and NBPDCCL' submission:

6.16.1. The Discoms submitted that the calculation of interest on Project loans is as per Regulation 25 of the BERC Multi-Year Tariff Regulations 2018 and provided detailed loan schedule depicting the Loans and their additions and repayment during the year. Detailed Loan schedule for FY 2021-22 is provided in the Tables below:

Table 262: Detailed loan schedule for FY 2021-22 submitted by NBPDCCL (Rs. Crore)

Particulars	Purpose of loan	Opening balance	Rate of Interest	Addition during the year	Repayment during the year	Closing balance	Average Balance	Amount of interest paid
REC (RGGVY)	Project	143.79	10.33%	-	13	130.79	137.29	14.59
Term Loan								
REC (R-APDRP)	Project	314.33	10.40%	-	34.93	279.4	296.87	29.66
Term Loan								

Particulars	Purpose of loan	Opening balance	Rate of Interest	Addition during the year	Repayment during the year	Closing balance	Average Balance	Amount of interest paid
PFC (R-APDRP)	Project	360.82	9.00%	-	-	360.82	360.82	32.47
Term Loan								
REC (IPDS) Term Loan	Project	342	10.19%	-	-	342	342	34.85
REC (DDUGJY) Term Loan	Project	700.02	10.19%	-	-	700.02	700.02	71.33
State Govt.- Non- Plan Loan	Project Support	94.43	10.50%	27.59	-	122.02	108.23	11.36
BSPHCL (ADB) Loan	Project	6.28	10.50%	-	-	6.28	6.28	0.66
Total		1,961.67		27.59	47.93	1,941.33	1,951.50	194.92
Weighted Average rate of Interest								10.03%

Table 263: Detailed loan schedule for FY 2021-22 submitted by SBPDCL (Rs. Crore)

Particulars	Purpose of loan	Opening balance	Rate of Interest	Addition during the year	Repayment during the year	Closing balance	Average Balance	Amount of interest paid
REC (RGGVY) Term Loan	Project	166.62	10.50%	-	-	166.62	166.62	17.5
PFC (R-APDRP) Part -A Term Loan	Project	13.69	9%			13.69	13.69	1.23
PFC(R-APDRP) Part -B Term Loan	Project	48.21	9%		2	46.21	47.21	3.76
PFC (Counter Part) Term Loan	Project	85.79	11%	-	7	78.79	82.29	9.23
PFC (BRGF) Term Loan	Project	-	-			-	-	-
REC (BRGF) Term Loan	Project	-	-			-	-	-
REC (DDUGJY) Term Loan	Project	800	10.22%			800	800	104.06
REC (IPDS) Term Loan	Project	199.98	10.22%			199.98	199.98	32.44
State Govt.- Non- Plan Loan	Project Support	237.9	10.50%			237.9	237.9	24.98

Particulars	Purpose of loan	Opening balance	Rate of Interest	Addition during the year	Repayment during the year	Closing balance	Average Balance	Amount of interest paid
BSPHCL (ADB)	Project	56.01	10.50%			56.01	56.01	5.88
Loan								
Total		1,608.21		-	9	1,599.21	1,603.71	199.08
Weighted average rate of Interest								10.28%

6.16.2. Petitioners have computed interest on normative debt on the 70% of the amount of capital assets reduced by the value of grants and depreciation representing normative repayment, as shown in the Table below:

Table 264: Interest on loans projected for FY 2021-22 (Rs. Crore)

Particulars	SBPDCL	NBPDCCL
Opening loan balance	2,612.97	3,070
Additions during the year	486.68	745
Normative Repayment	238.61	261
Closing Loans (1+2-3)	2,861.05	3,554
Average Loans $\{(1+4)/2\}$	2,737.01	3,312
Interest rate	10.03%	10.28%
Interest Charges (5*6)	274.52	340.39

Commission's Analysis:

6.16.3. The Commission has computed interest on loan for FY 2021-22 as per Regulation 25 of the BERC (Multi Year Distribution Tariff) Regulations 2018. The Commission has considered opening loan for FY 2021-22 based on the closing loan approved for NBPDCCL and SBPDCL in review for FY 2020-21.

6.16.4. Further, the Commission has considered the addition to loan based on the funding of capitalisation and grants in line with Regulation 25(j) as given in the Table below:

Table 265: Debt Equity considered for FY 2021-22 (Rs. Crore)

Sl. No.	Particulars	NBPDCCL	SBPDCL
1	Net Capitalisation during FY 2021-22	921.41	1,128.81
2	Less: Capitalisation through Grants	108.06	547.38
3	Net Capitalisation	813.35	581.43
4	Normative Equity @30% or actual equity infuse, whichever is less	242.73	156.18
5	Normative Loan (5-6)	570.62	425.25

6.16.5. The Commission, in terms of Regulation 25(e) of BERC (Multi Year Distribution

Tariff) Regulations 2018, has considered repayment of loan equal to the depreciation allowed for the year 2021-22 in this Order. Further, the Commission, in review for FY 2020-21, had approved interest on loan based on opening actual loan portfolio for FY 2020-21. The Commission provisionally considers the same rate of interest for FY 2021-22 as approved in review of FY 2020-21 subject to True-up. Accordingly, the Commission has computed the interest on loan for FY 2021-22 as shown in the Table below:

Table 266: Interest on loan considered for FY 2021-22 (Rs. Crore)

S. no.	Particular	NBPDCCL	SBPDCL
		Considered for FY 2021-22	Considered for FY 2021-22
1	Opening loan balance	3,126.46	2,792.22
2	Additions during the year	570.62	425.25
3	Normative Repayment	215.30	257.54
4	Closing Loans (1+2-3)	3,481.78	2,959.93
5	Average Loans {(1+4)/2}	3,304.12	2,876.08
6	Interest rate	10.30%	10.06%
7	Interest Charges (5*6)	340.46	289.32

6.16.6. The Commission, accordingly, approves interest on loan for FY 2021-22 as detailed in the Table above.

6.17. Other Finance Charges

SBPDCL and NBPDCCL' submission:

6.17.1. Discoms are incurring other Finance charges, i.e., Discount to consumers for timely payment of bills, power factor rebate, interest to suppliers/contractors etc. Discoms are claiming other Finance charges by escalating the charges estimated for FY 2020-21 by 10% for FY 2021-22, as shown in the Table below:

Table 267: Other finance charges projected for FY 2021-22 (Rs. Crore)

Sl. No.	Particulars	Projected by NBPDCCL	Projected by SBPDCL
1	Other finance charges approved for FY 2019-20	63.43	38.58
2	escalation @ 10%	6.34	3.85
3	Total	69.77	42.44

Commission's Analysis:

6.17.2. The Commission has considered the other finance charges approved in review for FY 2020-21 as base expenses for FY 2021-22 and escalation @10% provisionally for FY 2021-22 in line with the escalation factor considered for the control period in Tariff Order dated 25 February, 2019. The Commission accordingly considers Other finance charges for FY 2021-22 as given in the Table below:

Table 268: Other finance charges approved for FY 2021-22 (Rs. Crore)

Sl. No.	Particulars	Approved for NBPDC	Approved for SBPDCL
1	Other finance charges approved for FY 2019-20	38.58	63.43
2	Escalation @ 10%	10%	10%
3	Total	42.44	69.77

6.17.3. The Commission, accordingly, approves other finance charges for FY 2021-22 as detailed in the Table above.

6.18. Return on Equity

SBPDCL and NBPDC' submission:

6.18.1. Discoms have submitted that Return on Equity has been calculated and projected for FY 2020-21 in terms of regulation 27 of the BERC (Multi Year Distribution Tariff) Regulations 2018 as detailed in the Table 6.47 below:

Table 269: Return on Equity projected by Petitioners for FY 2021-22 (Rs. Crore)

Particulars	NBPDC	SBPDCL
Closing equity to end of 31.03.2016	440.86	638.06
Rate of return on equity %	14%	14%
Rate of Return on Equity (On Pre-tax Basis)	14%	14%
Return on Equity	61.72	89.33
Equity with effect from 1st April 2016		
Opening equity	1336.39	1146.74
Equity Addition during the year	319.34	208.58
Closing Equity	1665.73	1355.32
Average Equity	1496.06	1251.03
Rate of return on equity with effect from 1.4.2016	15.50%	15.50%
Rate of Return on Equity (On Pre-tax Basis)	15.50%	15.50%
Return on Equity	231.89	193.91
Total Return on Equity	293.61	283.24

Commission's Analysis:

6.18.2. The Regulation 27 of the BERC (Multi Year Distribution Tariff) Regulations, 2018 specifies that RoE shall be allowed @ 14% on the equity base as on 31 March, 2016 and @ 15.50% on the equity w.e.f. 01 April, 2016.

