महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/Capex/MSEDCL/2023-24/ 100 **Date: 05 February 2024**

To,

The Chairman & Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
Prakashgad, A.K.Marg,
Bandra (East), Mumbai- 400 051.

Subject: MSEDCL's Capex scheme for in-principle approval for infrastructure development in order to provide power supply to AG paid pending applications after 31 March 2018.

Ref:
1. MSEDCL letter CE(Dist.)/CW-I/AG Policy/0816 dated 31.01.2023.
2. MERC Email- Data Gaps-I dated 09.06.2023.
3. MSEDCL Email-Reply to Data gaps dated 27.07.2023.
4. Presentation held on dated 08.01.2024.

Sir,

This has reference to Capex Scheme submitted by MSEDCL vide letter under reference above and correspondence thereof.

1. The Scheme for 'infrastructure development in order to provide power supply to AG paid pending applications after 31 March 2018 amounting to **Rs. 4212.63 Crores** has been evaluated with reference to the MERC Capex Approval Regulations 2022. I am directed to convey in-principle clearance of the Scheme. The particulars of the Scheme as approved in -principle are outlined in **Annexure 'A'** and the breakup of the project cost is given in **Appendix 'A'**.

2. Please note that this in-principle clearance should not be construed as final approval for the ARR purpose. The Scheme will be open for scrutiny during the tariff determination process / ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc. ex post after implementation of the Scheme. MSEDCL shall submit the status of implementation of the Scheme with cost incurred till date, likely completion date etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

3. MSEDCL should submit six monthly progress reports as per the provisions of the Capex Approval Regulations 2022 giving status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

4. Assets created after execution of the Scheme should be maintained separately in the Asset Register. Separate accounting statement may be maintained for connections which have been created out of consumer funds and subsequently expenditure is refunded through energy bills. Such Assets shall be considered for GFA only after complete payment of expenditure cost to consumers.

5. MSEDCL is directed to endeavor to complete project within stipulated time frame. The increase in cost because of the delay in the execution of project will not be entertained in future. Also, the Commission will not grant the revised approval to the scheme. Further, the Commission will not allow capital cost, O&M cost and IDC against unutilized assets beyond the proposed date of COD till the asset is put to use.

6. Immediately after completion / commissioning of the Scheme, MSEDCL should communicate to the Commission the date of completion of the Scheme, item-wise actual cost incurred as per Appendix 'A', escalation in cost, if any, with reasons, the scope, and objectives of the Scheme and to what extent they have been achieved, etc. so as to facilitate a comparison between the in-principle clearance and the actual incurred cost.

7. MSEDCL shall plan the scheme roll-out in such a fashion that HT/LT ratio and overall supply quality will get improved.

8. If the asset constructed by MSEDCL remains unutilized beyond proposed COD, the Commission will approve the Aggregate Revenue Requirement (ARR) against such asset at depreciated cost from the date the assets actually put to use.

9. The Commission will not allow part capitalization against scheme unless such assets are put to use and benefiting the system.

10. If MSEDCL fails to initiate the work, including tendering process if any, within a period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled.

11. The major scope of the work shall be executed through competitive bidding process only. MSEDCL shall follow the guidelines provide in the Capex Approval Regulations 2022.

12. To ensure that MSEDCL has taken the measures to optimise the project cost and followed the competitive bidding the Commission may carry out third party asset verification including referring to the National Financial Reporting Authority (NFRA) after completion of the work as provided in Regulation 9.2 (16) of the Capex Approval Regulations 2022.

13. MSEDCL to follow up with the GoM for releasing equity component and should take efforts in collection of ACF funds.

Yours faithfully,

(Dr. Rajendra G. Ambekar)

Secretary, MERC

Encl: Annexure 'A', Appendix 'A'

Annexure – 'A'

Summary Appraisal

of

MSEDCL Scheme for Infrastructure development and Service connections for providing power supply to AG paid pending applications after 31st March 2018 under GoM's AG Policy -2020

A) Particulars furnished in the Feasibility Report by MSEDCL

<table>
<tr><td>1.</td><td>Name of the Scheme</td><td>Infrastructure development and Service connections for providing power supply to AG paid pending applications after 31 March 2018 under GoM's AG Policy -2020</td></tr>
<tr><td rowspan="2">2.</td><td>Estimated Cost</td><td>Rs. 4790.9 Crores</td></tr>
<tr><td>Approved Cost</td><td>Rs. 4212.63 Crores</td></tr>
<tr><td>3.</td><td>ROI/ Cost Benefit</td><td>1. To release power supply to 4,00,000 Nos of new AG consumers.
2. Development of infrastructure for improving the quality & reliability of the power supply
3. AG Consumer Tariff is a subsidized tariff hence no financial return is expected. This policy will benefit society by improving the living standard of farmers.</td></tr>
<tr><td>4.</td><td>Brief Scope of Work</td><td><table>
<tr><td>Targeted release of AG Pump connections</td><td>4,00,000</td></tr>
<tr><td>New Substations</td><td>120 Nos</td></tr>
<tr><td>Augmentation of existing Substations</td><td>123 Nos</td></tr>
<tr><td>New DTC</td><td>50898 Nos</td></tr>
<tr><td>Augmentation of DTCs</td><td>1558 Nos</td></tr>
<tr><td>HT Line</td><td>20023 Km</td></tr>
<tr><td>LT Line</td><td>13028 Km</td></tr>
</table></td></tr>
<tr><td>5.</td><td>Objective /Justification</td><td>• AG Policy has been envisaged by the Government of Maharashtra to extend electricity supply to the farmer's AG pumps which will ultimately improve the sustainability of MSEDCL & help farmers to improve their productivity.
• MSEDCL will get immense help in the recovery of electricity bills (current & arrears) of Ag consumers.</td></tr>
<tr><td>6.</td><td>Funding Arrangement</td><td><table>
<tr><th>Source of funds</th><th>Amount</th></tr>
<tr><td>Debt</td><td>-</td></tr>
<tr><td>Equity</td><td>- Rs 1500 Crores annually till March 2024.
- Fund generated through Recovery of AG bills from AG consumers.</td></tr>
</table></td></tr>
</table>



7.	**Time Frame/ Phasing of Expenditure**	Scheme is executed in five years FY 2020-21 to FY 2024-25.

B) Observations / Comments on Feasible Report

1.	**Prudence of Investment / Technical Justification**	This scheme is also technically feasible as: 1. In proposed scheme main thrust area is strengthening of backbone electricity Distribution network. 2. It will reduce the system distribution losses. 3. The supply voltage at consumer premises will improve. 4. Distribution system will be relieved from overloading.
2.	**Reasonability of Cost Estimate**	The rates are considered by referring to FY 2022-23 Cost date.
3.	**Comments on Cost Benefit Analysis**	Impact on Tariff due to proposed scheme with capital outlay of Rs. 4005.99 Crores, works out to be 0.001 to 0.031 Rs. /Unit.
4.	**Discrepancy / Shortcomings Observed**	Queries have been complied by the MSEDCL
5.	**Remarks / Specific Comments if any**	MSEDCL shall follow up with GoM for release of remaining portion of equity component assured under GR dated 18 December 2020.



