

**ORISSA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAWAN
UNIT-VIII, BHUBANESWAR - 751 012

Present : Shri K.C. Badu, Member
 Shri B. K. Misra, Member

Case No. 21/2010

CESU	Petitioner
Vrs		
DoE, GoO	Respondent.

In the matter of: **Investment proposal of CESU for integrated system improvement and loss reduction schemes on availing loan assistance from REC/PFC.**

For Petitioner: Sri S. K. Dasgupta, CEO and Sri B.P. Mahapatra, CFO, CESU

For Respondent: Thakuna Das, Section Officer, DoE, GoO.

Date of Hearing: 29.04.2010

Date of Order : 20 .05.2010

ORDER

1. CEO, CESU stated that it has filed the investment proposal for approval of the Commission which would be taken up from the FY 2010-11 for integrated system improvement schemes on availing loan assistance from Rural Electrification Corporation Ltd. / Power Finance Corporation Ltd.

2. At present, CESU, a distribution licensee is providing power supply to central parts of Orissa including the State capital and many essential institutions and Govt. establishments. CESU is striving to maintain the prescribed performance standards for its consumers even with fragile network structure. Most distribution elements of the system are very old and in dilapidated state. Capital expenditure on system strengthening is required to extend quality service and to save the system from further deterioration. Although in the recent past, from time to time the Sub-stations and Over-head lines have been strengthened to match the load growth but the same is not commensurate with the requirements of the distribution system. Hence, CESU came forward with the prayer to allow the proposed investment for integrated system improvement schemes amounting to Rs. 204.12 Cr.

3. During the hearing, CEO, CESU made a Power Point Presentation stating following for approval of the proposed Investment Plans.
- CESU had submitted its Business Plan of Rs.2343 Cr. to the Commission for the period FY 2008-13.
 - Excluding the investment through RGGVY & BGJY, the investment through APDRP & Internal Resources including Loan was envisaged to the tune of Rs.1371 cr.
 - CESU was not eligible for R-APDRP where Rs.739 cr. was expected.
 - Subsequently, assistance to the tune of Rs.1217 cr. was sought from GoO through 13th Finance Commission
 - The DISCOMs should reduce their AT&C loss during Business Plan Period
 - Ageing & dilapidated distribution network should be renovated & upgraded on a war footing during the Business Plan period..
 - To start with, at least Rs.5000 cr. should be invested for such renovation & up gradation during 2010-11 & 2012-13 jointly by DISCOMs & State Government in the ratio of 51:49
 - CESU must also arrange Rs.994 cr. from different sources including internal resources for system improvements in proportion to the loan capital/ equity investment to be made by State Govt./GRIDCO during 2010-11 to 2012-13.
 - Under the existing laws and licence conditions, CESU shall develop, maintain & operate an efficient, coordinated & economical distribution system.
4. Under license condition 11, CESU has submitted its investment proposal of Rs.204.12 crore before the Commission for approval towards integrated system improvement & loss reduction schemes on availing loan assistance from Rural Electrification Corporation Ltd / Power Finance Corporation Ltd

Integrated System Improvement and Loss Reduction Programme						
Sl no	Assets	Investment (Rs.Cr.)	Investment (Rs.Cr.)	Investment (Rs.Cr.)	Investment (Rs.Cr.)	Investment (Rs.Cr.)
1	Re Conductoring of O.H. line Conductor (33kv & 11kv)	6.00	7.8	10.12	10.48	6.4
2	Energy Meter (1 ph,3 ph, LT panel box, MRI)	4.34	4.61	4.87	4.79	3.59
3	System Metering (33kv/ 11kv/DTmetering)	0.38	0.11	0.1	0.07	0.09
4	AB Cable	3.33	2.927	4.54	2.26	2.65
5	25 KVA / 16 KVA (HVDS)	0.83	1.34	1.08	0.57	0.71
6	Primary S/S Tr. Capacity addition (New & upgradation)	17.85	7.65	18.26	9.25	6.03
7	Distribution Tr. Capacity addition	3.83	3.14	4.08	2	2.15
8	IT Applications	7.01	1.31	1.31	0.71	0.69
9	R & M of Sub-Station (Primary/ Secondary S/S 33kv / 11kv Breakers)	2.05	1.76	1.86	2.14	1.73
10	New O.H Line AAAC 33kv & 11kv	2.28	4.19	8.37	2.51	4.42
11	Total	47.90	34.837	54.59	34.78	28.46