6.18.3. The Regulation 27(c) of BERC (Multi Year Distribution Tariff) Regulations, 2018 stipulates that Return on Equity shall be computed at the rate of 15.5% for the project which is commissioned w.e.f. 01 April, 2016. However, Return on Equity for the projects commissioned prior to 01 April, 2016 shall be allowed at the rate of 14%.

- 6.18.4. Accordingly, the Commission had bifurcated the equity into two periods, i.e., equity on assets commissioned prior to 1 April, 2016 and equity on asset commissioned after 1 April, 2016. Accordingly, the Commission has considered the opening equity for the assets commissioned prior to 1 April, 2016 at the same level as considered in review of FY 2020-21. As regards projects commissioned since 1 April 2016, the Commission has considered closing balance of equity as approved in review of FY 2020-21 as opening equity balance for FY 2021-22. Further, Commission has considered the addition to equity during FY 2021-22 in line with the capitalization approved in this Order for FY 2021-22.
- 6.18.5. Regulation 29 of BERC (Multi Year Distribution Tariff) Regulations, 2018 provides for the grossing up of the base Return on Equity for the effective tax rate of the respective year. In line with the reasons detailed in Section for approval of Return on equity in review of FY 2020-21 in this Order, the Commission has considered RoE at 15.5% without considering the effect of IT for future FYs.
- 6.18.6. The Commission accordingly has considered opening equity and in terms of Regulation 27(c) has considered Rate of RoE at 14% on equity up to 31 March, 2016 and 15.50% on equity w.e.f. 01 April, 2016. Accordingly, the Commission has computed the Return on Equity as shown in Table below:

Table 270: Return on Equity approved for FY 2021-22 (Rs. Crore)

S no.	Particulars	NBPDC	SBPDCL
		Approved for FY 2021-22	Approved for FY 2021-22
1	Closing equity to end of 1.03.2016	440.86	638.06
2	Rate of return on equity %	14.00%	14.00%
3	Return on Equity	61.72	89.33
Equity with effect from 1st April 2016			
4	Opening equity	1,189.30	964.62
5	Equity Addition during the year	242.732	156.184
6	Closing Equity	1,432.03	1,120.81
7	Average Equity	1,310.67	1,042.71
8	Rate of return on equity with effect	15.50%	15.50%
9	Return on Equity	203.15	161.62
10	Total Return on Equity (3+9)	264.87	250.95

6.19. Contribution to Contingency Reserve

Commission's Analysis:

- 6.19.1. Regulation 24 of the BERC (Multi Year Distribution Tariff) Regulations, 2018 stipulates as under:

“if the distribution licensee has made an appropriation to the Contingency Reserve, a sum not less than 0.25 per cent and not more than 0.5 per cent of the original cost of fixed assets shall be allowed annually towards such appropriation in the calculation of

ARR”.

- 6.19.2. The Commission has approved contingency reserve of Rs.98.62 Crore for NBPDC and Rs.81.73 Crore for SBPDCL for FY 2021-22 in the Tariff order dated 25 February, 2019. However, the Discoms have not proposed appropriation to Contingency Reserve for FY 2021-22 in the Petition. Hence, the Commission has not considered contingency reserve for FY 2021-22.

6.20. Operation and Maintenance Expenses

I. Employee Costs

SBPDCL and NBPDC' submission:

- 6.20.1. Petitioners have submitted that, in terms of Regulation 22 of the BERC (Multi Year Distribution Tariff) Regulations 2018, the Commission had determined Employee for the MYT control period of FY 2019-20 to FY 2021-22 in the Tariff Order dated 20 February, 2019. Accordingly, the employee cost computed for 2021-22 is shown in the Table below:

Table 271: Employee Cost projected for FY 2021-22 (Rs. Crore)

Sr. No	Particulars	NBPDC		SBPDCL	
		Base Value	FY 2021-22	Base Value	FY 2021-22
1	Average annual CPI index		5.34%		5.34%
2	Norms-Number of personnel per 1000 consumers	0.1676	0.1676	0.2667	0.2667
3	Norms-Number of personal per substation	16.2870	16.287	19.4782	19.4782
4	No. of consumers (1000)		11145		638
5	No of substations		600		590
6	Annual expenses per personnel (Rs. Cr)	0.0306	0.0433	0.0486	0.0512
7	Employee cost per 1000 consumers		80.85		87.15
8	Employee cost per substation		422.95		588.09
9	Total Employee cost		503.8		675.24

Commission's Analysis:

- 6.20.2. The Commission in terms of Regulation 22 of the BERC (Multi Year Distribution Tariff) Regulations 2018 had determined norm (Table 7.65 for SBPDCL and Table 7.67 for NBPDC) for the MYT Control Period of FY 2019-20 to FY 2021-22 in the Tariff Order dated 15 February, 2019 as already deliberated under Commission's analysis at paras above. The norm of annual expenses per personnel is considered based on the norm considered for FY 2020-21 in review. The base value of employee cost norm arrived for FY 2021-22 is as given in the Table below:

Table 272: Employee Cost Norms for FY 2021-22

Particulars	Base Value for NBPDC	Base Value for SBPDCL
No. of personnel per 1000 consumers	0.1676	0.2667
No. of personnel per Sub-station	16.287	19.4782
Annual expenses per personnel (Rs. Crore) as considered for FY 2020-21 in review	0.0336	0.0479

- 6.20.3. The number of consumers for FY 2021-22 has been considered as approved by the Commission earlier in this Section. Further, the Commission has considered actual number of substations as considered in the True-up for FY 2021-22, subject to True-up.
- 6.20.4. The Regulation 22 (g) specifies that the norms determined at constant prices of base year shall be escalated on account of inflation. The Commission, in terms of Regulation 22.1, has computed average increase in the Consumer Price Index (CPI) at 5.34% for FY 2020-21 based on immediately preceding three years and the same is adopted for projecting employee expenses for FY 2021-22 as well. Accordingly, the Commission has computed the employee expenses for NBPDC and SBPDCL for FY 2021-22 as detailed in the Table below:

Table 273: Normative Employee Expense as approved for FY 2020-21

S. No.	Particulars	NBPDC		SBPDCL	
		Base Value	Approved in this Order	Base Value	Approved in this Order
1	Average CPI inflation		5.34%		5.34%
2	Norms-Number of personnel per 1000 consumers	0.1676	0.1676	0.2667	0.2667
3	Norms-Number of personal per substation	16.287	16.287	19.4782	19.4782
4	No. of consumers (1000)		11145		6386
5	No of substations		548		525
6	Annual expenses per personnel (Rs. Crore) as considered for FY 2020-21 in review	0.0336	0.0354	0.0479	0.0505
7	Employee cost on the norms of 1000 consumers (2*4*6) (Rs. Crore)		66.12		86.00
8	Employee cost based on norms of substation (3*5*6) (Rs. Crore)		315.95		516.42
9	Total Employee cost (Rs. Crore)		382.08		602.42

- 6.20.5. The Commission, accordingly, approves the employee expenses for FY 2021-22 as

computed in the Table above.