Appendix A

Sl. No.	Particulars	Unit	MSEDCL Calculation			Approved by the Commission		
			RTU (Rs.Lac)	Quantity	Amount (Rs. Lac)	RTU (Rs.Lac)	Quantity	Amount (Rs. Lac)
33/11/ kV New S/S (Supply, erection, testing & commissioning)								
a)	1 x 5 MVA S/S	Nos.	266.34	109	29030.93	244.02	109	26598.18
b)	1 x 10 MVA S/S	Nos.	313.17	2	626.35	283.61	2	567.22
c)	2 x 5 MVA S/S	Nos.	409.05	8	3272.4	366.3	8	2930.4
d)	2 x 10 MVA S/S	Nos.	501.67	1	501.67	445.45	1	445.45
Total					**33431.35**			**30541.25**
33/11 kV Augmentation (Supply, erection, testing & commissioning)								
a)	5 MVA to 10 MVA	Nos.	158.28	22	3482.07	133.78	22	2943.16
b)	3.15 MVA to 10 MVA	Nos.	178.04	2	356.09	152.13	2	304.26
Total					**3838.16**			**3247.42**
33/11 kV Additional Power Transformer (Supply, erection, testing & commissioning)								
a)	1 x 5 MVA Power Transformer	Nos.	142.57	70	9980.1	122.15	70	8550.5
b)	1 x 10 MVA Power Transformer	Nos.	190.16	5	950.81	162.38	5	811.9
Total					**10930.91**			**9362.40**
33/11 kV Additional Power Transformer (Supply, erection, testing & commissioning)with Gantry structure for 33 KV bus.								
a)	1 x 5 MVA Power Transformer	Nos.	146.63	22	3225.77	128.17	22	2819.74
b)	1 x 5 MVA ,Outdoor S/S	Nos.	273.65	2	547.3	250.2	2	500.4
Total					**3773.07**			**3320.14**
Feeder Bay without Gantry Structure (Supply, erection, testing & commissioning)								
a)	33 kV feeder bay without Gantry Structure	Nos.	16.12	5	80.6	13.62	5	68.1
b)	11 kV feeder bay without Gantry Structure	Nos.	11.86	10	118.59	10.02	10	100.2
Total					**199.19**			**168.30**
33 kV line (Supply, erection, testing & commissioning)								
a)	Suspension type with 100 Sq. mm AAAC conductor on 152 X 152 mm 12 mtr RSJ	Km	18.66	244	4552.14	15.71	244	3833.24
b)	Suspension type with 100 Sq. mm AAAC conductor on 152 X 152 mm 13 mtr RSJ	Km	19.44	975	18952.35	16.37	975	15960.75
Total					**23504.49**			**19793.99**



22 kV Line (Supply, erection, testing & commissioning)								
a)	Suspention type with 100 Sq.mm AAAC lines on 152 x 152 mm 11 mtr. RSJ	Km	14.51	115	1668.21	12.22	115	1405.3
b)	22kv, 3 core X 95 sqmm XLPE Underground Cable	Km	28.6	5	142.99	24.09	5	120.45
					1811.21			**1525.75**
11 kV line (Supply, erection, testing & commissioning)								
a)	11kV, Pin type with 100 Sq. mm AAAC lines on 152 X 152 mm 11 mtr RSJ poles	Km	17.5	53	927.35	14.74	53	781.22
b)	11kV, Pin type with 55 Sq. mm AAAC conductor on 100 X 116 mm 9 mtr RSJ poles	Km	10.7	530	5670.63	9.01	530	4775.3
C)	11kV, Pin type with 55 Sq. mm AAAC conductor on 9 mtr PSC poles	Km	6.88	17925	123280.2	5.79	17925	103785.75
d)	11kV, 3 core X 300 sqmm XLPE Underground Cable	Km	34.82	35	1218.56	29.33	35	1026.55
e)	11kV, 3 core X 95 sqmm XLPE Underground Cable	Km	21.13	141	2978.93	17.79	141	2508.39
	Total			**18684**	**134076**			**112877.21**
9	**11/ 0.4 kV DTC (Supply, erection, testing & commissioning)**							
a)	25 kVA Dist. Transformer centers on 9 mtr RSJ poles with MCCB Dist box	nos	3.27	48760	159217.2	2.75	48760	134090
b)	63 kVA Dist. Transformer centers on 9mtr RSJ poles with MCCB Dist box	nos	4.34	1222	5299.32	3.65	1222	4460.3
c)	100 kVA Dist. Transformer centers on 9mtr RSJ poles with MCCB Dist box	nos	5.11	916	4678.05	4.3	916	3938.8
	Total			**50898**	**169195**			**142489.10**
10	**11/ 0.4 kV DTC Augmentation (Supply, erection, testing & commissioning)**							
a)	63 kVA to 100 kVA	nos	3.46	1457	5047.51	2.91	1457	5047.51
b)	100 kVA to 200 kVA	nos	6.2	76	471.19	5.22	76	471.19
	Capacitor Bank							
	Cost Data for 11 KV Station Type 1.2 MVAR Capacitor Bank with 0.2 % Reactor for rural area	nos	11.099	25	277.47	9.38	25	234.5
	Total			**1558**	**5796.17573**			**5753.20**
11	**LT line 3 Ph (Supply, erection, testing & commissioning)**							



a)	3 phase 4 wire on PSC pole 8 mtr with ACSR Weasel conductor for phase & neutral with 200 Kg	Km	3.79	428	1623.44	2.96	428	1266.88
b)	LT AB Cable	Km	4.93	12600	62118		12600	62118
c)	Service Connection Charges	nos	0.07	400000	28800		400000	28800
Total					**92541.44**			**92184.88**
	Grand Total				**479096.24**			**421263.64**



R- 004079/2020

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2019-20/026 Date: 17 January, 2020

To,
The Chairman & Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: - MSEDCL's Capex Proposal for Post Facto approval for Ag Special Package -I and II Scheme for Vidarbha and Marathwada Region (to be funded by the GoM as grant).

Special Package I: - Rs 819 Crs for FY 2015-16.
Special Package II: - Rs 910.73 Cr for FY 2016-17.

Ref: 1. MSEDCL Submitted DPR on 20 November, 2019.
2. Data Gaps mailed on 26 and 29 November, 2019.
3. Reply to the data Gaps dated 2 and 3 January, 2020.

Sir,

This has reference to your submitted DPR for "Post-facto *approval for Ag Special Package -I and II Scheme for Vidarbha and Marathwada Region for FY 2015-16 and for FY 2016-17*". The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

I am directed to convey the 'post-facto-approval' of the scheme. The particulars of the scheme as approved are outlined in the Annexure "A".

2. Please note that this post-facto approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the Scheme.

3. Assets created after execution of the Scheme should be maintained separately in the Asset Register.

4. This approval is subject to grant of Rs. 819 Crs. for FY 2015-16 and Rs. 910.73 Crs. for FY 2016-17 from the GoM.

Yours faithfully,

(Dr. Rajendra G. Ambekar)
Executive Director

Encl: Annexure "A"

To CE(Dist)
As the matter pertains to Distribution Section the same is forwarded for further needful pls.
SE(TRC)

M.S.E.D.C.L. S.E.TRC — E.E.-I, E.E.-II, E.E.-III, E.E.-IV, Mgr. (F&A), LDC

CE (PP), CE (RE), CE (Comm), SE (TRC), SE (LM)

९३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, मुंबई - ४०० ००५.
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 Fax : 022-2216 3976
Email : mercindia@merc.gov.in / mercindia@mercindia.org.in Website : www.merc.gov.in / www.mercindia.org.in

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Annexure – A

Feasibility Report for Capital Investment Scheme

<table>
<tr><th>S.N.</th><th>Particulars</th><th>Details</th></tr>
<tr><td>1</td><td>Title (Name of Scheme)</td><td>"Ag Special Package -I and II Scheme for Vidarbha and Marathwada Region for FY 2015-16 and for FY 2016-17 for post-facto approval "</td></tr>
<tr><td>2</td><td>Estimated and Approved Cost</td><td>
<table>
<tr><th></th><th>FY 2015-16</th><th>FY 2016-17</th></tr>
<tr><td>Estimated Cost</td><td>819 Crs.</td><td>910.73 Crs.</td></tr>
<tr><td>Approved Cost</td><td>819 Crs.</td><td>910.73 Crs.</td></tr>
</table>
</td></tr>
<tr><td>4</td><td>Return on Investment/ Cost Benefit</td><td>The schemes Ag Special Package (I and II) has been envisaged by Government of Maharashtra to provide electricity supply to Ag consumers in Vidarbha and Marathwada region, which will ultimately improve the agriculture production and living standard of farmers. Scheme is driven by social development motives, hence no monetary benefits are envisaged.</td></tr>
<tr><td>5</td><td>Brief Scope of work</td><td>
<table>
<tr><th></th><th>No of AG Connections</th><th>Funds</th><th>HT Line</th><th>LT Line</th><th>DTC</th></tr>
<tr><th></th><th>(Nos)</th><th>(Rs.Cr.)</th><th>(kms)</th><th>(kms)</th><th>(Nos)</th></tr>
<tr><td>Ag Special Package I FY 2015-16</td><td>95167</td><td>818.99</td><td>6104</td><td>18972</td><td>7206</td></tr>
<tr><td>Ag Special Package II FY 2016-17</td><td>79889</td><td>910.73</td><td>4684</td><td>13533</td><td>8740</td></tr>
</table>
</td></tr>
<tr><td>6</td><td>Objective / Justification</td><td>Energisation of Ag pumpset connections to clear the existing paid pending and prospective Ag pumps connections during FY 2015-16 and FY 16-17 in Vidarbha and Marathwada.</td></tr>
<tr><td>7</td><td>Funding Arrangement</td><td>100% grant from the Government of Maharashtra.</td></tr>
</table>



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महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2020-21/ **Date: 06 May, 2020**

To,
The Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: In-principle approval for MSEDCL's DPR for **"Implementation of District Planning and Development Council (DPDC) scheme for FY 2019-20 (Rs. 466.52 Cr)** to be funded by the GoM as grant.

