

Table 29: Energy Availability (MU) and Cost (Rs. In Cr.)- RVUN Stations for FY 2021-22

Station	FY 2021-22	
	Energy Availability (MU)	Cost (Rs. In Cr.)
KTPS(1 to 7)	4852	2138
STPS(1 to 6)	930	1108
STPS Stage V (Unit 7 & 8)	2958	1440
DCCPP	0	0
CTPP (1-4)	6387	2534
CTPP (5)	6246	2597
CTPP (6)	1490	620
RGTP(1&2 &3)	1619	681
KaTPP#1 & 2	5911	3127
MAHI	205	53
MAHI MMH	1	0
MANGROL	9	4
STPS MMH	1	1
Total RVUN	30610	14302

Lignite based projects

- 3.78 The lignite based projects include Giral Lignite Power Limited, Rajwest Limited and Neyveli Lignite Corporation Limited.
- 3.79 For Giral Unit 1 & 2, Commission is not considering any generation for FY 2020-21 and FY 2021-22 as these Units are not functioning for long period of time.
- 3.80 For Neyveil Lignite, the Commission has considered the energy availability, Fixed and energy charges for FY 2020-21 as per actuals and for FY 2021-22, 2% escalation has been given over FY 2020-21.
- 3.81 For Rajwest Power Limited the Commission has considered the energy availability for FY 2021-22, with 2% escalation over FY 2020-21. The fixed and energy charges for FY 2021-22 are as per RWPL tariff order of FY 2018-19 dated 26.09.2018 for FY 2020-21.
- 3.82 The energy availability and total power purchase cost for Lignite based projects have been summarized in the table below:

Table 30: Energy Availability (MU) and Cost (Rs. In Cr.)- Lignite Plants for FY 2020-21 and FY 2021-22

Station	FY 2020-21	
	Energy Availability (provisional-Actual) (MU)	Cost (provisional-Actual) (Rs. In Cr.)
Rajwest	6377	2773
GLTPP	0	0
Neyveli Lignite Corporation Ltd	1260	423
Total	7637	3195

Station	FY 2021-22	
	Energy Availability (MU)	Cost (Rs. In Cr.)
Rajwest	6504	2732
GLTPP	0	0
Neyveli Lignite Corporation Ltd	1285	431
Total	7789	3163

Nuclear Power Corporation of India Ltd. (NPCIL)

- 3.83 The energy availability and tariff of NPCIL has been considered for FY 2020-21 as per actuals and for FY 2021-22, 2% escalation has been given over FY 2020-21.
- 3.84 The energy availability and total power purchase cost for NPCIL plants have been summarized in the table below:

Table 31: Energy Availability (MU) and Cost (Rs. In Cr.)- NPCIL for FY 2020-21 and FY 2021-22

Station	FY 2020-21		FY 2021-22	
	Energy Availability (provisional-Actual) (MU)	Cost (provisional-Actual) (Rs. In Cr.)	Energy Availability (MU)	Cost (Rs. In Cr.)
NPCIL	2258	774	2303	790

Partnership Projects (PP)

- 3.85 The energy availability, fixed and energy charges of partnership projects for FY 2020-21 has been considered as per actuals and for FY 2021-22, 2% escalation has been given on FY 2020-21.
- 3.86 Energy availability and total power purchase cost for partnership projects have been summarized in the table below:

Table 32: Energy Availability (MU) and Cost (Rs. In Cr.)- Partnership Projects for FY 2020-21 and FY 2021-22

Station	FY 2020-21		FY 2021-22	
	Energy Availability (provisional-Actual) (MU)	Cost (provisional-Actual) (Rs. In Cr.)	Energy Availability (MU)	Cost (Rs. In Cr.)
Partnership Projects	2930	132	2989	135

NTPC, NHPC & Others

- 3.87 The energy availability, fixed and energy charges of NTPC & NHPC and others for FY 2020-21 has been considered as per actuals and For FY 2021-22, 2% escalation has been considered on FY 2020-21.
- 3.88 A new unit of PARBATI HPS is expected to commission during FY 2021-22, accordingly the Commission has considered the normative availability for PARBATI HPS and its charges has been considered based on the existing unit of PARBATI HPS.
- 3.89 The energy availability and total power purchase cost for NTPC, NHPC and other plants have been summarized in the table below:

Table 33: Energy Availability (MU) and Cost (Rs. In Cr.)- NTPC & NHPC and Other Generating Stations for FY 2020-21 and FY 2021-22

Station	FY 2020-21		FY 2021-22	
	Energy Availability (provisional-Actual) (MU)	Cost (provisional-Actual) (Rs. In Cr.)	Energy Availability (MU)	Cost (Rs. In Cr.)
NTPC Stations	10213	3519	10418	3589
NHPC Stations	1640	575	1986	635
Others	23301	8368	21928	8040
Total	35154	12462	34332	12264

- 3.90 Further, Ministry of Power, GOI issued the guidelines dated 22.03.2021 enabling Discoms either to continue or exit from PPA after completion of term of PPA, i.e., beyond 25 years or a period specified in the PPA and allowing the Generators to sell power in any mode after State/Discoms exit the PPA. In View of above guidelines, the Discoms have filed the petition for relinquishing share of power of the five eligible Power Plants of Central Generating Stations(CGS).
- 3.91 In the matter of above petition, the Commission vide order dated 28.10.2021 has

allowed Discoms to exit from PPA for the Anta Gas, Auriya Gas, Dadari Gas, FUGTPS (I), Farraka TPS power Plants aggregating to 252 MW. However, its impact on fixed cost will be visible from next year.