II. Administration and General (A&G) Expenses

SBPDCL and NBPDC' submission:

6.20.6. Petitioners submitted that, in terms of Regulation 22 of BERC (Multi Year Distribution Tariff) Regulations 2018, the Commission had determined Employee and A&G norm for the MYT Control Period of FY 2019-20 to FY 2021-22 in the Tariff Order dated 20 February, 2019. Accordingly, the A&G computed for 2021-22, is shown in the Table below:

Table 274: Administration & General expenses projected for FY 2021-22 (Rs. Crore)

Sr.No	Particulars	NBPDC		SBPDCL	
		Base Value	FY 2021-22	Base Value	FY 2021-22
1	Average annual WPI CPI index		2.95%		2.95%
2	Norms-A&G expenses per 1000 consumers	1.1174	1.1174	1.778	1.778
3	No. of consumers (1000)		11145		6386
4	No of employees		10855		12435
5	Annual expenses per 1000 consumers (Rs. Cr)	0.004978	0.0087	0.00356	0.01126
6	Annual expenses per employee (Rs. Cr)	0.007576	0.0103	0.00942	0.00666
7	A&G cost per 1000 consumers		97.39		71.83
8	A&G cost per employee		111.56		82.78
9	Total A&G cost		208.96		154.69

Commission's Analysis:

6.20.7. The Commission in terms of Regulation 22 of BERC (Multi Year Distribution Tariff) Regulations 2018, had determined A&G expense norm (Table 7.72 for NBPDC and Table 7.74 for SBPDCL) for the MYT Control Period of FY 2019-20 to FY 2021-22 in the Tariff Order dated 15 February, 2019 as already deliberated under Commission's analysis at earlier section of this Order.

6.20.8. The norm of annual A&G expense per 1000 consumers and A&G expense per personnel is considered based on the norm considered for FY 2020-21 in APR. The base value of A&G expense norm arrived for FY 2021-22 is as given in the Table below:

Table 275: Norms for A&G Expenses

Particular	A&G Expense Norms of NBPDC	A&G Expense Norms of SBPDCL
Norms - Number of personnel per 1000 consumers	1.1174	1.778
Annual A&G expense per 1000 consumers (Rs. Crore)	0.00530	0.00380
Annual A&G expense per personnel (Rs. Crore) as considered for FY 2020-21 in review	0.00800	0.01000

6.20.9. The Regulation 22 (g) specifies that the norms determined at constant prices of base year shall be escalated on account of inflation. Accordingly, the Commission has considered the average increase in the Wholesale Price Index (WPI) at 2.96% in line with the WPI index considered in review for FY 2020-21.

6.20.10. For computing the normative A&G Expenses for FY 2021-22, the Commission has considered the base value of norms for number of employees per 1000 consumers as specified in the MYT Order. The number of consumers for FY 2021-22 has been considered as approved in this Order for FY 2021-22. Annual A&G expense per 1000 consumers and Annual A&G expense per personnel for FY 2021-22 has been computed by escalating the base value by WPI inflation computed. Accordingly, the Commission has worked out the Normative A&G expense as shown in the Table below:

Table 276: Administration & General expenses approved for FY 2021-22 (Rs. Crore)

Sr. No	Particulars	NBDCL		SBPDCL	
		Base Value	FY 2021-22	Base Value	FY 2021-22
1	Average annual WPI CPI index		2.96%		2.96%
2	Norms-A&G expenses per 1000 consumers	1.1174	1.1174	1.778	1.778
3	No. of consumers (1000)		11,145.21		6,385.59
4	No of employees		12,453.66		11,354.00
5	Annual expenses per 1000 consumers (Rs. Cr)	0.00530	0.00550	0.00380	0.00390
6	Annual expenses per employee (Rs. Cr)	0.00800	0.00820	0.01000	0.01030
7	A&G cost per 1000 consumers		61.30		24.90
8	A&G cost per employee		102.12		116.95
9	Total A&G cost		163.42		141.85

III. Repairs and Maintenance (R&M) Expenses

SBPDCL and NBDCL' submission:

6.20.11. Petitioners have submitted that the Regulation 22.2 of the BERC (Multi Year Distribution Tariff) Regulations 2018, specifies R&M expenses as percentage (as per the norm determined) of Gross Fixed Assets excluding land cost for the year. The Commission had determined the R&M norm i.e. 'K' factor at 1.66% for NBDCL and 2.16% for SBPDCL for the MYT control period of FY 2019-20 to FY 2021-22 in the Tariff Order dated 25 February, 2019. The detailed computation of R&M expenses for the FY 2021-22 is shown below:

Table 277: R&M Expenses projected by Petitioners for FY 2021-22 (Rs. Crore)

Sr.No	Particulars	NBDCL	SBPDCL
1	Opening GFA	14,270.92	11,403.2
2	Opening Land Cost	1,072.56	1,642.35
3	Opening GFA exc land cost	13,198.35	9,760.85
4	K Factor	1.66%	2.16%

5	R&M Expense	219.09	210.83
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Commission’s Analysis:

6.20.12.Regulation 22.2 of the BERC (Multi Year Distribution Tariff) Regulations 2018, specify R&M expenses as percentage (as per the norm determined) of Gross Fixed Assets excluding land cost for the year. The Commission has considered opening GFA (excluding land) as approved in earlier in this Section.

6.20.13.The Commission had determined the R&M norm i.e. ‘K’ factor at 1.66% for NBPDC & 2.16% for SBPDCL for the MYT control period of FY 2019-20 to FY 2021-22 in the Tariff Order dated 25 February, 2019 as deliberated under Commission’s analysis in earlier section of this Order. Same has been considered by the Commission as ‘k’ factor for FY 2021-22. Accordingly, the Commission has computed the R&M expenses adopting ‘K’ factor on the Opening GFA for FY 2021-22 as detailed in the Table below:

Table 278: R&M Expenses approved for FY 2021-22 (Rs. Crore)

Particulars	NBPDC	SBPDCL
Opening GFA excluding land cost	13,896.77	10,949.63
K Factor	1.66%	2.16%
R&M Expense	230.45	236.51

VI. Allocation of Holding Company Expenses

SBPDCL and NBPDC’s submission:

6.20.14.Discoms have projected the Holding Company expenses with escalation @ 10% for FY 2021-22 as given in Table below:

Table 279: Holding company Expenses projected by Petitioners for FY 2021-22 (Rs. Crore)

Particulars	NBPDC	SBPDCL
Previous year expenses	23.78	25
Inflation rate considered	10%	10%
Inflationary increase	2.37	2.5
Total	26.16	27.5

Commission’s Analysis:

6.20.15.The Holding Company Expenses represent employee cost, R&M expenses and A&G expenses. Accordingly, the Commission has projected the holding company expenses based on the expenses considered in review for FY 2020-21 with CPI inflationary increase of 5.34% for FY 2021-22.

6.20.16. Accordingly, the Commission approved the Holding Company Expenses in terms of Bihar State Electricity Reforms Transfer Scheme, 2012 for NBPDCCL and SBPDCL as shown in the Table below:

Table 280: Holding Company Expenses approved for FY 2021-22 (Rs. Crore)

Particulars	NBPDCCL	SBPDCL
Holding company expenses considered for FY 2020-21 (RE)	22.77	23.94
Escalation % considered	5.34%	5.34%
Increase Considered	1.22	1.28
Total Holding Company Expense	23.99	25.22

6.20.17. The Commission, accordingly, approves Holding company expenses for FY 2021-22 as detailed in the Table above.

Summary of Operation and Maintenance (O&M) Expenses

Commission's Analysis:

6.20.18. Based on the component wise approval of O&M Expenses for NBPDCCL and SBPDCL in preceding paragraphs, the summary of approved O&M Expenses is shown in the Table below:

Table 281: Total O&M cost approved for FY 2021-22 (Rs. Crore)

Sl. No.	Particulars	NBPDCCL	SBPDCL	Total
1	Employee cost	382.08	602.42	984.50
2	R&M expenses	230.45	236.51	467.20
3	A&G Expenses	163.42	141.85	305.27
4	Holding Company expenses	23.99	25.22	49.21
5	Total O& M cost	799.94	1,006.00	1,806.18

6.20.19. The Commission, accordingly, approves total O&M expenses for FY 2020-21 as detailed in the Table above.

6.21. Interest on Security Deposit

SBPDCL and NBPDCCL' submission:

6.21.1. Discoms have submitted that interest on Security Deposit amount has been claimed as per the Regulation 26 of the BERC (Multi Year Distribution Tariff) Regulations 2018. The Petitioner has taken closing balance for FY 2020-21 as opening balance for FY 2021-22. The additions are assumed as per the Audited financial statement for FY 2019-

20 i.e. Rs. 63.49 Crore. The interest on consumer security deposits calculated at the rate of 4.25% which is the RBI bank rate as on 4 December, 2020, as shown in the Table below:

Table 282: Interest on Consumer Security Deposit projected by the Petitioners for FY 2021-22

S. No.	Particulars	NBDCL	SBPDCL
1	Opening Security Deposit	694	694
2	Addition / (Deletion) during the year	63.49	63.49
3	Closing Security Deposit	757.5	757.5
4	Average Security Deposit (1+3)/2	725.77	725.77
5	RBI Bank Rate	4.25%	4.25%
6	Interest on Security Deposit	30.85	30.85

Commission's Analysis:

6.21.2. Regulation 26 of the BERC (Multi Year Distribution Tariff) Regulations 2018 stipulates as under:

“provided further that interest shall be allowed on consumer security deposits and security deposits from Distribution system users at the Bank Rate as of the date on which the petition for determination of tariff is accepted by the Commission”.