Sir,

This has reference to your submitted DPR for "Implementation of District Planning and Development Council (DPDC) scheme for FY 2019-20 for in-principle approval of the Commission". The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

1. I am directed to convey the 'in-principle' clearance of the scheme for the cost of Rs. 466.52 Crs. The particulars of the scheme as approved are outlined in the Annexure "A" attached.

2. Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the Scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

3. MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

4. Assets created after execution of the Scheme should be maintained separately in the Asset Register.

5. Immediately after completion/commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

6. MSEDCL shall endeavor to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.

7. Major scope of work shall be executed through competitive bidding process only.

8. **This approval is subject to grant of Rs. 466.52 Crs. for FY 2019-20 from the GoM. Also, liberty is given to MSEDCL to take post-facto approval during MTR petition for any revised amount, over and above the in-principally approved amount.**

9. **It is to inform MSEDCL that, henceforth the proposals with 100% grants from Central/ State Government shall be submitted to the Commission for post facto approval with detail justification at the time of true up for the respective financial year with MYT/ MTR Petition, subject to prudence check by the Commission.**

Yours faithfully,

Sd/-
(Dr. Rajendra G. Ambekar)
Executive Director

Encl: Annexure “A”.

Annexure – A

A) Feasibility Report for Capital Investment Scheme

<table>
<tr><th>SN</th><th>Particulars</th><th>Details</th></tr>
<tr><td>1</td><td>Title (Name of Scheme)</td><td>“Implementation of District Planning and Development Council (DPDC) scheme for FY 2019-20 for In-principle approval”</td></tr>
<tr><td>2</td><td>Estimated and Approved Cost</td><td>
<table>
<tr><th>Sub-scheme Name</th><th>Scheme wise Estimated Cost (in Rs. Cr.)</th><th>Scheme wise Approved Amount (in Rs. Cr.)</th></tr>
<tr><td></td><td colspan="2">FY 2019-20</td></tr>
<tr><td>ND-SI</td><td>261.55</td><td>258.40</td></tr>
<tr><td>SCP</td><td>134.47</td><td>119.38</td></tr>
<tr><td>TSP</td><td>99.49</td><td>75.26</td></tr>
<tr><td>OTPS</td><td>19.86</td><td>13.48</td></tr>
<tr><td>Total</td><td>515.19</td><td>466.52</td></tr>
</table>
</td></tr>
<tr><td>3</td><td>Brief Scope of work</td><td>
<table>
<tr><th>Perticulars</th><th>Units</th><th>Target (As on March, 2020)</th></tr>
<tr><td>Ag Pumps Connection</td><td>Nos</td><td>2638</td></tr>
<tr><td>Domestic Connection</td><td>Nos</td><td>6442</td></tr>
<tr><td>PWW Connection</td><td>Nos</td><td>233</td></tr>
<tr><td>Industrial Connection</td><td>Nos</td><td>342</td></tr>
<tr><td>Wadipada Electrification</td><td>Nos</td><td>165</td></tr>
<tr><td>Street Light Connection</td><td>Nos</td><td>10752</td></tr>
<tr><td>Pole Replacement</td><td>Nos</td><td>3769</td></tr>
<tr><td>Conductor Replacement (HT/LT)</td><td>kms</td><td>192.15</td></tr>
<tr><td>Guarding Replacement</td><td>Nos</td><td>994</td></tr>
<tr><td>Line Shifting</td><td>kms</td><td>711.25</td></tr>
<tr><td>LT Line</td><td>kms</td><td>4661.83</td></tr>
<tr><td>HT Line</td><td>kms</td><td>2904.08</td></tr>
<tr><td>DTC</td><td>Nos</td><td>5865</td></tr>
<tr><td>Sanctioned fund as per GoM</td><td>In Rs. Cr.</td><td>515.19</td></tr>
</table>
</td></tr>
<tr><td>4</td><td>Objective / Justification</td><td>DPDC Schemes have been envisaged by Government of Maharashtra to extend electricity supply to deprived sections of the society, which will ultimately improve living standard of beneficiaries.</td></tr>
<tr><td>5</td><td>Funding Arrangement</td><td>100% grant from the Government of Maharashtra.</td></tr>
</table>

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2021-22/312 **Date: 13 July, 2021**

To,
The Chairman and Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: In-principle approval for the "DPR of evacuation of power from EHV substation commissioned by MSETCL for phase I and Phase II *(Total Approved Cost Rs. 222.01 Cr*).

Ref: 1. MSEDCL Submitted DPR on 04.01.2021.
2. Data Gaps raised on 08.01.2021 & 02.03.2021.
3. MSEDCL's reply dated 05.02.2021, 03.03.2021 & 09.03.2021

Sir,

1 This has reference to your submitted DPR, for in principle approval to the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

2 I am directed to convey the 'in-principle' clearance of the scheme for the cost of Rs. 222.01 Crs. The particulars of the scheme as approved are outlined in the Annexure "A" and Appendix "A" attached.

3 Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the Scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, कुलाबा, मुंबई - ४०० ००५.
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Colaba, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 Fax : 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in Website : www.merc.gov.in / www.mercindia.org.in

4 MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

5 Assets created after execution of the Scheme should be maintained separately in the Asset Register.

6 Immediately after completion/commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

7 MSEDCL shall endeavor to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.

8 Major scope of work shall be executed through competitive bidding process only.

9 The said approval is given subject to the detail scrutiny at the time of MTR/MYT. The Commission cautions MSEDCL that the project be pursued for timely completion. Increase in the cost due to delay may result in disallowance, subject to due diligence.

10 The Approved DPR dated 23 December, 2019 amounting to Rs. 92.35 Crs for evacuation of Power from 11 Nos of EHV Sub-Station deemed to be cancelled in view of this Revised Approval given to the Common Evacuation plan of Phase I and Phase II.

Yours faithfully,



(Dr. Rajendra G. Ambekar)
Executive Director

Encl: Annexure “A” and Appendix “A”

Annexure A

<table>
<tr><td>Name of the scheme</td><td>Phase I and Phase II project scheme of evacuation of power from EHV substation commissioned by MSETCL</td></tr>
<tr><td>Estimated cost proposed by MSEDCL</td><td>Rs.129.65 Crores (Project Phase-II)
Rs. 222.01 Crores (Total Scheme Cost-Revised for Phase I & II)</td></tr>
<tr><td>In-principle approval accorded</td><td>Rs. 129.65 Crores (Project Phase-II)
Rs. 222.01 Crores (Scheme Cost-Revised Common for Phase I & II)</td></tr>
<tr><td>Cost benefit of Phase II DPR</td><td>• Reduction in energy loss (MUs) – 283.31
• Net Value of additional Energy Sales (Rs. Crores)- 207.10
• Financial Internal rate of Return(FIRR)- 336.68 %</td></tr>
<tr><td>Cost benefit for the Combined DPR of Phase I & II</td><td>• Reduction in energy loss (MUs) – 464.06
• Net Value of additional Energy Sales (Rs. Crores)- 339.23
• Financial Internal rate of Return (FIRR)- 163.25 %</td></tr>
<tr><td>Scope of the works in brief</td><td>
<table>
<tr><th></th><th>Unit</th><th>Phase I</th><th>Phase II</th><th>Total</th></tr>
<tr><td>33 kV Single Ckt O/H Line</td><td>KM</td><td>505.9</td><td>786.92</td><td>1292.82</td></tr>
<tr><td>33 kV DoubleCkt O/H Line</td><td>KM</td><td>42.5</td><td>29</td><td>71.5</td></tr>
<tr><td>33 kV U/g cable</td><td>KM</td><td>28.2</td><td>33.95</td><td>62.15</td></tr>
<tr><td>Single pole cut point structure</td><td>Nos</td><td>161</td><td>57</td><td>218</td></tr>
<tr><td>Double pole cut point structure</td><td>Nos</td><td>113</td><td>224</td><td>337</td></tr>
<tr><td>33kV feeder bay</td><td>Nos</td><td>33</td><td>42</td><td>75</td></tr>
<tr><td>Tapping structure</td><td>Nos</td><td>0</td><td>5</td><td>5</td></tr>
<tr><td>Isolator</td><td>Nos</td><td>15</td><td>22</td><td>37</td></tr>
<tr><td>AMR</td><td>Nos</td><td>0</td><td>1</td><td>1</td></tr>
</table>
</td></tr>
<tr><td>Objectives/Justification</td><td>• To utilize commissioned transmission network
• To evacuate power from EHV S/S
• To reduce overloading on existing EHV substation.
• To improve voltage regulation of existing feeders.
• Reduce interruptions & breakdowns in power supply.
• To meet load of prospective consumers.</td></tr>
<tr><td>Funding arrangement</td><td>The financial tie upof Rs. 73.83 Crores against approved DPR cost Rs. 92.35 Crores (1st Phase) is done with 80:20 debt:equity ratio. The financial tie up for Project Phase-II shall be arranged from financial institutions like REC/ PFC.</td></tr>
</table>