Non-Conventional Energy Sources

- 3.92 The Commission has taken the availability from non-conventional energy sources to the extent of RPO requirement, i.e., 8.60% for wind, 7.25% for Solar and 0.80% for Bio-mass for FY 2020-21 and 8.90% for wind, 8.50% for Solar and 0.90% for Bio-mass for FY 2021-22 as per RERC (Renewable Energy Obligation) (Fifth Amendment) Regulation, 2019 dated 11.01.2019 as amended from time to time.
- 3.93 To compute the cost for FY 2020-21 and FY 2021-22, the actual per unit cost of FY 2020-21 has been considered, further the additional units during FY 2021-22 for solar and Biomass has been considered at Rs. 2.50 /unit and Rs. 6.81/unit respectively.
- 3.94 The energy availability and total power purchase cost from non-conventional energy sources have been summarized in the table below:

Table 34: Energy Availability (MU) and Cost (Rs. in Cr.)- Wind, Solar & Biomass for FY 2020-21 and FY 2021-22

Station	FY 2020-21		FY 2021-22	
	Energy Availability (MU)	Cost (Rs. in Cr.)	Energy Availability (MU)	Cost (Rs. in Cr.)
Wind	6211	3132	6774	3416
Solar	5236	1688	6470	1997
Biomass	578	420	685	493
Total	12025	5240	13929	5906

Short term Sources

- 3.95 After considering the energy available to Discoms based on their respective allocated shares, the Commission has estimated a surplus in energy availability for FY 2020-21 and FY 2021-22.
- 3.96 Commission estimated the Rajasthan state to be in surplus power by 8063 MU, and 8320 MU for FY 2020-21 and FY 2021-22 respectively. Discoms have proposed to sell the surplus power at the rate of Rs. 2.57 per/unit and Rs 2.50 per/unit, for FY 2020-21 and FY 2021-22 respectively. In this context, the Commission agrees with the Stakeholders' concern that the Discoms must try

to sell the surplus power at least equivalent to or higher than the variable charges of thermal generation, for example, STPS variable charges of Rs. 4.09 per unit for FY 2020-21 and 2% escalation during FY 2021-22. In light of above fact, the Commission has considered the sale price of surplus power at Rs. 4.09/unit during FY 2020-21 and 2% escalation during FY 2021-22.

3.97 However, there may have been a situation when Discoms may have resorted to short term power purchase. In that situation, the Regulation 78(6) provides that the Commission shall indicate a tariff for procurement of short term power. Accordingly, the Commission deems it proper to continue with the rate of Rs. 4/unit considered for this purpose in last year tariff order.

3.98 The Discoms are also directed to ensure strict compliance of merit order dispatch.

Total Power Purchase Cost

3.99 Based on the above, the summary of source wise and Discom wise breakup of power purchase quantum and cost for FY 2020-21 and FY 2021-22 as considered by the Commission for the three Discoms is given in the table below and details are given at Annexure "E":

Table 35: Energy Availability (MU) and Cost (Rs. In Cr.) for FY 2020-21 and FY 2021-22

Station	FY 2020-21		FY 2021-22	
	Energy Availability (MU)	Cost (Rs. In Cr.)	Energy Availability (MU)	Cost (Rs. In Cr.)
NTPC	10213	3519	10418	3589
NHPC	1640	575	1986	635
Others	23301	8368	21928	8040
NPCIL	2258	774	2303	790
Partnership Projects	2930	132	2989	135
RVUN	27342	13351	30610	14302
Lignite Power Projects	7637	3195	7789	3163
Wind Farms, Solar and Biomass	12025	5240	13929	5906
Gross Energy Available	87345	35155	91953	36559
Surplus	-8063	-3298	-8320	-3471
Total	79282	31857	83634	33089

Transmission Charges

Petitioners' Submission

- 3.100 Discoms submitted that for FY 2019-20, the transmission charges have been taken as per actual figures. No escalation has been assumed while projecting transmission charges for FY 2020-21 and FY 2021-22.
- 3.101 The details of the PGCIL, RVPN, RLDC and SLDC charges submitted by Discoms have been summarized in the table below:

Table 36: Transmission Charges & SLDC Charges for 2020-21 and FY 2021-22
(Rs. In Crore)

Particulars	Discoms' submission			
	JVVNL	AVVNL	JdVVNL	Total
FY 2020-21				
PGCIL Charges	819	552	663	2034
RVPN and Others Charges	1237	833	1000	3069
RLDC Charges	1	1	1	2
SLDC Charges	10	6	8	24
Total Transmission Charges	2065	1392	1671	5129
FY 2021-22				
PGCIL Charges	819	552	663	2034
RVPN and Others Charges	1237	833	1000	3069
RLDC Charges	1	1	1	2
SLDC Charges	10	6	8	24
Total Transmission Charges	2065	1392	1671	5129

Commission's Analysis

- 3.102 The Commission has considered the RVPN and SLDC charges for FY 2020-21 as per RVPN ARR and Tariff order dated 12.10.2020 and for FY 2021-22 RVPN and SLDC charges for FY 2020-21 have been escalated by 2%.
- 3.103 Further the Commission has considered PGCIL & other charges for FY 2020-21 as per actuals and for FY 2021-22, 2% escalation have been given on over FY 2020-21.
- 3.104 The transmission & SLDC charges approved by the Commission for FY 2020-21 and FY 2021-22 are as under:

Table 37: Transmission Charges approved by the Commission for FY 2020-21 and FY 2021-22 (Rs. In Crore)

Particulars	APPROVED			
	JVVNL	AVVNL	JdVVNL	Total
FY 2020-21				
PGCIL Charges	819	552	663	2034
RVPN Charges	1105	745	894	2744
RLDC Charges	1	1	1	2
SLDC Charges	9	6	7	23
Total Transmission Charges	1934	1303	1565	4803
FY 2021-22				
PGCIL Charges	836	563	676	2075
RVPN Charges	1127	760	912	2799
RLDC Charges	1	1	1	2
SLDC Charges	9	6	8	23
Total Transmission Charges	1973	1330	1596	4899