6.21.3. The Commission has considered opening SD from consumer for FY 2021-22 based on the closing SD approved in review for FY 2020-21. Year on year addition to security deposit is considered at the same level of addition to SD considered in True up for FY 2019-20 based on the audited accounts. The rate on interest is considered as per RBI Bank rate prevailing on date of filing of Petition of 4.25 %.

6.21.4. The Commission considers interest on consumer's security deposit for FY 2021-22 as given in the Table below:

Table 283: Interest on Security Deposit approved for FY 2021-22 (Rs. Crore)

S. No.	Particulars	NBDCL	SBPDCL
1	Opening Security Deposit	442.70	694.02
2	Addition / (Deletion) during the year	41.49	63.50
3	Closing Security Deposit	484.19	757.51
4	Average Security Deposit (1+3)/2	463.45	725.77
5	RBI Bank Rate	4.25%	4.25%
6	Interest on Security Deposit	19.70	30.85

6.22. Non-Tariff Income

SBPDCL and NBPDC's submission:

- 6.22.1. The Petitioners have projected the Non-Tariff income taking the amount estimated in Annual performance review of FY 2020-21 and then escalating the same by 20%. Petitioners, however, submitted that the deemed rebate on power purchase is considered to be 1% of the total power purchase cost. Therefore, the effective increase in Non-tariff income comes to be ~19%. Accordingly, the Petitioners have projected the Non-Tariff Income for FY 2020-21 as shown in the Table below:

Table 284: Non-tariff income projected by the Petitioners for FY 2021-22 (Rs. Crore)

Particulars	NBPDC	SBPDCL
Base Non-tariff Income	439.06	421.42
Rate of Increase	19%	10%
Increase in Non-tariff Income	81.66	41.03
Sub-total	520.15	462.46
Less:-Interest on funding of DPS	186	83.03
Total non-tariff income	334.44	379.43

Commission's Analysis:

- 6.22.2. The Commission has abolished meter rent w.e.f. 1 April, 2020, accordingly, no income is considered towards meter rent in Non-Tariff income for FY 2021-22.
- 6.22.3. The Commission has considered rebate at 1% of the total power purchases (including transmission charges) as non-tariff income for FY 2021-22 in accordance with the judgement of the APTEL in Appeal no.153 of 2009 between North Delhi Power Ltd. Vs Delhi Electricity Regulatory Commission.
- 6.22.4. Further, in this Order the Commission has directed the Petitioners to ensure 100% collection efficiency. In view of the above direction of the Commission, it is envisaged that there will not be delayed payment surcharge. Therefore, the same was not considered by the Commission for FY 2021-22.
- 6.22.5. The Commission has observed that NBPDC has considered 1% of power purchase cost as the rebate and discount received. Further, NBPDC has considered escalation rate of 19% on certain components of non-tariff income and has considered 20% escalation rate for remaining components of the non-tariff income (i.e., except for "Rebate and Discount Received"). The Commission in its Tariff Order dated 1 April, 2020 has considered escalation rate of 20% for projecting the non-tariff income for FY 2019-20 and FY 2020-21. In view of the above, the Commission has considered the year-on-year escalation as 20% (i.e., except on "Rebate and Discount Received").
- 6.22.6. The Commission has considered the Non-Tariff Income approved in review for FY 2019-20 as base year non-tariff income and further considered escalation @ 20% for

FY 2020-21.

6.22.7. Therefore, the same has not been considered in projecting the Non-Tariff Income for FY 2021-22. Based on the above, the Non-Tariff Income for FY 2021-22 is as shown in the Table below:

Table 285: Non-tariff income considered by the Commission for FY 2021-22 (Rs. Crore)

Particulars	NBPDCCL	SBPDCL
Base Non-tariff Income (except rebate)	119.89	268.13
Rate of Increase	20%	20%
Non-tariff Income (@20 escalation)	143.87	321.75
Add:-Rebate and Discount	69.05	80.48
Total non-tariff income	212.92	402.23

6.23. Interest on Working Capital

SBPDCL and NBPDCCL' submission:

6.23.1. The Petitioners submitted that they have estimated the amount towards interest on Working capital for FY 2021- 22 as per the Regulation 26 of the BERC (Multi Year Distribution Tariff) Regulations, 2018. Further, Petitioners submitted that they have considered two months equivalent expected revenue and 40% of one month of R&M expense as specified in the above Regulation which was further deducted by Power Purchase cost along with transmission charges for one month, depreciation, ROE, contingency reserve for 2 month, consumer security deposit.

6.23.2. Petitioners submitted that have not deducted any amount towards disallowed power purchase from working capital requirement taking into consideration the revised AT&C loss trajectory as submitted to MoP, GoI. Therefore, there will be no State government fund allocated towards disallowance of power purchase cost. In the light of the above explanation, the interest on working capital is calculated @ 7.75%, which is SBI one-year MCLR on which 150 basis point is further added as per the prevailing Regulations to reach at a rate of 9.25%. The detailed working for the interest on working capital requirement is provided in the Table below:

Table 286: Interest on working capital projected for FY 2020-21 (Rs. Crore)

Sr. No	Particulars	SBPDCL	NBPDCCL
1	Two months equivalent expected revenue	1,763.06	1,518.75
2	Maintenance spares @40% of R&M expenses for one month	7.03	7.3
3	Sub-total (1+2)	1,770.08	1,526.05
4	Less:		
(i)	Power purchase cost, transmission charges and load dispatch charges of one month	747.51	624.81

Sr. No	Particulars	SBPDCL	NBPDC
(ii)	Depreciation, return on equity and contribution to contingency reserve to two months	86.97	92.48
(iii)	Amount of security deposits from consumers	694.02	442.7
5	Sub-total (4(i)+4(ii)+4(iii))	1,528.51	1,159.98
6	Net working capital requirement (3-5)	241.58	366.07
7	Rate of interest %	9.25%	9.25%
8	Interest on working capital (6*7)	22.35	33.86

Commission's Analysis:

- 6.23.3. The Commission has computed the interest on working capital as per the norms prescribed in Regulation 26 of the BERC (Multi Year Distribution Tariff) Regulations 2018. The rate of interest applied on the working capital is @8.50% as per the SBI MCLR (one year) of 7.00% (as on date of filing of Petition) plus 150 basis points.
- 6.23.4. The Commission has considered closing Security Deposits from the Consumers as approved in earlier in this Section.
- 6.23.5. The Commission, based on the expenses/costs approved, has computed the working capital requirement and interest on working capital for the control period as detailed in the Table below:

Table 287: Interest on Working Capital approved for FY 2021-22 (Rs. Crore)

S. no.	Particular	NBPDC	SBPDCL
		Approved for FY 2021-22	Approved for FY 2022-22
1	Two months equivalent expected revenue	1,399.93	1,593.81
2	Maintenance spares @40% of R&M expenses for one month	7.68	7.88
3	Sub-total (1+2)	1,407.61	1,601.69
4	Less:		
(i)	Power purchase cost, transmission charges and load dispatch charges of one month	575.44	670.64
(ii)	Depreciation, return on equity and contribution to contingency reserve to two months	80.03	84.75
(iii)	Amount of security deposits from consumers	463.45	694.02
5	Sub-total (4(i)+4(ii)+4(iii))	1,118.91	1,449.41
6	Net working capital requirement (3-5)	288.70	152.28
7	Rate of interest %	8.50%	8.50%
8	Interest on working capital (6*7)	24.54	12.94

6.24. Annual Revenue Requirement

SBPDCL and NBPDCCL' submission:

6.24.1. The Petitioners have projected the ARR for FY 2021-22 as detailed in the Table below:

Table 288: ARR projected for FY 2021-22 (Rs. Crore)