Time frame/phasing out of expenditure	Sr No	Particulars		Phasing of Capex in Rs. Cr.				
				FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	TOTAL
	1	**Phase I DPR**	Capital Expenditure	51.07	41.28	-	-	92.35
			Capitalisation	51.07	41.28	-	-	92.35
	2	**Phase II DPR**	Capital Expenditure	-	-	49.65	80	129.65
			Capitalisation	-	-	49.65	80	129.65
		TOTAL		**51.07**	**41.28**	**49.65**	**80**	**222.01**

Observations / Comments on Feasibility Report

1.	Prudence of Investment / Technical Justification	For utilization of commissioned transmission network and improved power supply quality.
2.	Reasonability of Cost Estimate	Based on Cost Data of FY 19-20 except for 132/33 KV Kanzara (Murtijapur) based on Cost Data of FY 18-19. It is directed to follow the open tender competitive bidding process for selecting an agency for supply of these equipments, in order to ensure least cost procurement while executing the Capex proposals.
3.	Comments on Cost Benefit Analysis	For Phase II: • Total amount of savings in power purchase - Rs. 207.10 Cr due to reduction in MU Loss of 283.31 MUs. • Internal Rate of Return – 336.68%. For Revised Common Phase I & II : • Total amount of savings in power purchase - Rs. 339.23 Cr due to reduction in MU Loss of 464.06 MUs. • Internal Rate of Return – 163.25%.
4.	Discrepancy/Shortcomings Observed	Compiled by MSEDCL
5.	Remarks/Specific Comments, if any	-

Name of List of EHV Sub-Stations for evacuation of power (Phase wise):

Phase I			
Sr No	**Name of Zone**	**Votage Level**	**Name of proposed EHV substation**
1	Buldhana	132/33 kV	Deulgaon Raja, Dist.Buldhana
2	Jalna	220/132/ 33 kV	Nagewadi, Dist. Jalna
3	Osmanabad	220/132/ 33 kV	Narangwadi, Dist.Osmanabad
4	Yavatmal	132/33 kV	Ralegaon, Dist. Yavatmal
5	Wardha	220/33 kV	Karanja, Dist.Wardha
6	Nashik	132 / 33kV	Babhulwada / Wadzire, Dist. Ahmednagar
7	Amaravati	220 /33 kV	Vihigaon, Dist. Amravati
8	Chnadrapur	132 /33 kV	Chamorshi , Dist. Gadchiroli
9	Jalgaon	220 / 33kV	Kekatnimbhora, Dist. Jalgaon
10	Nanded	132 /33 kV	Kolsa, Dist. Hingoli
11	Amaravati	220/33 kV	Renukapur, Tal. Ner, DistYavatmal

Phase II			
Sr. No	**Name of Zone**	**Voltage Level**	**Name of proposed EHV substation**
1	Akola	132/33 KV	Wayal (JalgaonJamod), Dist. Buldhana
2	Baramati	220/33 kV	Loni Deokar , Dist. Baramati
3	Baramati	132/33 KV	Wagdari, Dist. Solapur
4	Baramati	132/33 KV	KawatheYamai, Dist. Baramati
5	Amravati	132/33 KV	Jawala, DistYavalmal
6	Latur	220/33 kV	Jalkot, Dist. Latur
7	Amravati	220/33 KV	Renukapur, Dist.Yavatmal
8	Jalgaon	132/33 KV	Dhadgaon, Dist. Nandurbar
9	Chandrpur	220/33 KV	Nagbhid. Dist. Chandrapur
10	Baramati	132/33 KV	Nimboni, Mangalweda, Solapur
11	Chandrapur	132/33 KV	Kolari, Dist. Gadchiroli
12	Jalgaon	132/33 KV	Kothali, Dist, Jalgaon
13	Jalgaon	132/33 KV	Karki, Dist, Jalgaon
14	Nashik	132/33 KV	Sinnar Shaha
15	Nashik	220/33 KV	Bhose (level creation)
16	Akola	132/33 KV	Murtijapur (Kanzara)
17	Nashik	132/33 KV	Yeola (Kotamgaon-Gavhangaon)

Appendix –A

SN	Description	Unit	Unit rate	Qty	Cost (Rs.Crs.)	Unit rate	Qty	Cost (Rs.Crs.)	Unit rate	Qty	Cost (Rs.Crs.)
			Phase I			Phase II			Revised Combined Approval (Phase I & II)		
1	33 kV S/c line suspension type with 100 sq.mm AAAC conductor on 152x152 mm 12 mtr RSJ	Kms	12.255	105	12.87	0	0	0	12.255	105	12.87
2	33 kV S/c line suspension type with 100 sq.mm AAAC conductor on 152x152 mm 13 mtr RSJ	Kms	12.76	318.4	40.63	12.76	763.92	97.48	12.76	1082.32	138.11
3	33 kV S/c line suspension type with 100 sq.mm AAAC conductor on 152x152 mm 13 mtr RSJ	Kms	12.77	21.5	2.75	0	0	0	12.77	21.5	2.75
4	33KV S/C Suspension type with 100 Sq. mm AAAC conductor on 152 X 152 mm 13 mtr RSJ(As per cost data 2017-18)	Kms	0	0	0	13.51	23	3.11	13.51	23	3.11
5	33 KV S/C line Pin type with 100 Sq. mm AAAC conductor on 152 X 152 mm 11mtr RSJ(cost data 2018-19)	Kms	11.2	41	4.59	0	0	0	11.2	41	4.59
6	33 KV S/C line Pin type with 100 Sq. mm AAAC conductor on 152 X 152 mm 11mtr RSJ(cost data 2018-19)	Kms	10.985	20	2.2	0	0	0	10.985	20	2.2
7	33 kV D/c line suspension type with 100 sq.mm AAAC conductor on 152x152 mm 13 mtr RSJ	Kms	25.545	13.5	3.45	0	0	0	25.545	13.5	3.45
8	33 kV D/c line suspension type with 100 sq.mm AAAC conductor on 152x152 mm 11 mtr RSJ (As per cost data 2018-19)	Kms	17.54	24	4.21	0	0	0	17.54	24	4.21
9	33 kV D/c line suspension type with 100 sq.mm AAAC conductor on 152x152 mm 11 mtr RSJ (As per cost data 2018-19)	Kms	16.48	5	0.82	0	0	0	16.48	5	0.82