Proposed Investment Plan for FY 2020-21 and FY 2021-22

- 3.105 The Discoms have proposed investment under various projects/schemes to be executed along with the proposed targets in FY 2020-21 and FY 2021-22 and revised subsequently through additional submission as detailed below:

Table 38: Proposed Capital Expenditure for FY 2020-21 (Rs. in Crore)

Sr. No.	Name of schemes (Plan Work)	Proposed for F.Y. 2020-21			
		JVVNL	AVVNL	JdVVNL	TOTAL
1	Sub- Transmission & Distribution	455	360	393	1,208
2	Rural Electrification Works	163	570	454	1,187
3	Rajiv Gandhi Grameen Vidyutikaran Yojna	0.00	0.00	10	10
4	R-APDRP-A	100	0	5	105
5	R-APDRP-B	7	0	13	20
6	Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY)	49	75	34	158
7	Integrated Power Development Scheme (IPDS)	50	25	63	138
8	Sobhagya	20	75	37	132
9	Feeder Segregation	50	70	160	280
10	AP Supply (2 Block Regime)	40	32	51	123
11	Smart metering	234	10	65	309
12	DT Metering	0	25	0	25
13	RT-DAS	0	3	0	3
	Total	1,169	1,245	1,285	3,699

Table 39: Proposed Capital Expenditure for FY 2021-22**(Rs. in Crore)**

Sr. No.	Name of schemes (Plan Work)	Proposed for F.Y. 2021-22			
		JVVNL	AVVNL	JdVVNL	TOTAL
1	Sub- Transmission & Distribution	651	500	400	1,551
2	Rural Electrification Works	512	600	785	1,897
3	Feeder Segregation	932	300	1,136	2,368
4	AP Supply (2 Block Regime)	235	105	602	942
5	Smart metering	100	50	178	328
6	DT Metering	0.00	20	0.00	20
	Total	2,430	1,575	3,101	7,106

3.106 To execute the above work, the Discoms have proposed the funding from following sources:

Table 40: Source wise details of funding for FY 2020-21**(Rs. in Crore)**

Sr. No.	Sources of funding	JVVNL	AVVNL	JdVVNL	Total
1	Loan	621	696	899	2216
2	Grant	235	108	0	343
3	Equity	313	441	385	1139
	Total	1169	1245	1285	3699

Table 41: Source wise details of funding for FY 2021-22**(Rs. in Crore)**

Sr. No.	Sources of funding	JVVNL	AVVNL	JdVVNL	Total
1	Loan	1598	1003	2170	4771
2	Grant	0	0	0	0
3	Equity	831	573	930	2334
	Total	2430	1575	3101	7106

Sub Transmission and Distribution Infrastructure Works:

3.107 The Discoms have proposed a total investment of Rs. 1208 Crore and Rs. 1551 Crore in FY 2020-21 and FY 2021-22 respectively for sub transmission and distribution infrastructure works. The Discoms wise proposed investment and physical targets are provided below:

Table 42: Proposed Investment and physical target for sub-transmission & distribution works in FY 2020-21 and FY 2021-22

Sr. No.	Name of Schemes	Proposed Investment & Physical targets for F.Y. 2020-21			
		Units	JVVNL	AVVNL	JdVVNL
1	Sub- Transmission & Distribution				
a.	Proposed Investment	(Rs. in Crore)	455	360	393
b.	33/11 KV S/s	MVA	512	250	387
		Nos.	56	50	50
c.	33 KV Lines	KMs	650	250	350

Sr. No.	Name of Schemes	Proposed Investment & Physical targets for F.Y. 2021-22			
		Units	JVVNL	AVVNL	JdVVNL
1	Sub- Transmission & Distribution				
a.	Proposed Investment	(Rs. in Crore)	651	500	400
b.	33/11 KV S/s	MVA	506	260	450
		Nos.	58	50	70
c.	33 KV Lines	KMs	650	200	560

- 3.108 The Discoms have submitted that the above investments are required to strengthen the existing network so that the system becomes robust and improved and thereby is able to provide a quality and reliable supply to the consumers with less number of interruptions. These schemes are also aimed to intensify electrification in the Discom area and expansion of the distribution network.
- 3.109 The Discoms submitted that these schemes are identified on need basis, with the objective to increase reliability of the network, to strengthen the network and for improvement of the system to meet the demand growth; the circle planning department initiate the proposals along with the detailed technical due-diligence & after cost-benefit analysis of the proposed investment to be undertaken in the field. The proposals are being forwarded to the headquarters

for approval. The planning circle at headquarters selects the schemes on the basis of technical and financial feasibility and according to the available sanction for the year from the Government. All the schemes under Sub-Transmission and Distribution works, RE works are under Rs. 10 Cr. and the same are being implemented after administrative, technical and financial sanctions of the competent authority in accordance to delegation of powers (DOP).