CAPITAL EXPENDITURE PLAN FOR FY 2010-11

Sl. No.	Capital Investment on	ELECTRICAL CIRCLE					CESU Rs.Cr
		BBSR-I	BBSR-II	Cuttack	Dhenkanal	Paradeep	
1.	Capacity Addition	23.73	12.55	24.20	13.39	9.91	83.78
2.	Technical Loss Reduction	8.55	12.15	18.82	13.17	10.97	63.66
3.	Commercial Loss Reduction	9.53	9.91	11.05	8.02	7.14	45.65
4.	I.T Application	7.01	1.31	1.31	0.71	0.69	11.03
TOTAL INVESTMENT		48.82	35.92	55.38	35.29	28.71	204.12

CAPACITY ADDITION PLAN

Sl.No	Items for Capacity expansion of Primary and Secondary S/S	Nos	Quantity (in MVA)	Estimated Cost (Rs. In Cr.)
1	Installation of 33/11 KV Sub-Stations (Primary)- New	44	290	32.4
2	Installation of 11/0.4 KV Distribution Sub-stations (Secondary) – New	653	73	15.21
3	Special R & M of Sub-station Primary & Secondary	64 500		4.45
4	Breaker and other accessory (33 KV / 11 KV)	50 84		5.08
5	Up gradation of Primary sub-station	103	411	26.64
	Total:			83.78

TECHNICAL LOSS REDUCTION PLAN

Sl.No	ITEMS	Quantity (in CKT KM)	Estimated Cost (Rs. In Crore)
1	Upgradation of 33 KV Over-head line conductor	1203 KMs	17.44
2	Upgradation of 11 KV Over-head line conductor	2201 KMS	23.36
Total Investment for Upgradation of Conductors			40.80
3	Capacitor Bank	36Nos	1.09 Crore
4	New HT Line for 33 KV	334 KM	12.38 crore
5	New HT Line for 11 KV	370 KM	9.39 crore
Total Investment for Loss Reduction Programme			22.86
Grand total			63.66

COMMERCIAL LOSS REDUCTION PLAN

Sl.No	ITEMS	Quantity	Estimated Cost (Rs.In Crore)
1	Metering for Single phase Consumers	120000 nos	13.30
2	Metering for Three phase Consumers	9300 Nos	7.38
3	Pole Mounted LT Pilar Box	4000 Nos	1.20
4	Energy Audit Feeder metering & DT Metering		1.07
5	AB Cable	1531 KM	15.71
6	Testing Utility/ Equipment		2.45
7	Distribution Transformers under HVDS	1142Nos	4.53
Total Investment for Loss Reduction Programme			45.65

IT APPLICATION

Sl.No	Item	Estimated Cost (Rs in Cr.)
1	<ul style="list-style-type: none"> Networking & computerizing all the field offices Enhancing capability of billing system through SAP 	9.00
2	<ul style="list-style-type: none"> On-line monitoring & automatic billing through AMR System Distribution Management System 	2.03
	TOTAL	11.03

5. CESU further submitted that it had aimed for the following:
- One Primary Sub-station per division per year, so that capacity addition including up-gradation will be 120%
 - 80% of the existing over-head lines will be re-conducted to reduce technical loss.
 - For loss calculation, average 70 Amps has been considered for over-head lines with conductor resistance at 60 degree Centigrade.
 - About 5 to 8% of the total consumer meters will be defective per year.
 - 10,000 meter per circle per year, besides providing total initial requirement during FY 2010-11
 - About 25% of the LT line in Theft Prone Areas are planned to be replaced by AB Cable & HVDS.
6. CESU also submitted that the IRR on such investment would be 14% with a pay back period of 2.6 years. CESU also submitted its circle-wise Return on Investment, as under:

Return on Investment for CESU

- Total Investment : Rs.204.11 Crs.
- Decrease in T &D loss: 5.6% from 39.43%
- Decrease in AT&C loss: 3.04% from 41.20%
- Benefits Accrued Per Year : Rs.78.89 Cr
- Benefit to be accrued up to FY 2017 : Rs. 473.34 Cr
- Pay Back Period : 2.6 Years
- Internal Rate of Return (IRR) : 14%
- NPV is positive by FY 2017