SN	Description	Unit	Unit rate	Qty	Cost (Rs.Crs.)	Unit rate	Qty	Cost (Rs.Crs.)	Unit rate	Qty	Cost (Rs.Crs.)
			Phase I			Phase II			Revised Combined Approval (Phase I & II)		
10	33 KV D/C Suspension type with 100 Sq. mm AAAC conductor on 152 X 152 mm 13 mtr RSJ	Kms	0	0	0	17.1	11	1.88	17.1	11	1.88
11	D/C Suspension type with 100 Sq. mm AAAC conductor on 152 X 152 mm 13 mtr RSJ	Kms	0	0	0	18.91	18	3.4	18.91	18	3.4
12	Express/Highway crossing with 100 sqmm conductor on 152x152 RSJ 13 Mtr poles for one span of 30 Mtr	Kms	2.534	11	0.28	2.534	4	0.1	2.534	15	0.38
13	Laying of 33kV, 3 core X 300 sqmm XLPE Underground Cable	Kms	35.158	24.2	8.51	35.158	30.95	10.88	35.158	55.15	19.39
14	Laying of 33kV, 3 core X 300 sqmm XLPE Underground Cable	Kms	13.042	4	0.52	0	0	0	13.042	4	0.52
15	Laying of 33kV, 3 core X 300 sqmm XLPE Underground Cable (As per cost data 2017-18)	Kms	0	0	0	6.034	1	0.06	6.034	1	0.06
16	Laying of 33kV, 3 core X 300 sqmm XLPE Underground Cable(As per cost data 2017-18)	Kms				8.09	2	0.16	8.09	2	0.16
17	33kV, 3 core X 300 sqmm XLPE Underground Cable for Railway line crossing for 60 mtr span with isolator on DP structure with both side isolator.	Span	12.25	5	0.61	12.25	11	1.35	12.25	16	1.96
18	33kV, 3 core X 300 sqmm XLPE Underground Cable for Railway line crossing for 60 mtr span with isolator on DP structure with both side isolator.	Kms	13.63522	2	0.27	0	0	0	13.63522	2	0.27
19	33kV, 3 core X 300 sqmm XLPE Underground Cable for Railway crossing (As per cost data 2017-18)	Kms	0	0	0	13.71	1	0.14	13.71	1	0.14
20	33 KV River crossing with 100 sqmm conductor on 152x152 13 Mtr long RSJ pole	Span	2.579	3	0.077	2.579	3	0.077	2.579	6	0.154

S N	Description	Unit	Unit rate	Qty	Cost (Rs.Crs.)	Unit rate	Qty	Cost (Rs.Crs.)	Unit rate	Qty	Cost (Rs.Crs.)
			Phase I			Phase II			Revised Combined Approval (Phase I & II)		
21	33 kV Single Circuit XLPE cable 300 sqmm for Express/Highway Crossing on 152 X 152 RSJ 13 mtr Poles	No	0	0	0	2.23	3	0.07	2.23	3	0.07
22	Laying of 33 KV, 3C 300 Sqmm XLPE U/G cable for Railway crossing	Kms	12.38529	3	0.37	0	0	0	12.38529	3	0.37
23	Double pole cut point structure of 33KV line using 13 Mtr long RSJ pole	Nos.	1.306	113	1.48	1.306	195	2.55	1.306	308	4.03
	Douple pole structure(cut point) of- 33 kv line using13 m long RSJ pole (As per cost data 2017-18)	Nos	0	0	0	1.24	29	0.36	1.24	29	0.36
	Douple pole structure(cut point) of- 33 kv line using11 m long RSJ pole (As per cost data 2018-19)	Nos	1.13	5	0.06	0	0	0	1.13	5	0.06
	Douple pole structure(cut point) of- 33 kv line using11 m long RSJ pole	Nos	1.19	20	0.24	0		0	1.19	20	0.24
24	Single pole cut point structure for 33 KV line on 13 Mtr RSJ pole	Nos.	1.116	161	1.8	1.116	57	0.64	1.116	218	2.44
	Single pole cut point structure for 33 KV line on 11 Mtr RSJ pole	Nos	1	128	1.28	0	0	0	1	128	1.28
	Single pole cut point structure for 33 KV line on 13 Mtr RSJ pole	Nos	1.13	12	0.14				1.13	12	0.14
25	33 KV Feeder bay	Nos.	12.888	7	0.9	12.88	7	0.9	12.88	14	1.8
	33 KV Feeder bay(As per cost data 2018-19)	Nos	12.3	4	0.49	0	0	0	12.3	4	0.49
	33 KV Feeder bay without Gantry structure & PT	Nos	1.89	6	0.11	0	0	0	1.89	6	0.11
	33 KV Feeder bay with Gantry structure & PT	Nos	14.858	16	2.38	14.858	35	5.2	14.858	51	7.58
26	33 kV Isolator 800 A with EB & with structure	Nos	8.566	6	0.51	0	0	0	8.566	6	0.51
	33 kV Isolator 800 A without EB & with structure	Nos	2.527	5	0.13	2.527	2	0.05	2.527	7	0.18
	33KV Isolator without EB & with structure	Nos	0	0	0	2.14	12	0.26	2.14	12	0.26

S N	Description	Unit	Unit rate	Qty	Cost (Rs.Crs.)	Unit rate	Qty	Cost (Rs.Crs.)	Unit rate	Qty	Cost (Rs.Crs.)
			Phase I			Phase II			Revised Combined Approval (Phase I & II)		
	33 kV Isolator 800 A without EB	Nos	0	0	0	0.82	4	0.03	0.82	4	0.03
	33 KV Isolator	Nos	2.215	4	0.09	0	0	0	2.215	4	0.09
	33 KV Isolator on DOUPLE POLE STRUCTURE USING13 M LONG RSJ POLE	Nos	0	0	0	2.23	4	0.09	2.23	4	0.09
27	Providing HDD Bore for laying U/G Cable	KMS	24	0.54	0.13	24	0.83	0.2	24	1.37	0.33
	Providing HDPE Pipe	KMS	0	0	0	10.5	0.2	0.02	10.5	0.2	0.02
28	33 kV, Tapping Structure using 100X116, 11 mtr RSJ Pole	Nos	0	0	0	3.76	2	0.08	3.76	2	0.08
	33 kV, Tapping Structure using 100X116, 13mtr RSJ Pole	Nos	0	0	0	4.44	3	0.13	4.44	3	0.13
29	132 KV Tower	Set	42.425	1	0.42	0	0	0	42.425	1	0.42
30	Forest Tree cutting charges	LS	0	0	0	0	LS	0.1		LS	0.1
31	33 KV U/G Road crossing	Nos	0	0	0	16.16	2	0.32	16.16	2	0.32
32	AMR	Nos	0	0	0	0.05	1	0.0005	0.05	1	0.0005
33	Road Cutting permission charges	Kms	1	0.55	0.01	0	0	0	1	0.55	0.01
	Road resurfacing charges (Bituminous Road)	Kms	16.94	0.2	0.03	0	0	0	16.94	0.2	0.03
34	18% GST							0.02			0.02
Total Cost in Rs. Crs.					**92.35**			**129.65**			**222.01**

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2022-23/0673 **Date:** 26 **December 2022**

To,
The Chairman & Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: MSEDCL's Capex scheme for Evacuation of power from EHV substations – (Phase III).

Ref:
1. MSEDCL Letter No. ED (Dist-II)/MERC/Evac. DPR Ph-III/09697 Dated 09 April 2022.
2. MERC Email dated 29 November 2022
3. MSEDCL Email dated 9 December 2022

Sir,

1 This has reference to your submitted DPR, for in principle approval to the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February 2005.

2 I am directed to convey the 'in-principle' clearance of the scheme for the cost of Rs. 155.81 Crores. The particulars of the scheme as approved are outlined in the Annexures A & B.

3 Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process / ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the Scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

4 MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

5 Assets created after execution of the Scheme should be maintained separately in the Asset Register.

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, मुंबई - ४०० ००५.
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 **Fax :** 022-2216 3976
E-mail : mercindia@merc.gov.in **Website :** www.merc.gov.in

6 In case of evacuation arrangement from 132 kV Achalpur S/Stn, MSEDCL has proposed underground cable works of 25 km with intention to avert any possible RoW issues. Although, the Commission has considered such proposal for in-principle approval, MSEDCL is directed to take all efforts to lay over ahead lines so as to reduce the cost implication on consumer tariff. During capitalization of this work, MSEDCL has to established efforts taken in this regard.

7 Immediately after completion / commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

8 All works under the scope of the DPR shall be executed through transparent and competitive bidding process. MSEDCL shall not start tenderization activity, unless 95% works of EHV substation gets completed and EHV project is its last lag of charging.

9 MSEDCL shall endeavor to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and will be required to obtain revised in-principle approval of the Commission with justification for delay.

10 MSEDCL shall keep accounts of scrap generated separately and be shown as non-tariff income.

11 The said approval is given subject to the detail scrutiny at the time of MTR/MYT. Timely completion of project shall be the priority area and increase in the cost due to delay may result in disallowance, subject to due diligence.

12 MSEDCL shall follow up with local authority to provide concessions in RI charges. Further, during capitalization, MSEDCL shall submit combined statement of actual incurrence of RI charges in proposed locations.