Rural Electrification Works:

- 3.110 Discoms have proposed a total investment of Rs. 1187 Crore & Rs. 1897 Cr. in FY 2020-21 and FY 2021-22 respectively for rural electrification works which includes expansion of distribution network to release agriculture connection, reduction in system losses along with improvement of reliability parameters, providing domestic connections in rural areas and energization of wells with a view to increase water supply. The Discom wise proposed investment and physical targets are provided in table given below:

Table 43: Discom wise proposed investment for RE works in FY 2020-21 and FY 2021-22

Sr. No.	Name of Schemes	Proposed Investment & Physical targets for F.Y. 2020-21			
		Units	JVVNL	AVVNL	JdVVNL
1	Rural Electrification Works				
a.	Proposed Investment	(Rs. in Crore)	163	570	454
b.	Domestic connection rural	Nos.	90000	70000	40000
c.	Agriculture Pump Set RE	Nos.	10000	25000	15000

Sr. No.	Name of Schemes	Proposed Investment & Physical targets for F.Y. 2021-22			
		Units	JVVNL	AVVNL	JdVVNL
1	Rural Electrification Works				
a.	Proposed Investment	(Rs. in Crore)	512	600	785
b.	Domestic connection rural	Nos.	120000	100000	125000
c.	Agriculture Pump Set RE	Nos.	31500	25000	25000

Rajiv Gandhi Grameen Vidyutikaran Yojana:

- 3.111 Only JdVVNL have proposed an investment of Rs. 10.00 Crore under RGGVY in FY 2020-21 and nil in FY 2021-22, which includes creation of infrastructure required to electrify the identified villages, hamlets and to provide B.P.L and A.P.L. connections. The Discoms also submitted that the scheme provides for free of cost connection to all rural households living below poverty line. The schemes include supply of good quality power which would enable dispersal of small industries in rural areas, facilitate delivery of modern health care, education and application of information technologies.
- 3.112 Discom wise proposed investments are provided as under:

Table 44: Discom wise proposed investments for RGGVY FY 2020-21

Sr. No.	Name of schemes	Proposed investment for F.Y. 2020-21			
		Units	JVVNL	AVVNL	JdVVNL
1	Rajiv Gandhi Grameen Vidyutikaran Yojana	(Rs. In Crore)	0.00	0.00	10.00

R-APDRP-A and R-APDRP-B:

- 3.113 Jaipur Discom has proposed an investment of Rs. 100 Crore and JdVVNL has proposed an investment of Rs. 5 Crore in FY 2020-21 under RAPDRP-Part A and nil in FY 2021-22. Under RAPDRP-Part A scheme, works for developing IT enable activities such as SCADA etc. and strengthening of existing network have been taken up along with installation of hardware and software for data Center, disaster recovery Centre, establishment of customer care center at Discoms HQ's, installation of Modems for Meter Data Acquisition System etc.
- 3.114 Jaipur Discom has proposed an investment of Rs. 7 Crore and JdVVNL has proposed an investment of Rs. 13 Crore in FY 2020-21 under RAPDRP-Part B and nil in FY 2021-22. Under RAPDRP-Part B focus is on establishment of base line data, maintaining reliability of supply and reduction of AT&C losses through strengthening & up gradation of sub transmission and distribution network. This scheme covers cities and towns of urban areas with population of more than 30,000.

- 3.115 Initially 25% funds will be provided as loan from GOI and balance is to be raised from financial institutions. Based on the criteria for reduction of AT&C losses below 15% and maintaining the same below that level, 10% of the total project cost of the town will be converted into grant every year & that is maximum of 50% of the total project cost of a town can be converted into grant if the losses of that town are brought below the 15% and are maintained for 5 years.
- 3.116 The Discom wise proposed investments are provided in the table given below:

Table 45: Discom wise proposed investment in FY 2020-21(Rs. in Crore)

Sr. No.	Name of schemes	Proposed investment for FY 2020-21		
		JVVNL	AVVNL	JdVVNL
1	R-APDRP- Part A	100.00	0.00	5.00
2	R-APDRP- part B	7.00	0.00	13.00

Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

- 3.117 Discoms have proposed a total investment of Rs. 158 Crore in FY 2020-21 and nil in FY 2021-22 for Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) which includes separation of agriculture and non- agriculture feeders, strengthening and augmentation of sub-transmission & distribution infrastructure in rural areas and Rural electrification for completion of the targets laid down under RGGVY for 12th and 13th Plan by carrying forward the approved outlay for RGGVY to DDUGJY.
- 3.118 All Discoms are eligible for financial assistance under the scheme. Rural Electrification Corporation Limited (REC) will be the nodal agency for implementation of the scheme.

Table 46: Discom wise proposed investment for DDUGJY in FY 2020-21

Sr. No.	Name of schemes	Proposed investment for F.Y. 2020-21			
		Units	JVVNL	AVVNL	JdVVNL
1	DDUGJY	(Rs. in Crore)	49.00	75.00	34.00

AMI Smart Metering:

- 3.119 Discoms have proposed a total investment of Rs. 309 Cr. and Rs. 328 in FY 2020-21 and FY 2021-22 respectively under Smart Metering Scheme.
- 3.120 Advanced Metering Infrastructure, also referred as “Smart Metering” is the combination of the electronic meters with two-way communications technology for information, monitoring, and control. AMI initiative is targeted to achieve Operational Efficiencies, Protection of Revenue, Increased Cash Flow, Improvement in Customer Service & Conservation and Energy Efficiency.

Table 47: Discom wise proposed investment for Smart Metering in FY 2020-21 and FY 2021-22

Sr. No.	Name of Schemes	Proposed Investment for F.Y. 2020-21			
		Units	JVVNL	AVVNL	JdVVNL
1	Smart Metering	(Rs. in Crore)	234	10	65

Sr. No.	Name of Schemes	Proposed Investment for F.Y. 2021-22			
		Units	JVVNL	AVVNL	JdVVNL
1	Smart Metering	(Rs. in Crore)	100	50	178

Integrated Power Development Scheme (IPDS):

- 3.121 Discoms have proposed a total investment of Rs. 138.00 Crore in FY 2020-21 and nil in FY 2021-22 under Integrated Power Development Scheme, launched by Government of India, to extend financial assistance against capital expenditure & to address the gaps in sub transmission & distribution network and metering in urban areas to supplement the resources of Discoms/Power Dept.
- 3.122 The projects under the scheme is formulated for urban areas (Statutory Towns) only and will cover works relating to strengthening of sub-transmission & distribution network, including providing of solar panels on Govt. buildings with Net-metering, metering of feeders /distribution transformers / consumers and IT enablement of distribution sector. Scope of IT enablement extended to the statutory towns having population up to 5000 as per Census 2011.