Sl. No.	Particulars	NBPDCCL	SBPDCL	Total
1	Net Power Purchase Cost including Transmission Charges, deemed rebate and Treatment of Surplus Power	7,497.68	8,970.16	16,467.84
2	O&M Expenses			
i)	Employee Cost	503.80	675.24	1,179.04
ii)	R&M expenses	219.09	210.83	429.92
iii)	A&G expenses	208.96	154.69	363.65
3	Share of Holding Company expenses	26.16	27.50	53.66
4	Depreciation	261.24	238.61	499.85
5	Interest and Finance charges	382.83	344.29	727.12
6	Interest on working capital	33.86	22.35	56.21
7	Return on equity	293.61	283.24	576.85
8	Interest on security deposit	19.70	30.85	50.55
9	Total Revenue Requirement	9,446.93	10,957.77	20,404.70
10	Less: Non-tariff income	334.44	379.43	713.87
11	Aggregate Revenue Requirement	9,112.48	10,578.34	19,690.82
12	Less: Revenue from Existing Tariff	8,239.33	9,994.93	18,234.26
13	Less: Subsidy	422.62	715.24	1,137.86
14	Gross Gap / (Surplus)	450.54	(131.83)	318.71
15	Unrecovered Gap for FY 2019-20 along with carrying cost	386.90	909.79	1,296.69
16	Net Gap / (Surplus)	837.45	777.96	1,615.41

Commission's Analysis:

6.24.2. The Commission has computed the net annual revenue requirement based on the costs approved in the preceding paragraphs for FY 2021-22 as detailed in the Table below:

Table 289: ARR approved for FY 2021-22 (Rs. Crore)

Sr. No.	Particulars	NBPDCCL	SBPDCL	Total
1.a	Power purchase cost	7,590.47	8,910.62	16,501.09
1.b	Treatment of surplus power	(1,884.91)	(2,271.26)	(4,156.17)
1.c	PGCIL, OA, & other transmission charges	1,199.68	1,408.33	2,608.01
2	O&M Expenses			-

Sr. No.	Particulars	NBPDCCL	SBPDCL	Total
i)	Employee Cost	382.08	602.42	984.50
ii)	R&M expenses	230.45	236.51	466.96
iii)	A&G expenses	163.42	141.85	305.27
iv)	Share of Holding Company expenses	23.99	25.22	49.21
3	Depreciation	215.30	257.54	472.84
4	Interest on loan	340.46	289.32	629.78
5	Interest and Finance charges	42.44	69.77	112.21
6	Interest on working capital	24.54	12.94	37.48
7	Return on equity	264.87	250.95	515.82
8	Income Tax	-	-	-
9	Interest on security deposit	19.7	30.85	50.55
10	Bad debts (if any)	-	-	-
11	Contingency reserves (if any)	-	-	-
12	Deposit for RPO Obligation	-	-	-
13	Total Revenue Requirement	8,612.49	9,965.08	18,577.57
14	Less: Non-tariff income	212.92	402.23	615.15
15	Aggregate Revenue Requirement	8,399.58	9,562.85	17,962.43

6.25. Trued-up net Revenue Gap / (Surplus) of FY 2019-20

6.25.1. The Commission has approved the consolidated net revenue gap of Rs. 399.75 Crore (Revenue surplus of NBPDCCL is Rs. 1,211.09 Crore and revenue gap of SBPDCL is Rs. 1,610.84 Crore) for FY 2019-20 in True up for Discoms.

6.25.2. Regulation 14 (f) of the BERC (Multi Year Distribution Tariff) Regulations, 2018 stipulates as under

“Notwithstanding anything contained in regulation 4 of these Regulations, the Revenue gap/surplus arising out of Truing up shall be considered by the Commission while determining the ARR of ensuing year(s). While approving adjustments towards revenue/expenses in future years, arising out of Truing up exercises, the Commission may allow the carrying costs as determined by the Commission of such expenses/revenues. However the revised estimated gap/surplus as a result of APR shall not be passed in the ARR of ensuing year.”

6.25.3. The Commission, in terms of regulation 14 (f) has carried forward the trued up consolidated revenue gap along with carrying cost in the ARR of FY 2021-22.

6.25.4. The Commission has considered carrying cost @ 9.66%% (average SBI MCLR + 1.50%) for half year of FY 2019-20, @8.55% % (average SBI MCLR + 1.50%) for full year of FY 2020-21 and @8.50% % (SBI MCLR 7.00%+1.50%) for half year of FY 2021-22 on the trued up revenue Gap/(surplus) of FY 2019-20 assuming that the Gap/(surplus) has been created over FY 2019-20 and adjustment/recovery would have

been made over the year 2021-22 following the methodology adopted by the APTEL Judgment dated 8 April, 2015 in Appeal No.160 of 2012 (Reliance Infrastructure Limited Vs MERC & others) as detailed in the Table below:

Table 290: Trued up approved Revenue Gap/(Surplus) of FY 2019-20 carried forward to ARR of FY 2021-22 (Rs. Crore)

Sl. No.	Particulars	Rate	NBPDCCL	SBPDCL	Total
1	Revenue Gap /(Surplus) approved in True-up for FY 2019-20 to be carried forward		(1,211.09)	1,610.84	399.75
2	Interest for FY 2019-20 for 6 months	9.65%	(58.50)	77.80	19.3
3	Interest for FY 2020-21 for 1 year	8.55%	(103.55)	137.73	34.18
4	Interest for FY 2021-22 for 6 months	8.50%	(51.47)	68.46	16.99
5	Sub-total carrying/(holding) cost (2+3+4)		(213.52)	283.99	70.47
6	Total gap/(Surplus) with interest (1+5)		(1,424.61)	1,894.83	470.22

6.26. Revenue from sale of power at existing tariff

SBPDCL and NBPDCCL' submission:

6.26.1. The Discoms have submitted the category wise revenue based on the existing Tariff for FY 2021-22 as detailed in the Table below:

Table 291: Projected Revenue from sale of power at existing Tariff for FY 2021-22

Category of Consumers	SBPDCL		NBPDCCL		Total	
	Sales (MUs)	Revenue (Rs Crore)	Sales (MUs)	Revenue (Rs Crores)	Sales (MUs)	Revenue (Rs Crores)
Domestic	8,198.34	5,469	8,540.00	5,573.38	16,738.34	11,042.38
Kutir Jyoti	1,280.61	794	2,755.03	1,718.06	4,035.64	2,512.06
DS I Rural	3,479.31	2,252	3,945.78	2,550.54	7,425.09	4,802.54
DS II Demand Based	3,438.34	2,423	1,839.15	1,304.75	5,277.49	3,727.75
DS III	0.08	0.08	0.04	0.03	0.12	0.11
Non_Domestic Service	1,333	1,204	1,381.94	1,189.14	2,714.94	2,393.14
NDS I - Metered Now Demand Based	337.95	239	209.36	148.17	547.31	387.17
NDS II - Demand Based	995.31	965	1,172.58	1,040.96	2,167.89	2,005.96
Contract Demand <0.5 kW	6	5	2.3	1.62	8.30	6.62
Contract Demand >0.5 kW	989	960	1,170.29	1,039.35	2,159.29	1,999.35
Street Light Services	70	70	38.99	80.71	108.99	150.71
SS Metered	18.54	14	9.08	6.99	27.62	20.99
SS Unmetered	51.65	56	29.91	73.72	81.56	129.72
Irrigation & Allied	852	812	188.75	154.47	1,040.75	966.47

Category of Consumers	SBPDCL		NBDCL		Total	
	Sales (MUs)	Revenue (Rs Crore)	Sales (MUs)	Revenue (Rs Crores)	Sales (MUs)	Revenue (Rs Crores)
Services						
IAS I	718.06	699	132.64	99.45	850.70	798.45
IAS II	133.72	112	56.11	55.03	189.83	167.03
Public Service Connections	174.32	147	117.75	95.78	292.07	242.78
Public Water Works	91.77	88	23.51	28.77	115.28	116.77
Har Ghar Nal	82.59	59	94.24	67.01	176.83	126.01
Low Tension Industrial Services	494.86	456	364.41	346.51	859.27	802.51
LTIS I (0-19 kW)	373.02	332	311.87	297.38	684.89	629.38
LTIS II (>19 kW - 74 kW)	121.84	124	52.54	49.13	174.38	173.13
High Tension	2,305.27	1,837	644.72	604.74	2,949.99	2,441.74
HTS I - 11 kV	721.24	676	416	395.19	1,137.24	1,071.19
HTS II - 33 kV	511.53	475	118.23	113.92	629.76	588.92
HTS III -132 kV	236.51	183	59.77	61.23	296.28	244.23
HTS IV - 220 kV			-	-		
HTSS	836	504	50.72	34.4	886.72	538.40
Railway Traction Services			116.41	95.75	116.41	95.75
Nepal			151.61	98.85	151.61	98.85
Total	13,428.07	9,994.93	11,544.57	8,239.33	24,972.64	18,234.26