Yours faithfully,

(Dr. Rajendra G. Ambekar)
Executive Director

Encl: Annexure A & B

Annexure A

Feasibility Report for Capital Investment Scheme:

Name of the scheme	MSEDCL's Capex scheme for Evacuation of power from EHV substations – (Phase III)
Estimated cost proposed by MSEDCL	Phase III - Proposed Cost – Rs. 174.38 Crores
In-principle approval accorded	Phase III - Proposed Cost – Rs. 155.81 Crores
Cost benefit	For Phase III - • Reduction in energy loss –34.64 MUs • Net Value of additional Energy Sales (Rs Crores)- Rs.23.11 Crores per annum over project lifecycle.
Scope of the works in brief	▪ 33 kV Single Ckt O/H Line –95.5 Kms. ▪ 22 KV Single Ckt O/H Line – 5 Kms ▪ 33 kV Double Ckt O/H Line –41 Kms. ▪ 33 kV U/g cable- 243.90 Kms ▪ 22 KV U/G cable - 41.50 Kms ▪ Double pole cut point structure –87 Nos ▪ 33kV feeder bay– 21 Nos. ▪ 33 KV GIS bay – 2 Nos ▪ 33 KV RUM - 23 Nos ▪ 22 KV RMU – 7 Nos
Objectives / Justification	o To utilize commissioned transmission network o To evacuate power from EHV S/S o To reduce overloading on existing EHV substation. o To improve voltage regulation of existing feeders. o Reduce interruptions & breakdowns in power supply. o To meet load of prospective consumers.
Funding arrangement	The financial tie up for Project Phase-III shall be arranged from financial institutions like REC/ PFC
Time frame / phasing out of expenditure	**(Amount in Rs. Cr.)**

Description	Capex	Capitalization
FY2022-23	53.21	-
FY2023-24	102.60	155.81
	155.81	**155.81**

Observations / Comments on Feasibility Report

1.	Prudence of Investment / Technical Justification	The main objective of the Scheme is to evacuate power from EHV S/S and to reduce overloading on existing EHV substation. The Scheme will help in providing uninterrupted power supply, meeting load of prospective consumers, reducing distribution losses and improving voltage regulation of existing feeders.
2.	Reasonability of Cost Estimate	The open tender competitive bidding process need to be followed up for selecting an agency for infrastructure development, in order to ensure least cost procurement while executing the Capex proposals.
3.	Comments on Cost Benefit Analysis	Load bifurcation and feeder separation will help for System strengthening, reliable power supply, minimize distribution transformer failure and to reduce distribution losses as well.
4.	Discrepancy/Shortcomings Observed	MSEDCL has prepared DPR based on earlier approved Phase I & II.
5.	Remarks/Specific Comments if any	Based on technical scrutiny and scope suggested by MSEDCL, the scheme seems to be technically and commercially prudent.

Annexure-A

Scope of Work

Sr No.	Activity No	Description	Unit	Unit rate Rs.Lakhs	Qty.	Cost (Rs Crs.)
1	2	3	4	5	6	7
1	702	S/C Suspension type with 100 Sq. mm AAAC conductor on 152 X 152 mm 13 mtr RSJ	Kms.	12.76	78.5	10.02
2	702 New	33 KV S/C Line Suspension type with 0.2 sq mm ACSR Dog conductor lines on 152 X 152 mm 13 mtr. RSJ	Kms.	16.99	17	2.89
3	702 New 1	33 KV D/C Line Suspension type with 0.2 sq mm ACSR Dog conductor lines on 152 X 152 mm 13 mtr. RSJ	Kms.	34.27	41	14.05
4	708	33kV, 3 core X 300 sqmm XLPE Underground Cable	Kms.	35.158	244	85.75
5	709	33kV, 3 core X 300 sqmm XLPE Underground Cable for Railway line crossing for 60 mtr span with isolator on DP structure with both side isolator.	Span	12.25	3	0.37
6	709 R	33kV, 3 core X 300 sqmm XLPE Underground Cable for Railway line crossing for 60 mtr span with isolator on DP structure with both side isolator.	Span	15.27	3	0.46
7	711	Douple pole structure (cut point) of- 33 kv line using13 m long RSJ pole	Nos.	1.306	87	1.14
8	711New	Four pole structure (cut point) of 33KV line using 13 M long RSJ pole	Nos.	3.23978	3	0.10
9	813	22kv, 3 core X 300 sqmm XLPE Underground Cable	Kms.	29.89	41.5	12.41
10	822	22 kV, Single Circuit, Suspension Type, 232 sqmm AAAC on 152X152, 13 mtr RSJ Pole	Kms.	18.10	5	0.90
11	601	33 KV feeder Bay	Nos.	12.89	3	0.39
12	601B	33 kV feeder bay with Gantry Structure & PT	Nos.	14.86	18	2.67
13	601 GIS	33 kV GIS feeder bay	Nos.	46.03	2	0.92
14	RMU 1	22KV RMU (SF-6) (1 Isolator + 2Breaker) including foundation cost	Nos.	10.47	2	0.21
15	New RMU 2	22KV SF6 Type Isolator, 2 Isolator including foundation cost	Nos.	7.56	4	0.30
16	New RMU 3	22KV SF6 Type Isolator, 4 Isolator including foundation cost	Nos.	12.12	1	0.12
17	New RMU 4	33KV RMU (SF-6) (3 Isolator + 2Breaker)	Nos.	17.32	19	3.29

Sr No.	Activity No	Description	Unit	Unit rate Rs.Lakhs	Qty.	Cost (Rs Crs.)
18	New RMU 5	33KV RMU (SF-6) (2 Isolator + 2 Breaker) including foundation work	Nos.	16.85	4	0.67
19	New 4	22KV I/D,1Incommer and 4 Single O/G feeder	Nos.	42.59	1	0.43
20	New 5	33KV Switchgear arrangement Indoor type(2I+1BC+2O)	Nos.	15.87	5	0.79
21	5718	33 kV Isolators 800 amp (with EB)	Nos.	0.89	2	0.02
22	5718 New	33KV Isolator 800 Amp (with EB)	Nos.	1.06	4	0.04
23	NHAI	Providing HDD Bore for laying U/G cable	Kms.	24	10.6	2.55
24	NHAI	Providing HDPE/GI pipe	Kms.	10.5	10.6	1.12
25		Excavation for road way	Kms.	2.16	0	0.00
26		GST 18%			0	0.04
27		RI Charges	Kms.			14.17
Total Cost in Rs Crs.						**155.812**

(CR. 54920/2018)

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2018-19/ 1258 **Date: 11 October, 2018**

To,

The Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof.AnantKanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: In-principle clearance for the DPR of MSEDCL for "System Improvement works for reduction of losses in High Loss feeders in Urban/Town areas"
(Cost of Rs. 316.20 Crore).

Sir,

This has reference to your submitted DPR for "System Improvement works for reduction of losses in High Loss feeders in Urban/Town areas", for In-principle approval of the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

1. I am directed to convey the 'in-principle' clearance of the scheme. The particulars of the scheme as approved are outlined in the Annexure "A" and Appendix "A" attached.
2. The IDC shall be considered after execution of the project at the time of tariff Petition.
3. Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved, etc., ex-post after implementation of the Scheme. MSEDCLwill be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.
4. MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.
5. Assets created after execution of the Scheme should be maintained separately in the Asset Register.
6. Immediately after completion/commissioning of the scheme, MSEDCLshould communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

CMD Secy
Dir (Proj)
ED (Dist).
Asset Flow for feeders immediately.
Mahn 24/10
CE CD (Dist)
25/10

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13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 **Fax :** 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in **Website :** www.merc.gov.in / www.mercindia.org.in

7. MSEDCL shall endeavour to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.
8. Major scope of work shall be executed through competitive bidding process only.
9. The taxes approved in the Scheme are as per previous regime and stand to be changed as applicable as per Goods and Service Tax (GST) Act.