Table 48: Discom wise proposed investment for Integrated Power Development Scheme in FY 2020-21

Sr. No.	Name of schemes	Proposed investment & for F.Y. 2020-21			
		Units	JVVNL	AVVNL	JdVVNL
	IPDS				
1	Proposed Investment	(Rs. in Crore)	50	25	63

Saubhagya Yojna

- 3.123 Discoms have proposed an investment of Rs. 132.00 Crore under Saubhagya Yojna scheme.
- 3.124 Saubhagya Yojna was launched by the GoI in September 2017. Under this scheme, electricity connections to all households (both APL and poor families) in rural areas and poor families in urban areas are provided. REC has been designated as its nodal agency. Scope of work of the scheme is:
- Providing last mile connectivity and electricity connections to all un-electrified households in rural areas
 - Providing Solar Photovoltaic (SPV) based standalone system for un-electrified households located in remote and inaccessible villages/habitations, where grid extension is not feasible or cost-effective.
 - Providing last mile connectivity and electricity connections to all remaining economically poor un-electrified households in urban areas. Non-poor urban households are excluded from this scheme.

Table 49: Discom wise proposed investment for Saubhagya in FY 2020-21

Sr. No.	Name of schemes	Proposed investment for F.Y. 2020-21			
		Units	JVVNL	AVVNL	JdVVNL
	Saubhagya				
1	Proposed Investment	(Rs. in Crore)	20.00	75.00	37.00

Feeders Segregation

- 3.125 Discoms have proposed a total investment of Rs. 280 Crore in FY 2020-21 and Rs. 2368 Crore. in FY 2021-22 under Feeder Segregation Scheme.
- 3.126 Segregation of agriculture feeders from mixed feeders is a vital step to ensure efficient rural power supply with minimal losses. The activity was undertaken by the Discom since 2004. From 2004 to 2010, segregation of agricultural load from non-agricultural load (virtual feeder segregation) was done. Since the rural consumers are scattered over a large area, a significant number of single-phase transformers were installed at rural areas to provide domestic connections at minimum expense. Further, 11 KV HVDS systems were installed to cater to the electricity demand of agriculture consumers.
- 3.127 Feeder Segregation works were also proposed in the DDUGJY Scheme of Government of India. However, during the implementation of this scheme, the shift of complete focus by Government of India on providing connections to the un-electrified households led to the most utilization of funds in release of connections and associated infrastructure. Discoms had to cut short the works proposed under DDUGJY scheme for Feeder Segregation.
- 3.128 By segregation of Agriculture feeder, an uninterrupted power supply may be given even in day hours utilizing the solar power. So the farmer will get the advantage to get supply in day hours and need not to go in to field in winter time when temperature in state touches to zero degree centigrade.
- 3.129 This project aims at -
- a) To manage uninterrupted block hour power supply to Agriculture Consumers
 - b) To enable uninterrupted 24 hrs supply to rural domestic consumers
 - c) 3-Ph supply to all revenue villages having population >500
 - d) To avoid misuse/theft of single-phase supply by Agriculture consumers
 - e) Better system planning and load management leading to reduction in T&D Loss
- 3.130 Following works are proposed to be carried out under the Segregation of agriculture feeders.
- a) Laying new 11 KV lines Three Phase
 - b) Shifting of 11 KV Single phase tapping to one feeder to other.
 - c) LT lines (three phase) works relating to shifting of Consumers

- d) Shifting of 11 KV Single phase tapping to one feeder to other.
- e) Providing additional Three Phase Distribution Transformers for providing three phase connection
- f) Creation of New 11 kV Bays & Feeder Metering

Table 50: Discom wise proposed investment for Feeder segregation Scheme in FY 2020-21 and FY 2021-22

Sr. No.	Name of Schemes	Proposed Investment for F.Y. 2020-21			
		Units	JVVNL	AVVNL	JdVVNL
1	Feeder Segregation	(Rs. in Crore)	50	70	160

Sr. No.	Name of Schemes	Proposed Investment for F.Y. 2021-22			
		Units	JVVNL	AVVNL	JdVVNL
1	Feeder Segregation	(Rs. in Crore)	932	300	1136

2-Block Supply to Agriculture Feeders

- 3.131 Discoms have proposed a total investment of Rs. 123 Crore and Rs. 942 Crore in FY 2020-21 and FY 2021-22 respectively under 2-Block Supply Scheme.
- 3.132 The State of Rajasthan, with ~1.6 Cr consumers, has about 14 lakh agriculture consumers. Being a desert state, the annual rainfall is insufficient to meet the water demand for agricultural activities. Thus, there is lack of free-flowing surface water to meet the irrigation needs of the agriculture lands. As a result, ~70% of irrigation is dependent on ground water. To pump ground water electric pump-sets are required, thereby making electricity supply a key input for agriculture.
- 3.133 At present, the Discom manages power supply to such agriculture consumers by providing power in four blocks. Weekly rotation of the four blocks is done to efficiently manage the demand of agriculture consumers and at the same time to ensure grid stability.
- 3.134 As a result, majority of agriculture consumers get power at inconvenient night hours, making it difficult for them to irrigate their lands. Often such agriculture consumers leave their pump-sets on throughout the night, leading to wastage of electricity as well as ground water. In order to relieve the agriculture consumers

of such inconvenience, Discoms had planned to provide day-time supply to agriculture consumers in 2 blocks.