Commission's Analysis:

6.26.2. Tariff for sale of electricity from Bihar to Nepal was discussed in the 13th Indo-Nepal PEC meeting held on 26 December, 2018 and later, the Tariff for FY 2018-19 and FY 2019-20 has been agreed as shown below:

Table 292: Tariff for sale of electricity to Nepal, as per PEC meeting dated 26, December, 2018

Sl. No.	Financial Year	Tariff at 132 kV level (Rs./kWh)	Tariff at 33 kV level (Rs./kWh)
1	2017-18	5.55	6.00
2	2018-19	5.86	6.33
3	2019-20	6.18	6.68

6.26.3. As also observed in Tariff Order for FY 2020-21, an increase at 5.5% on existing tariff of FY 2017-18, on year on year basis for two year i.e. FY 2018-19 and FY 2019-20 was accepted. The Tariff for further years after FY 2019-20 is not yet decided. Most of the power from Bihar is being transmitted to Nepal at 132 kV level. Therefore, considering an escalation at 5.5%, the Tariff for sale of power to Nepal is considered at Rs.6.52/kWh

(6.18*1.055) in Tariff Order for FY 2020-21.

6.26.4. Accordingly, in line with approach adopted in previous Tariff Order, the Commission has considered further 5.5% escalation in tariff for sale of power to Nepal for FY 2021-22.

6.26.5. The Commission has computed the revenue from sale of power at existing tariff as per terms and conditions approved for FY 2021-22 as detailed in Chapter 8 Tariff Principles, Design and Tariff Schedule. Accordingly, based on the category wise consumers, connected load and energy sales, the Commission approves revenue at existing tariff for the Discoms for FY 2021-22 as given in the Table below:

Table 293: Revenue from sale of power at existing tariff in FY 2021-22

Sl. No.	Discom	NBPDC	SBPDCL	Total
1	Sales (MU)	11,544.57	13,428.07	24,972.65
2	Revenue (Rs. Crore)	8,270.57	10,046.73	18,317.30

6.27. Net Revenue Gap/(Surplus) at existing Tariff FY 2021-22

6.27.1. The Commission has approved the Annual Revenue Requirement (ARR) for FY 2021-22 and estimated revenue from sale of power at existing Tariff. The Commission has arrived at the net revenue gap of Rs.115.36 Crore for FY 2021-22 based on the revenue estimation at existing Tariff. The same is provided in the Table below:

Table 294: Net revenue gap/(surplus) approved for FY 2021-22 (Rs. Crore)

Sl. No.	Particulars	NBPDC	SBPDCL	Total
1	Net ARR for FY 2021-22	8,399.58	9,562.85	17,962.43
2	Treatment of Gap/(Surplus) of FY 2019-20	(1,424.61)	1,894.83	470.22
3	Revised ARR (1+2)	6,974.97	11,457.68	18,432.65
4	Less: Revenue from Existing Tariff	8,270.57	10,046.73	18,317.30
5	Revenue Gap/(Surplus) (3-4)	(1,295.60)	1,410.96	115.36

6.28. Revenue with revised tariff

6.28.1. The Commission has approved the consolidated net revenue gap of Rs. 115.36 Crore (including Revenue surplus of NBPDC is Rs. 1,295.60 Crore and revenue gap of SBPDCL is Rs. 1,410.96 Crore) against for FY 2021-22. To recover this net revenue gap an increase of ~0.63 % in Tariff is required to be done for both the Discoms.

6.28.2. The Regulation 6.1 (a) and (b) of the BEREC (Fixation of Charges for Supply of Electricity by Distribution Licensee) Regulations 2018 provides methodology for determination of Energy Charges and Fixed/Demand charges as shown below:

“6. Method for determination of various charges.—

6.1 The Commission, while determining various charges to be recovered from different consumer categories shall adopt the following methodologies:

(a) Fixed or Demand Charges.—Total fixed expenses required to be incurred by the distribution licensee and admitted by the Commission during the tariff period in respect of expense towards Repair and Maintenance of the distribution system, employee expenses including contract and outsourced employees, administrative and general expenses including fees and charges payable by the licensee, Return on Equity and depreciation admissible to the licensee for fixed assets put into use, interest charges on loans including working capital loan, and such other additional amounts as are approved by the Commission, distributed over sum of all consumers contract demand/sanctioned load in kW. Such fixed charge in Rs./kW shall further be converted into Rs./kVA or Rs./HP as the case may be for the purpose of fixation of category wise fixed charges in accordance with the conversion factor specified in tariff order from time to time.

(b) Energy Charges.—The expenses required to be incurred by the distribution licensee and admitted by the Commission during the tariff period on account of power purchase cost including reactive charges and peak supply surcharge and Fuel Cost Adjustment expenses; if any as well as inter-state and intra-state transmission charges including POSOCO, RLDC & SLDC charges shall be distributed over total consumption in kWh. Such energy charge in Rs./kWh shall further be converted into Rs./kVAh for the purpose of fixation of category wise energy charges. Provided that the aggregate technical and commercial losses reasonably incurred by the distribution licensee shall also be taken into consideration while computing the power purchase cost incurred in the distribution process.”

6.28.3. As per the above Regulations, the recovery of charges through fixed or demand charges and energy charges (EC) needs to be done corresponding to fixed cost (FC) and variable cost (VC), respectively. The Commission has compared the total fixed cost expenses and variable expenses (i.e., power purchase expenses) vis-à-vis revenue from fixed or demand charges and EC at the existing Tariff for FY 2021-22, as shown in the Table below:

Table 295: Bifurcation of revenue %age at existing Tariff against bifurcation of fixed cost and variable cost

	Total Cost			Revenue		
	FC	VC	Total	FC	EC	Total
NBPDC	19%	81%	100%	11%	89%	100%
SBPDCL	17%	83%	100%	16%	84%	100%
Total	18%	82%	100%	14%	86%	100%

6.28.4. From the above, the Commission has observed that the Discoms are recovering lower fixed charges when compared with the fixed cost of the Discoms. However, the recovery of consolidated revenue gap of Rs.115.36 Crore would require marginal Tariff increase. Therefore, the Commission is constrained to increase the same in the fixed

charges since the same would result into nominal increase with rounding off difficulties. Therefore, the Commission has approved a Tariff increase only in the energy charges so as to maintain the earlier ratio of Fixed or Demand Charges and Energy Charges of 14% and 86%, respectively, as shown in the Table above.

- 6.28.5. Further, the Commission notes that the Clause 8.3 (2) of the National Tariff Policy, 2016 specifies that the Tariff progressively are brought with in $\pm 20\%$ of the average cost of supply. The relevant extract of the National Tariff Policy is reproduced below:

“2. For achieving the objective that the tariff progressively reflects the cost of supply of electricity, the Appropriate Commission would notify a roadmap such that tariffs are brought within $\pm 20\%$ of the average cost of supply. The road map would also have intermediate milestones, based on the approach of a gradual reduction in cross subsidy”.

- 6.28.6. Also, the Regulation 3.2 of the BERC (Fixation of Charges for Supply of Electricity by Distribution Licensee) Regulations, 2018 stipulates that the Commission shall endeavour to ensure that the charges recoverable from different consumer categories should be within $\pm 20\%$ of the cost of supply and such cross-subsidy shall progressively reduce, as shown below:

“3.2 The Commission shall also endeavour to ensure that the charges recoverable from different consumer categories should be within $\pm 20\%$ of the cost of supply and such cross-subsidy shall progressively reduce. The distribution licensee shall submit a road-map in such a way that the cross-subsidy, from the present level is progressively reduced and charges recoverable from different consumer categories should reflect category wise cost of supply at the end of next control period i.e. FY 2021-22.”