Yours faithfully,

(PrafullaVarhade)
Director (EE), MERC

Encl: Annexure "A" and Appendix "A"

Annexure "A"

Feasibility Report for Capital Investment Scheme for MSEDCL

Sl. No.	Particulars	Details
1	Title (Name of Scheme)	"System Improvement works for reduction of losses in High loss feeders in Urban/Town Areas"
2	Estimated Cost	Total DPR cost estimated – Rs. 985 Crore For approval - 1st Phase DPR Cost –Rs. 316.20 Crore
3	Approved Cost	1st Phase DPR Cost – Rs. 316.20 Crore
4	Brief Scope of work	The scheme involves the system upgradation and improvement works as under: 1) Implementation of HVDS 2) Provision of aerial bunched cables etc 3) Replacement of faulty meters. 4) Shifting of LT line. 5) Reduction of HT to LT ration
5	Objective / Justification	1) To reduce the energy losses on feeders 2) To improve reliability of the supply and ultimately increase in company's revenue 3) To reduce the accident
6	ROI / Cost-benefit Analysis	The internal rate of return is 142 % and the annual saving of 864.04 Mus energy losse with cost benefit of 537.43 Crore.
7	Funding Arrangement	MSEDC will take loan from financial institution like REC/PFC for 90% of the project cost .
8	Impact on Tariff	For the 1st year and 2nd year the impact is positive, after that the sabing are observed as per the submitted tables.

Year	2018 -19	2019 -20	2020-21
Paisa/kwh	1.34	0.48	-.1.56

B. Observations / Comments on FR

1.	**Prudence of Investment / Technical Justification**	• To reduce the energy losses on selected 185 nos of feeder for the 1st phase out of total 259 nos feeder with more than 50% lossses • To improve the AT&C losss parameters • Increase the company's revenue • Reduce the HT to LT ratio • To provide the redundancy of supply. • To upgrade the system to cater the present as well as increased load during festive season. • Improvement in reliability. • Reduction in electrical accident
2.	**Reasonability of Cost Estimate**	It is observed that MSEDCL has used the cost data of the matrial purchased by MSEDCL's Central Purchasing Agency (CPA). Some of the items are on ad-hoc basis and interm cost data of 2017-18.
3.	**Comments on Cost Benefit Analysis**	The proposed loss reducation majors, if implemented appropriately, will reduce the losses and will result in reliability improvement as well.
4.	**Discrepancy / Shortcomings Observed**	The losses reducation is estimated, and it is found practically achievable if the scheme implemented appropriately.
5.	**Remarks / Specific Comments, if any**	1. The scheme is technically justified. 2. The scheme includes scope of removal of existing overheads line/ DTCs hence MSEDCL shall reduce the depreciated cost of the replaced assets from its Gross Fixed Asets 3. This approval is subjected to raising the fund from Govt. of India under IPDS as stated in BR and MSEDCL shall follow for subjective grants. 4. MSEDCL shall not claim ARR against grant. 5. MSEDCL shall confirm that any delay in the scheme implementation would be to there account, the commission shall not accept any increase in capital cost due to time and cost overrun, it is deemed that the accepted actual price after tenderisation shall not exceed the budgetary price given at this stage. Any veraiation in the cost beyond this limit shall not be considered for tariff. 6. The RI charges are not considered in the said project cost.

Appendix –A

Cost Abstract

The cost details are given in annexure C of the DPR submitted by MSEDCL.

Sr. No.	Zone	Circle	No. of Feeders with high Distribution Losses	Total Cost (Rs. Crore)
1	Akola	Akola	12	13.74
		Buldhana	6	5.85
		Washim	1	1.56
2	Amravati	Amravati	10	14.37
		Yeotmal	7	6.511
3	Nagpur	Wardha	6	11.81
		Nagpur (R)	8	8.75
4	Gondia	Bhandara	1	0.32
5	Jalgaon	Jalgaon	17	31.59
		Dhule	6	13.31
		Nandurbar	1	0.58
6	Aurangabad	Aurangabad (U)	21	57.06
		Aurangabad (R)	3	7.76
		Jalna	15	66.64
7	Latur	Latur	1	0.78
		Osmanabad	1	1.33
8	Nanded	Hingoli	5	5.64
9	Nashik	Nashik	8	4.97
		Malegaon	7	8.58
		Ahemadnagar	11	9.37
10	Bhandup	Thane	12	9.69
		Vashi	6	8.22
11	Pune	Ganeshkhind	8	6.58
		Rastapeth	10	17.51
	Baramati	Satara	1	2.82
		Solapur	1	0.88
		Total	**185**	**316.2**



महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2021-22/315 **Date: 22 July, 2021**

To,
The Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: MSEDCL's Capex scheme for system strengthening in MIDC/ Industrial areas- (Phase -I).

Ref:

1. MSEDCL Letter No. CE(Dist)/MIDC DPR/02471 Dated 23.01.2020.
2. MERC Email Dated 22.04.2020.
3. MERC Email for referring back DPR Dated 31.07.2020
4. MSEDCL Letter No. CE(Dist)/M-I/MIDC DPR/022027 Dated 14.12.2020.
5. MERC Email Dated 25.02.2021
6. MSEDCL Email Dated 25.02.2021
7. MERC Email Dated 28.05.2021
8. MSEDCL Email Dated 09.06.2021

Sir,

1 This has reference to your submitted DPR, for in principle approval of the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

2 I am directed to convey the 'in-principle' clearance of the scheme for the cost of **Rs. 267.37 Crores**. The particulars of the scheme as approved are outlined in the attached Annexure 'A' and Appendix 'A'.

3 Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

4 MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure

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13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Colaba, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 Fax : 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in Website : www.merc.gov.in / www.mercindia.org.in

incurred and item wise physical progress achieved during the implementation of the scheme.

5 Assets created after execution of the scheme should be maintained separately in the Asset Register.

6 Immediately after completion/commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

7 MSEDCL shall endeavor to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.

8 Major scope of work shall be executed through competitive bidding process only.

9 MSEDCL shall keep accounts of scrap generated separately and be shown as non-tariff income.

10 MSEDCL shall follow up with local authority to provide concessions in RI charges. Further, during capitalization, MSEDCL shall submit combined statement of actual incurrence of RI charges in 29 MIDC/Industrial estates.

11 The said approval is given subject to the detail scrutiny at the time of MTR/MYT. The Commission cautions MSEDCL that the project roll out be made to ensure timely completion of scheme. Increase in the cost due to delay may result in disallowance, subject to due diligence.

Yours faithfully,



(Dr. Rajendra G. Ambekar)
Executive Director

Encl: Annexure ‘A’ and Appendix ‘A’

Annexure A

Name of the scheme	MSEDCL's Capex scheme for system strengthening in MIDC/ Industrial areas- (Phase-I).
Estimated cost proposed by MSEDCL	Rs.276.12 Crores
In-principle approval accorded	Rs.267.37 Crores
Cost benefit of proposed Scheme	• Additional Sales of Energy (MUs)- **1033.36** • Reduction in breakdowns & Interruptions – **15.11%** • Absolute average annual financial savings- **Rs.184.22 Crores**
Scope of the works in brief	• New HV substation/ switching station- **11 Nos.** Conv. from outdoor to indoor • Additional Power Transformer- **4 Nos.** • 33kV/22 kV/ 11 kV Feeder Bay – **25 Nos.** • Installation of RMUs– **490 Nos** • Augmentation of Distribution Transformer- **169 Nos.** • Additional Distribution Transformer – **165 Nos.** • 33 kV/ 22 kV Isolators – 74 Nos. • AB Switches -**160 Nos.** • HT Lines – 33 kV/ 22 kV/ 11 kV-**461 km** • Feeder Pillars-**492 Nos.** • Replacement of Poles- **339 Nos.** Renovation & Modernization **–** **Substation Revamping, DTC Maintenance, LT AB cable, revamping tower line to Narrow Base Tower, 4 pole structures, etc**
Objectives/Justification	• Reduction of power supply Interruptions/ breakdowns to Industrial consumers; • To provide Rings Main Distribution network in MIDCs/Industrial areas to improve reliability; • Replacement of old corroded & deteriorated distribution assets; • To provide 24x7 reliable & quality power supply in MIDC / Industrial areas; • Reduction in overloading of existing distribution network; • To meet load of prospective new consumers; • To meet universal supply obligation.