- 3.135 Following works are to be undertaken for the Segregation of agriculture feeders.
- Strengthening of 33 kV Feeder Conductor
 - Capacity Augmentation of 33/11 kV Power Transformer
 - Providing of additional Power Transformer
 - Providing of 33 KV Kiosk on Incomer
 - New 33/11 KV substations

Table 51 Discom wise proposed investment for 2-Block Supply Scheme in FY 2020-21 and FY 2021-22

Sr. No.	Name of Schemes	Proposed Investment for F.Y. 2020-21			
		Un its	JVVNL	AVVNL	JdVVNL
1	AP Supply (2 Block Regime)	(Rs. in Crore)	40	32	51

Sr. No.	Name of Schemes	Proposed Investment for F.Y. 2021-22			
		Un its	JVVNL	AVVNL	JdVVNL
1	AP Supply (2 Block Regime)	(Rs. in Crore)	235	105	602

DT Metering

- 3.136 Ajmer Discom has proposed an investment of Rs. 25 Crore and Rs. 20 Crore. in FY 2020-21 & FY 2021-22 respectively under DT Metering Scheme.
- 3.137 The scheme involves implementation of AMR system for approx.18230 Nos. DTs under IPDS/ Municipal Towns of Ajmer Discom and 10362 Nos. of high value Consumers through the web-based system for Meter data Acquisition, Management and Analysis during FY 2020-21.
- 3.138 Main works of this scheme are as under:-
- Installation of AMR system for DTs. The objective is to implement an AMR system which will enable the Ajmer Discom to capture consumption data from an energy meter. The data can be used to analyze usage and manage consumption and to identify and resolve technical issues of its network.

- b) Installation of AMR system for Consumers. The objective is to implement an AMR system covering communication devices, data acquisition, analysis and reporting system.
- c) To develop an online system having dashboard to display the various information to be customized as per Ajmer Discom requirement.
- d) Web Based system for generation of reports & data analysis.
- e) Maintenance of AMR system implemented under new installations as well as existing AMR system installed under RAPDRP scheme.

Table 52: Discom wise proposed investment for DT Metering Scheme in FY 2020-21 & FY 2021-22

Sr. No.	Name of Schemes	Proposed Investment for F.Y. 2020-21			
		Un its	JVVNL	AVVNL	JdVVNL
1	DT Metering	(Rs. in Crore)	0.00	25	0.00

Sr. No.	Name of Schemes	Proposed Investment for F.Y. 2021-22			
		Un its	JVVNL	AVVNL	JdVVNL
1	DT Metering	(Rs. in Crore)	0.00	20	0.00

Real Time Acquisition System (RT-DAS)

- 3.139 Ajmer Discom has proposed an investment of Rs. 3 Crore in FY 2020-21 under RT-DAS.
- 3.140 This project aims to accurately measure reliability of power distribution network and facilitate utility to take suitable administrative action for enhancement of power reliability.
- 3.141 To measure reliability of distribution power, a reliable, robust, accurate system is a must. The same can be ensured by a real time data acquisition system (RT-DAS) using Feeder Remote Terminal Unit (FRTU) at S/S.
- 3.142 It shall also facilitate Utility to take appropriate measures for improvement of SAIDI/SAIFI by knowing the reason of poor values of indices.
- 3.143 The project covers installation of FRTUs for 799 Nos. 11kV Feeders emanating from 198 Nos. 33/11kV sub-stations of IPDS towns (other than SCADA town).

Table 53: Discom wise proposed investment for Real Time Acquisition System Scheme in FY 2020-21

Sr. No.	Name of Schemes	Proposed Investment for F.Y. 2020-21			
		Un its	JVVNL	AVVNL	JdVVNL
1	RT-DAS Proposed Investment	(Rs. in Crore)	0.00	3.00	0.00

REVAMPED DISTRIBUTION SCHEME

- 3.144 The Central Government has approved a Revamped Distribution Sector Scheme- a Reforms-based and Results-linked Scheme with an outlay of Rs.3,03,758 Crore over a period of five years from FY 2021-22 to FY 2025-26 with the objective to improve the quality, reliability and affordability of power supply to consumers through a financially sustainable and operationally efficient distribution sector. The Scheme aims to reduce the AT& C losses to pan-India levels of 12-15% and ACS-ARR gap to zero by 2024-25 by improving the operational efficiencies and financial sustainability of all DISCOMs/ Power Departments excluding Private Sector DISCOM.
- 3.145 DISCOMs/ Power Departments would be able to access funds under the Scheme for Pre-paid Smart Metering, System Metering and Distribution infrastructure works for loss reduction and modernisation. The financial assistance for Distribution infrastructure works under the Scheme would be subject to meeting pre-qualifying criteria as well as upon achievement of basic minimum benchmarks by the DISCOM and evaluated on the basis of Action plans.
- 3.146 The Scheme provides for annual appraisal of the DISCOM performance against predefined and agreed upon performance trajectories including AT&C losses, ACS-ARR gaps, infrastructure upgrade performance, consumer services, hours of supply, corporate governance, etc. DISCOMs have to score a minimum of 60% of marks and clear a minimum bar in respect to certain parameters to be able to be eligible for funding against the Scheme in that year.
- 3.147 Implementation of the Scheme would lead to consumer empowerment by way of prepaid Smart metering to be implemented in Public-Private-Partnership (PPP)

mode and leveraging Artificial Intelligence to analyze data generated through IT/OT devices including System Meters, prepaid Smart meters to prepare system generated energy accounting reports every month to enable DISCOMs to take informed decisions on loss reduction, demand forecasting, Time of Day (ToD) tariff, Renewable Energy (RE) Integration and for other predictive analysis.