- 6.28.7. Based on the approved ARR for FY 2021-22, the Commission has determined the Average Cost of Supply (ACoS) for Discoms at Rs.7.44 per Unit. Based on the ACoS, the above principles of Tariff Policy and the BERC (Fixation of Charges for Supply of Electricity by Distribution Licensee) Regulations, 2018, the Commission has revised the Tariff. The Tariff for subsidised categories whose ABR is lower than ACoS were increased so that the Tariffs moves towards the ACoS and the cross-subsidy is reduced marginally. However, the Tariff for most of the cross-subsidising categories except NDS-II (Contract Demand >0.5 kW – for First 100 Units) were not increased as any increase in their Tariff would have led to increase in cross-subsidy violating the above stated principles. Further, the Tariff for NDS-II (Contract Demand >0.5 kW – for First 100 Units) were increased marginally by maintaining the cross-subsidy in their Tariff same as in the existing Tariff. The comparison of ABR as % of ACoS at existing Tariff vis-à-vis revised approved Tariff is provided in **Error! Reference source not found.** in the later part of this section.

- 6.28.8. Based on the above, the Commission has increased the Tariff of Kutir Jyoti, DS-I, DS-II, NDS-I, NDS-II (Contract Demand <0.5 kW), IAS-I (metered), Har Ghar Nal, and HTSS categories while continuing with the Tariff approved in the previous Tariff Order

dated 20 March, 2020 for the balance categories. Further, the Commission has introduced a new Tariff category for Electric Vehicle Charging station at a promotional Tariff to encourage electric vehicles in the State in line with the request of Transport department. A summarised Table containing the approved Tariff is provided in the Table below:

Table 296: Approved Tariff Schedule for FY 2021-22 (Rs. Crore)

SI No.	Category/ Subcategory of Consumers	Approved Tariff for NBDCL and SBPDCL area for FY 2021-22		
		Fixed charge	Energy Charge	Unit slabs
A	LT Supply			
1	Domestic			
1.1	Kutir Jyoti (Metered) (BPL)	Rs. 10 /Month/Connection	Rs. 6.10 /unit	0-50 units
			As per DS-I or DS-II	Above 50 units
1.2	DS-I Rural (Metered) (Demand based)	Rs. 20 /kW or part/month	Rs.6.10/Unit	0-50
			Rs. 6.40/Unit	51-100
			Rs. 6.70/Unit	Above 100
1.3	DS-II (Demand based)	Rs. 40 /kW or part/month	Rs. 6.10/Unit	0-100
			Rs.6.95/Unit	101-200
			Rs. 8.05/Unit	Above 200
1.4	DS-III (Demand based up to 74 kW)	Rs. 40 /kW or part/month	Rs. 7.40/Unit	All Units
2	Non Domestic			
2.1	NDS-I Rural (Metered) (Demand based)	Rs. 30 /kW or part/month	Rs. 6.40/Unit	0-100
			Rs. 7.00/Unit	101-200
			Rs. 7.55/Unit	Above 200
	NDS-II (Demand based)			
2.2	NDS-II Contract load up to 0.5 kW	Rs. 100/month/ connection	Rs. 6.35/Unit	All Units
2.3	NDS-II Contract demand above 0.5 kW and up to 70kW	Rs. 180/kW or part/month	Rs. 6.35/Unit	1-100
			Rs. 6.85/Unit	101-200
			Rs. 7.40/Unit	Above 200
3	Irrigation and Agriculture Services (Connected load based)			
3.1	IAS-I (Unmetered)	Rs. 800/HP or part/month	-	All Units
3.2	IAS-I (Metered)	Rs. 30/HP or part/month	Rs. 5.55/Unit	All Units
3.3	IAS-II (Metered) (Demand based)	Rs. 240/kVA or part/month	Rs. 5.90/kVAh	All Units
4	Low Tension Industrial (Demand Based, kVAH)			
4.1	LTIS-I	Rs.144/kVA or part/month	Rs. 6.40/kVAh	All Units

SI No.	Category/ Subcategory of Consumers	Approved Tariff for NBDCL and SBPDCL area for FY 2021-22		
		Fixed charge	Energy Charge	Unit slabs
4.2	LTIS-II	Rs 180/kVA or part/month	Rs. 6.40/kVAh	All Units
5	Public Water Works			
5.1	PWW (Demand based, kVAh)	Rs 315/kVA or part/month	Rs. 7.95/kVAh	All Units
5.2	Har Ghar Nal (Connected load based)	Rs 40/HP or part thereof/month	Rs. 6.70/kVAh	All Units
6	Street Light Services			
6.1	SS-Metered (Connected load based)	Rs 50/kW or part/month	Rs. 7.40/kVAh	All Units
6.2	SS-Unmetered	Rs 375/100W or part/month	-	All Units
6.3	LT Electric Vehicle Charging Stations	-	Rs. 7.15/Unit	All Units
B	HT Supply			
1	HTS-I	Rs.300/kVA/Month	Rs. 6.55/kVAh	All Units
2	HTS-II	Rs.300/kVA/Month	Rs. 6.50/kVAh	All Units
3	HTS-III	Rs.300/kVA/Month	Rs. 6.45/kVAh	All Units
4	HTS-IV	Rs.300/kVA/Month	Rs. 6.40/kVAh	All Units
5	HTSS (33kV)	Rs.700/kVA/Month	Rs. 4.10/kVAh	All Units
6	Railway Traction (RTS)	Rs.280/kVA/Month	Rs. 6.70/kVAh	All Units
7	HT Electric Vehicle Charging Stations	-	Rs. 6.45/kVAh	All Units

Note: The terms and conditions of LT & HT Tariff and Tariff schedule is provided in Chapter 9 in the subsequent part of this Order.

6.28.9. The Commission has considered the above fixed charges per consumer and energy charges per unit/kVAh and had computed the expected revenue from sale of power for FY 2021-22. Based on this, the revenue at approved Tariff and the additional revenue estimated to be recovered to meet the revenue gap is provided in the Table below:

Table 297: Additional revenue in Tariff for FY 2021-22 due to revision in Tariff (Rs. Crore)

Sl. No.	Particulars	NBDCL	SBPDCL	Total
1	Revenue with revised Tariff	8,320.85	10,111.11	18,431.96
2	Revenue with existing Tariff	8,270.57	10,046.73	18,317.30
3	Additional Revenue due to Tariff revision (1-2)	50.28	64.38	114.66

6.28.10. Thus, the Commission has approved a net effective overall increase in Tariff at 0.63% as can be seen from the Table above. However, the Tariff increase in individual categories has been done with few categories not having any Tariff increase and in few categories lower Tariff increase has been done considering the relevant policies and regulation as elaborated in the above sections.

6.28.11. After the revision of the Tariff the consolidated revenue Gap of the Discoms is Rs.0.69 Crore, as shown in the Table below and the same would be carried forward in the subsequent Tariff year:

Table 298: Revenue with revised Tariff and approved revenue Gap/(Surplus) for 2021-22 (Rs. Crore)

Sl. No.	Particulars	NBPDC	SBPDCL	Total
1	Net ARR for FY 2021-22	8399.578	9,562.85	17,962.43
2	Carried forward trued up revenue gap/(Surplus) of FY 2019-20 along with carrying cost	(1424.61)	1,894.83	470.22
3	Net ARR including impact of past gap/(surplus) (1+2)	6,974.968	11,457.68	18,432.65
4	Revenue at existing Tariff	8,270.57	10,046.73	18,317.30
5	Additional revenue from revised Tariff	50.28	64.38	114.66
6	Net Gap / (Surplus) (3-4-5)			0.69

6.29. Average Tariff as a percentage of Average Cost of Supply

6.29.1. As elaborated in the earlier paras, the comparison of Average Billing Rate (ABR) as % of ACoS at existing Tariff vis-à-vis revised approved Tariff is provided in the Table below:

Table 299: Average realisation as a percentage of voltage wise cost of supply

Consumer Category	At Existing Tariff		At Revised Tariff	
	Average Billing Rate (Rs./kWh)	ABR as % of ACoS	Average billing rate (Rs./kWh)	ABR as % of ACoS
Domestic				
Kutir Jyoti	6.22	84%	6.28	84%
DS I Rural	6.47	87%	6.54	88%
DS II Demand Based	7.06	95%	7.11	96%
DS III	9.21	124%	9.21	124%
Non Domestic Service				
NDS I - Metered Now Demand Based	7.06	95%	7.18	97%
NDS II - Demand Based	9.25	124%	9.26	124%
Street Light Services				
SS Metered	7.68	103%	7.68	103%