Return on Investment- Circle I

- Total Investment : Rs.48.82 crs
- Decrease in T &D loss: 5.80% from 31.98%
- Decrease in AT&C loss : 6.41 % from 31.84%
- Benefits Accrued Per Year : Rs.15.82 Cr
- Benefit to be accrued upto FY 2017 : Rs. 94.92 Cr
- Pay Back Period : 3.08 Years

• Internal Rate of Return :	24.47%
Return on Investment- Circle II	
• Total Investment :	Rs.35.92 Crs
• Decrease in T &D loss:	4.98% from 49.02%
• Decrease in AT&C loss :	5.09 % from 50.03%
• Benefits Accrued Per Year :	Rs.13.56 Cr
• Benefit to be accrued upto FY 2017 :	Rs. 81.36 Crs
• Pay Back Period :	2.64 Years
• Internal Rate of Return :	32.13%

Return on Investment- Cuttack

• Total Investment :	Rs.55.38 crs
• Decrease in T &D loss:	5.46% from 38.89%
• Decrease in AT&C loss :	5.39 % from 41.16%
• Benefits Accrued Per Year :	20.14 Cr
• Benefit to be accrued upto FY 2017 :	120.84 Cr
• Pay Back Period :	2.74 Years
• Internal Rate of Return :	30.16%

Return on Investment- Dhenkanal

• Total Investment :	Rs.35.29 crs
• Decrease in T &D loss:	5.51% from 36.62%
• Decrease in AT&C loss :	5.95 % from 39.25%
• Benefits Accrued Per Year :	Rs.18.29 Cr
• Benefit to be accrued upto FY 2017 :	Rs. 109.73 Cr
• Pay Back Period :	1.92 Years
• Internal Rate of Return :	52.32%

Return on Investment- Paradeep

• Total Investment :	Rs.28.70 crs
• Decrease in T &D loss:	6.48% from 44.99%
• Decrease in AT&C loss :	6.50 % from 48.43%
• Benefits Accrued Per Year :	Rs.11.08 Cr
• Benefit to be accrued upto FY 2017 :	Rs. 66.48 Cr
• Pay Back Period :	2.5 Years
• Internal Rate of Return :	33.35%

7. Commission's Observation:

- i.) After hearing the parties, the Commission feels that strengthening of the existing old and dilapidated distribution system is required, as there is a wide spread discontentment amongst the consumers of the State, due to poor quality of power supply. The Commission while approving the Business plan of all the four DISCOMs in their Order dated 20.03.2010 had also directed to file detailed project reports on the proposed investments incorporating terms and conditions of loan, the total cost involved, details of assets addition due to such investment, technical justification of such investment in various areas, technical loss reduction due to such investment and a cost benefit analysis of the entire project. In the above backdrop, the Commission accords in principle approval to

the above Capex proposal of CESU for the system improvement in order to develop, maintain and operate an efficient, coordinated and economical distribution system in its area of supply.

- ii.) The Commission notes with serious anguish about the present work culture being in practice in CESU. The Commission stresses on the real achievement of the results and directs that there should be an internal Memorandum of Understanding between the SE/GMs in charge of circles and CESU management. Deviation in implementation should be viewed seriously and penalty shall be imposed on circle Officers and Divisional Officers for not achieving the same within the specified time frame.
 - iii.) CESU should prepare a time schedule for phase-wise implementation of the proposed Capex plan and follow same strictly for its timely compliance.
 - iv.) Internal strengthening of CESU is required and the process starting from planning, tendering and procurement to utilization should be monitored by a dedicated contract management group. CESU is directed to put in place a mechanism of regular review of progress of projects.
 - v.) Final approval of Capital Outlay consequently to implementation of the programme is to be granted at the time of capitalization , after a diligent and proper prudence check and verification of the actual cost, actual quantity of material used, proper implementation of the scheme as per the time schedule fixed in the DPR and the cost benefit analysis.
8. Accordingly, the case is disposed of with the direction to CESU to proceed further in the matter as outlined in para-7 above.

Sd/-

(B. K. Misra)
Member

Sd/-

(K.C. Badu)
Member