- 3.148 The Discoms should ensure the compliance of above schemes and try to achieve the targets as set under the scheme thereby receiving the optimum grant support from Gol.
- 3.149 Post hearing Discoms have submitted actual data of FY 2020-21 of scheme wise capital expenditure as under:

Table 54: Actual data of FY 2020-21 of scheme wise capital expenditure (Rs in Cr.)

Sr. No	Scheme	JVVNL	AVVNL	JdVVNL	Total
1	ST&DD WORKS	508	344	446	1299
2	RGGVY	0	0	0	0
3	RE Works	515	479	691	1686
4	RAPDRP	19	0	20	39
5	MMSLVY/DDUGLY	70	0		70
6	Saubhagya Scheme	1	113	84	198
7	IPDS	9	21	14	44
8	Two Block Supply	0	13	18	30
9	DT Metering	0	15	0	15
10	DDUGLY New	0	120	34	154
11	Feeder Segregation	8	64	0	72
Total		1130	1169	1308	3607

- 3.150 The capital expenditure in past years and the envisaged plan of FY 2020-21 & FY 2021-22 is as under:

Table 55: Actual capital expenditure in past years and investment proposed for FY 2020-21 & FY 2021-22 (Rs in Cr.)

Sr.No.	Financial Year	JVVNL	AVVNL	JdVVNL	TOTAL
1	2017-18 (ACTUAL)	1573	1349	1318	4241
2	2018-19 (ACTUAL)	2767	2454	2195	7417
3	2019-20 (ACTUAL)	1783	2405	2199	6388
4	2020-21 (ACTUAL)	1130	1169	1308	3607
5	2020-21 (PROPOSED)	1169	1245	1285	3699
6	2021-22 (PROPOSED)	2430	1575	3101	7106

Analysis of the Commission and decision:

- 3.151 For FY 2020-21, the Commission observes that against the JVVNL, AVVNL and JdVVNL proposal of Rs. 1169 crore, Rs. 1245 crore and Rs. 1285 crore respectively, the Discoms have approximately incurred expenditure of Rs. 1130 crore, Rs.1169 crore and Rs.1308 crore respectively till March 2021. As the year of investment is already over, the investments actually made are deemed to be approved subject to true-up.
- 3.152 The effect of the Investment Plan gets reflected in tariff by way of capitalization. As such, the impact of investment made in FY 2020-21 in any case would get reflected in True-up petitions.
- 3.153 Further, for FY 2021-22 investment approval, Commission has relied on Hon'ble APTEL judgment in appeal no. 84 of 2006, which has been discussed in subsequent paras.
- 3.154 The issue of according approval by Regulatory Commission of investment plan of a utility had come up before Hon'ble APTEL in appeal no. 84 of 2006. The said appeal had arisen against order of the Karnataka State Regulatory Commission, wherein investment plan of the State Transmission Utility was reduced by the Commission.
- 3.155 Hon'ble APTEL in that case had examined at length the powers and functions of the Regulatory Commission as regards investment approval and observed in following para as under:

"XXXX

9. *The only provision, if at all which has a relevance is Section 86 (2), which is advisory in nature. This being the position it is obviously clear that the legislature has left it to the utilities to decide their plans of investment or improvement of system or expansion to meet the demand of power within their area including up gradation and maintenance for a better and quality generation, transmission or supply as the case may be. It is the commercial decision of the utility and its source to raise funds which falls within the domain of the utility and not liable to be interfered, except at the stage when utility claims for return on such investment, interest on capital expenditure and depreciation. It is at that stage the Commission shall undertake a prudent check and if deemed fit allow the claim. In appropriate cases the Commission may disallow such claims of utility and it is for the utility to bear the brunt of such investment and it cannot pass it on to consumers.*

.....

22. *The consumers interest also do not arise at this stage for consideration nor they could be an objector in respect of proposal or plan or investment by utility as the liability of the consumers, if any, arise or there could be a passing by way of return on equity or interest etc. as such contingency arises only when the Regulatory Commission subject to its prudent check allows such expenditure, while fixing the annual revenue requirement and determining the tariff. Till then, the consumers have no say and there could be no objection from their side. When the consumers complain poor service or failure to maintain supply, to face such a situation the utility has to plan in advance, invest in advance, execute the project or scheme for better performance and maintain."*

- 3.156 In the said judgment, it has been concluded that Regulatory Commission should confine itself to exercising prudent check on investment being made by licensee and should not delve in the area of micro management of utility. This inference has been drawn by Hon'ble APTEL after careful examination of the provisions of Electricity Act, 2003. Suffice to say that any control by a Regulatory Commission on investment plan of a licensee beyond requirement of prudent check would not be in consonance with Electricity Act, 2003.
- 3.157 In view of above, Hon'ble APTEL has clear findings on the subject of investment approval, that the Commission would be exercising only prudent check on the investment of the licensee and allow/dis-allow expenditure based on such prudent check instead of according project/scheme-wise approvals. Regulations have to be seen and applied within the overall mandate and objective of the Electricity Act.
- 3.158 For exercising prudent check of the proposed investment plan, the Commission has kept in view the following:
- a) The ceiling limit on investment as per investment guidelines attached with RERC (Investment Approval) Regulations, 2006;
 - b) The schemes and programme of Central Govt. like RGGVY, RAPDRP, Saubhagya, DDUGJY and IPDS which are formulated, approved and implemented as per guidelines of the Govt. of India;
 - c) Items/works not eligible for inclusion in investment plan;
 - d) The nature of proposed investment and reasons thereof.
- 3.159 Para E of investment guidelines as attached with RERC (investment approval) Regulation, 2006 provides that the size of the annual investment plan (including deposit works of the other agency and consumer/user's contribution) shall not exceed the ceiling limit determined, based on growth of load/sales and annual inflation rate. The deposit works shall be committed only to the extent such work

do not affect annual works planned by the licensees. The annual size of investment plan will be based on criterion that with the addition of assets, cost of generation, transmission and distribution shall not exceed the respective current cost by the inflation rate. For transmission and distribution licensees, it shall not exceed the following ceiling limits:

$$\text{Annual plan} = k * \text{GFA} * [(1 + \text{inflation rate}) * (1 + \text{growth rate}) - 1]$$

Where k=constant to convert GFA at the end of previous year to current cost of assets. Till same is worked out it shall be taken as 1.30.