Consumer Category	At Existing Tariff		At Revised Tariff	
	Average Billing Rate (Rs./kWh)	ABR as % of ACoS	Average billing rate (Rs./kWh)	ABR as % of ACoS
SS Unmetered	15.87	213%	15.87	213%
Irrigation & Allied Services				
IAS I				
Unmetered	19.86	267%	19.86	267%
Metered	5.93	80%	5.98	80%
IAS II	9.48	127%	9.48	127%
Public Service Connections				
Public Water Works	11.04	148%	11.04	148%
Har Ghar Nal	7.10	95%	7.15	96%
Low Tension Industrial Services				
LTIS I (0-19 kW)	9.89	133%	9.89	133%
LTIS II (>19 kW - 74 kW)	10.65	143%	10.65	143%
High Tension				
HTS I - 11 kV	9.42	127%	9.42	127%
HTS II - 33 kV	9.34	126%	9.34	126%
HTS III -132 kV	8.24	111%	8.24	111%
HTS IV - 220 kV	-	0%		0%
HTSS	6.07	82%	6.13	82%
Railway Traction Services	8.23	111%	8.23	111%
Nepal	6.52	88%	6.52	88%

6.29.2. Further, as elaborated in the earlier paras the Commission has observed that there is no impact on ratio of the fixed or demand charges and energy charges recovery as shown in the Table below:

Table 300: Revenue from Fixed charges and Energy Charges as % of total revenue

	At existing Tariff			At proposed Tariff		
	FC	VC	Total	FC	VC	Total
NBDCL	11%	89%	100%	11%	89%	100%
SBPDCL	16%	84%	100%	16%	84%	100%
Total	14%	86%	100%	14%	86%	100%

7. Voltage-wise cost of supply

7.1. Introduction

- 7.1.1. The Commission has been computing the voltage-wise cost of supply (since the Tariff Order for FY 2013-14) keeping in view the guidelines indicated by the Hon'ble APTEL in its order dated 10.05.2012.
- 7.1.2. The Commission, in Regulation 36 (b) to (e) of BERC (Multi Year Distribution Tariff) Regulations, 2018 has explained the methodology for computation of voltage-wise cost of supply.

7.2. Methodology adopted for Computation of Voltage-wise cost of supply

Petitioners' submission:

- 7.2.1. The Discoms have submitted that the Hon'ble APTEL has proposed a simple methodology to functionalize use of Cost of Supply model. The APTEL notes that identical consumers connected at different nodes of distribution system need not to be differentiated. In addition, it is adequate to determine voltage-wise cost of supply taking into account the major cost elements which would be applicable to all the categories of the consumers connected at the same voltage level at different locations in the distribution system.
- 7.2.2. In the method suggested by the Hon'ble APTEL, there are five major components to arrive at the voltage wise cost of supply. These elements are:
- **Technical losses at each voltage level of the network:** This value of the technical losses is found by the field studies. Sampling of the feeders which are representative of the consumers in the system will help in identifying the technical losses at each voltage levels. The APTEL recognizes the difficulty in collecting data for technical loss at 11 kV and LT level, hence the suggestion to compute losses using maximum possible representative feeders for various consumer categories at respective voltage levels.
 - **Commercial losses at each voltage level of the network:** The commercial loss of the system is the difference between approved loss in the ARR and the total technical loss computed from system study. This difference is to be apportioned according to the sales in each voltage level to arrive at the commercial loss at each voltage level.
 - **Voltage wise sales:** The energy sale at a particular voltage level is the sum of energy sold for all the categories of consumers connected at the said voltage level. Due to its share of sales in total sales, the consumers of the 132/220 kV network will be apportioned a share of the commercial losses. The Hon'ble APTEL recognizes that in reality, there may be minimal technical losses at that level and very low probability of commercial losses. However, the APTEL is of the opinion that the

consumers at 132/220 kV, being a part of the distribution system will bear these apportioned losses.

- **Power Purchase Cost:** The power purchase cost is the cost of energy purchased for sustaining the energy sales at each voltage level. This power purchase units for each voltage level is arrived by finding the energy input at each voltage level and adding the losses (technical and commercial) for the same voltage level and upstream. The energy input at each voltage level is the sum of the sales at the voltage level and the losses for the corresponding voltage level.
- **Network Cost:** The network costs are the costs like O&M, interest and finance charges, depreciation, return on equity etc. These costs are a part of the ARR which in turn provides the average cost of supply. Thus, the network cost is essentially the difference between the ARR value and the power purchase cost. The APTEL has suggested apportioning these costs according to the sales volume in each of the voltage level.

7.2.3. Further, the Discoms submitted that due to the methodology applied to apportion losses in the various voltage levels, all the consumer categories at a particular voltage level will have same cost of supply.

Commission's Analysis:

7.2.4. Cost of supply is a study of total costs incurred by a utility in providing service to its consumers, category-wise and voltage level wise. Vital input to cost of supply study include reliable, accurate and consistent information which is derived from special studies conducted in the field level, i.e., category-wise Load Factors, category-wise coincident Demand Factors etc., based on which the cost related to Demand (MW), Energy (MU) and customer charges have to be allocated to various consumer categories.

7.2.5. The Commission has stipulated the methodology to compute the consumer category-wise cost of supply in Regulation 36 (b) to (e) of BERC (Multi Year Distribution Tariff) Regulations, 2018. The Discoms have not computed the voltage wise cost of supply as per the methodology suggested in the above Regulations.

7.3. APTEL's guidelines on alignment of tariff to cost of supply

7.3.1. The Appellate Tribunal for Electricity (APTEL) in its Judgement dated 10 May, 2012 on the Appeal No.14 of 2011 of Bihar Industries Association and Appeal No.27 of 2011 M/s.Kalyanpur Cements Limited has commented as below:

"We appreciate that the determination of cost of supply to different categories of consumers is a difficult exercise in view of non-availability of metering data and segregation of network costs. However, it will not be prudent to wait indefinitely for availability of the entire data and it would be advisable to initiate a simple formulation

which could take into account the major cost element to a great extent reflect the cost of supply. There is no need to make distinction between the distribution charges of identical consumers connected at different nodes in the distribution network. It would be adequate to determine the voltage-wise cost of supply taking into account the major cost element which would be applicable to all the categories of consumers connected to the same voltage level at different locations in the distribution system. Since the State Commission has expressed difficulties in determining voltage wise cost of supply, we would like to give necessary directions in this regard''

7.4. Methodology suggested by APTEL

7.4.1. The methodology given by the APTEL for determination of voltage-wise “Cost of Supply” and the inputs required are briefly given below:

“(i) The technical distribution system losses in the distribution network are to be assessed by carrying out system studies based on available load data for 33 kV and above voltages and in the case of 11 kV and 0.40 kV (LT), due to vastness of data, field studies to be carried out with representative feeders for the various consumer mix prevailing in the distribution system.

(ii) The total losses in the system, which include commercial or non-technical losses, will be more than the technical losses determined based on the system studies. Therefore, the difference between the total losses in the system and the technical losses determined by the studies may have to be apportioned to different voltage levels in proportion to annual gross energy consumption at the respective voltage level.

The annual gross energy consumption of all consumers at a voltage level will be the sum of energy consumption of all consumer categories connected at that voltage plus the technical losses corresponding to that voltage level as worked out by the system studies.

(iii) The power purchase cost which is the major component of tariff is to be segregated for different voltage levels taking into account the transmission and distribution losses, both technical and non-technical commercial for the relevant voltage level and upstream system.

(iv) The network costs such as O&M costs, interest on loans, depreciation, interest on working capital and return on equity are to be pooled and apportioned equitably on pro-rata basis to all voltage levels to determine the cost of supply''.

7.5. Pre-requisite for arriving at the voltage wise Cost of Supply (CoS):

7.5.1. As per the APTEL Judgment, an assessment of the technical and commercial loss in the distribution system network by carrying out system studies based on the available load data for 33 kV and above and field studies for representative feeders for 11 kV and 0.4 kV of the various consumer mix prevailing in the distribution system as well as