Inflation rate = ratio of WPI as on 1st April of previous year and current year.

Growth rate = growth of sales envisaged for current year over that of previous year.

GFA = Gross Fixed Assets

3.160 Based on above formula, the ceiling limit for FY 2021-22 works out to be as under:

Table 56: Ceiling Limit for investment plan for FY 2021-22 (Rs. in Crore)

Sr. No.	Particulars	JVVNL	AVVNL	JdVVNL	Total
1	GFA closing figure of 20-21 (as per tariff petition)-Rs. Crores	22738	18189	18757	59684
2	K	1.30	1.30	1.30	1.30
3	Sale for FY 21 (MU) as per petition	23713	16738	21397	61848
4	Sale for FY 22 (MU) as per petition	26263	18444	23418	68124
5	Growth rate for sale (%)	10.75%	10.19%	9.44%	10.15%
6	Inflation (%)	3.24%	3.24%	3.24%	3.24%
7	Annual Plan ceiling -Rs. Crores	4238	3255	3168	10660

3.161 In respect of Sub Transmission and Distribution works, the Commission has observed that normally financial expenditure in Discoms is not commensurate with the physical target in a year and has exceeded the amount of the investment planned in past years. Care should be taken to initiate an investment in consonance with physical target or augmentation proposed. Unlike centrally sponsored scheme, the Discoms themselves are required to exercise prudence

and control over such investment. The Commission accordingly directs the Discoms to carry out special audit of Investment made by Discoms in all circles and to start with Jaipur city, Ajmer city & Jodhpur city circle to justify the investment made along with cost benefit analysis within 3 months and furnish the same to the Commission. Discom should also issue internal guidelines for field officer indicating steps to exercise prudence while proposing/executing investments.

- 3.162 It is further observed that accounting of scheme wise expenditure is pre-requisite for effective control over capital expenditure. This will avoid any mismatching and accounting under wrong heads. The accounting of expenses should be under respective schemes and care should be taken while booking of expenses under the appropriate head. Discom should ensure that they maintain and submit information in requisite formats.
- 3.163 Target of AT&C losses as given by Commission should be strictly monitored and adhered to while taking up various works and focus should be on IT enablement, Feeder/DT metering, AMR metering, Network strengthening and implementation of ERP system, etc.
- 3.164 It has been observed that centrally sponsored scheme comprises funding from GOI/GOR and the resources of Discoms as per funding pattern of the schemes. Release of funds under the schemes from GOI/GOR is subject to the fulfillment of various conditions as stipulated in the guidelines of such scheme. Therefore, Discoms should ensure release of entire funds from GOI/GOR as per prescribed funding pattern.
- 3.165 The Commission in its various orders has stressed on the need of Compliance of CEA (Measures relating to Safety and Electric Supply) Regulations, 2010 and CEA (Safety requirements for construction, operation and maintenance of electrical plants and electric lines) Regulations, 2011 and to ensure safety for its workmen, Public and Livestock. The Commission has many times stated that if Discoms need to spend any money for compliance of the Safety Regulations, the same can be claimed through Investment Plan/ARR and the Commission reiterate that is willing to consider any additional amount spent on training of employees and for compliance of Safety Regulations.
- 3.166 However, the Discoms have not proposed any specific investment on account of compliance of safety Regulation. The Commission directs the Discoms to file

the details of additional amount, if any, spent over and above O&M expenses towards safety compliance in next True up petition for FY 2020-21 and also furnish separate proposal of additional investment towards safety Compliance, if need be, in ARR for FY 2022-23.

- 3.167 It has been observed by the Commission that in the past Discoms have carried out campaign to identify high risk points and rectify them.
- 3.168 Commission directs that Discoms should carry out such campaign again and furnish the report to the Commission within 45 days of this order. It should be noted that removal of hazardous points is an on-going process and should not be stopped. Therefore, Discoms are directed to organise such campaign regularly and submit report and submit a certificate regarding compliance of CEA Safety Regulations by Discoms to the Commission on half yearly basis.
- 3.169 The Commission reiterates that it is the duty of the Discoms to ensure that safety tools/ devices are made available to each and every worker and training has been imparted to each and every technical worker/officer of the Discom. They should also provide a copy of safety manual in Hindi to each and every workmen and officer. Danger plates should be affixed everywhere, guarding/fencing should be provided wherever it is required and earthing and other protection should be checked /provided as per safety Regulations. Every circle officer should ensure that each line, plant or meter is checked from safety point of view as per the periodicity decided by the Discoms in accordance with safety Regulations. System of line patrolling must be followed vigorously and complaints related to safety must be given overriding priority. If need be, the Discoms may review their staffing pattern and working appropriately.
- 3.170 The envisaged expenditure of FY 2021-22 is lower than the ceiling expenditure worked out as per 2006 Regulations in respect of Discoms. As per the provisions of Electricity Act, 2003, the licensee is under obligation to provide electricity connection to consumers in his area and has to maintain quality of supply and meet standards of performance specified by the Commission. For ensuring this, appropriate investment is imperative.
- 3.171 As per RERC (Investment Approval) Regulation, 2006 Distribution Licensee can spent upto 1% of its Investment Plan on institutional strengthening. The Discoms can accordingly plan for training program & refresher program for all its employees and officers. Discoms should come up with a plan for training for all