Funding arrangement	- For funding the project MSEDCL intends to tie up with Banks/ Financial Institutes. MSEDCL while working out impact on tariff calculations considered loan: equity ratio as 90:10. - Further, MSEDCL is attempting to secure funding from GoM.
Time frame/phasing out of expenditure	Completion period-FY 2021-22

Observations / Comments on Feasibility Report

1.	Prudence of Investment /Technical Justification	System strengthening in MIDC/ Industrial areas will lead to reduction in interruptions and release of new connections.
2.	Reasonability of Cost Estimate	Cost estimates are based on Cost Data for FY 19-20
3.	Comments on Cost Benefit Analysis	• Additional Sales of Energy (MUs)- **1033.36** • Reduction in breakdowns & Interruptions – **15.11%** • Absolute annual financial savings- **Rs.184.22 Crores**
4.	Discrepancy/Shortcomings Observed	It appears that MSEDCL has considered RI charges on higher side. It is proposed that RI charges to the tune of 10% of cost of work may be allowed at this stage. MSEDCL may be directed to submit actual expenditure subsequent to roll out of the scheme, which will be considered, while pass through during Tariff proceedings. Hence, RI cost is restricted to 24.31 Crores. Cost of O&M items have not been considered for approval.
5.	Remarks/Specific Comments, if any	1 Major scope of work shall be executed through competitive bidding process only. 2 MSEDCL shall keep accounts of scrap generated separately and be shown as non-tariff income.

APPENDIX A- COST ESTIMATE

Sr. No.	Particulars	Unit cost (Rs Lakhs)	Unit	FY 2021-22	
				Qty	Amount (Rs Lakhs)
	CAPITAL WORKS				
1	**33/11 kV New S/S with 33 kV Outdoor & 11 kV Indoor (Supply, erection, testing & commissioning) with RSJ Structure**				
A	2 x 5 MVA S/S - 33/11 kV Outdoor	287.16	No.	1	287.16
B	2 x 5 MVA S/S - 33/11 kV	276.83	No.	1	276.83
2	**33/11 kV Additional Power Transformer (Supply, erection, testing & commissioning) with Gantry structure for 33 KV bus.**				
A	1 x 10 MVA Power Transformer	127.44	No.	1	127.44
B	1 x 10 MVA Power Transformer -33/11 kV	128.06	No.	3	384.19
3	**Switching Station (Outdoor) (Supply, erection, testing & commissioning)**				
A	22 kV switching station	252.83	No.	3	758.48
4	**Switching Station (Indoor) (Supply, erection, testing & commissioning)**				
A	conversion of 22 kV outdoor switching station to Indoor 22 kV Switching Station at Checknaka substation	400.08	No.	1	400.079
B	conversion of 22 kV outdoor switching station to Indoor 22 kV Switching Station at Asher IT substation	265.28	No.	1	265.279
C	22 kV switching station (Indoor)	257.92	No.	2	515.840
D	22kV Switching station(2I/c+8O/g) Indoor	172.75	No.	1	172.750
E	22kV Switching station(2I/c+6O/g) Indoor	141.96	No.	1	141.960
6	**Feeder Bay (Supply, erection, testing & commissioning)**				
A	22 kV feeder bay	12.26	No.	1	12.26
7	**Feeder Bay without Gantry Structure (Supply, erection, testing & commissioning)**				
A	33 kV feeder bay without Gantry Structure	11.68	No.	1	11.68
B	22 kV feeder bay without Gantry Structure	11.13	No.	6	66.76
8	**Feeder Bay with Gantry Structure & PT (Supply, erection, testing & commissioning)**				
A	33 kV feeder bay with Gantry Structure & PT	14.86	No.	1	14.86
B	22 kV feeder bay with Gantry Structure & PT	13.12	No.	16	209.88

APPENDIX A- COST ESTIMATE

Sr. No.	Particulars	Unit cost (Rs Lakhs)	Unit	FY 2021-22	
				Qty	Amount (Rs Lakhs)
9	**33 kV line (Supply, erection, testing & commissioning)**				
A	Pin type with 100 Sq. mm AAAC conductor on 152 X 152 mm 11 mtr RSJ poles	11.53	km	5.5	63.44
B	33kV, 3 core X 300 sqmm XLPE Underground Cable	35.16	km	32.2	1132.08
C	Double pole structure (cut point) of- 33 kV line using13 mtr long RSJ pole	1.31	No.	12	15.67
D	Double pole structure (cut point) of- 33 kV line using 11 mtr long RSJ pole 116 X100	0.95	No.	2	1.90
10	**22 kV Line (Supply, erection, testing & commissioning)**				
A	22kV, Pin type with 100 Sq. mm AAAC conductor on 152 X 152 mm 11 mtr RSJ poles	12.38	km	1.70	21.04
B	22kV, Pin type with 100 Sq. mm AAAC conductor 100 X 116 mm 10 mtr RSJ poles	13.39	km	15.40	206.27
C	22 KV Single circuit Pin type with 100sq.mm AAAC lines on 152x152 mm 11 mtr RSJ poles	11.81	km	6.36	75.14
D	Suspension type with 100 Sq.mm AAAC lines on 152 X 152 mm 11 mtr. RSJ	9.42	km	48.00	451.98
E	22 kV, 3 core X 95 sqmm XLPE Underground Cable	18.38	km	6.45	118.57
F	22 kV, 3 core X 300 sqmm XLPE Underground Cable	29.89	km	203.25	6075.57
G	3 core X 300 sqmm XLPE Underground Cable for Railway line crossing as per Sketch	10.05	No.	1	10.05
H	22 kV, Single Circuit, Suspension Type, 232 sqmm AAAC on 152 X 152, 13 mtr RSJ Pole	17.80	km	8.00	142.37
11	**11 kV line (Supply, erection, testing & commissioning)**				
A	11 kV, Pin type with 100 Sq. mm AAAC lines on 152 X 152 mm 11 mtr RSJ poles	11.31	km	12	135.68
B	11 kV, Pin type with 100 Sq. mm AAAC lines on 100 X 116 mm 10 mtr RSJ poles	9.03	km	7.5	67.71
C	11 kV, Suspension type with 100 Sq. mm AAAC lines on 100 X 116 mm 11 mtr RSJ poles	9.87	km	0.35	3.45
D	11 kV, 3 core X 300 sqmm XLPE Underground Cable	24.02	km	14.55	349.44

APPENDIX A- COST ESTIMATE

Sr. No.	Particulars	Unit cost (Rs Lakhs)	Unit	FY 2021-22	
				Qty	Amount (Rs Lakhs)
12	**22 kV /0.4 DTC (Supply, erection, testing & commissioning)**				
A	315 kVA Dist. Transformer centers with 9 mtr DP & plinth mounted	10.98	No.	18	197.63
B	315 kVA Dist. Transformer centers on 11 mtr RSJ poles with MCCB Dist box	10.62	No.	25	265.55
C	630 KVA, Plinth mounted Distribution Transformer Sub-station	15.02	No.	54	810.91
13	**22 kV /0.4 DTC Aug (Supply, erection, testing & commissioning)**				
A	22 kV, 100 KVA to 315 KVA	9.36	No.	7	65.53
B	22 kV, 200 KVA to 315 KVA	9.36	No.	1	9.36
C	22 kV, 200 KVA to 630 KVA	13.58	No.	5	67.88
D	22 kV, 315 KVA to 630 KVA	14.69	No.	59	866.85
E	22 kV, 500 KVA to 630 KVA	14.69	No.	12	176.31
F	22 kV, from 100, 200 & 315 KVA to 630 KVA on plinth	14.25	No.	22	313.55
14	**11/ 0.4 kV DTC (Supply, erection, testing & commissioning)**				
A	200 kVA Dist. Transformer centers on100x116mm, 9 mtr RSJ poles with MCCB Dist box	5.12	No.	7	35.83
B	200 kVA Dist. Transformer centers on 100x116mm, 11 mtr RSJ poles with MCCB Dist box	5.19	No.	10	51.88
C	100 KVA Dist. Transformer centers on 11 mtr RSJ poles with MCCB Dist box	3.37	No.	12	40.47
15	**11/ 0.4 kV DTC Augmentation (Supply, erection, testing & commissioning)**				
A	63 kVA to 100 kVA	2.35	No.	4	9.38
B	100 kVA to 200 kVA	4.09	No.	31	126.89
C	200 KVA to 315 KVA	9.21	No.	8	73.69
D	Augmentation of existing DTC to 11/0.4 kV, 200 KVA with Rural KitKat DB	4.45	No.	8	35.61
16	**LT line 3 Ph (Supply, erection, testing & commissioning)**				
A	3.5 X 185 sqmm XLPE Underground Cable	9.42	km	2.00	18.83
B	3.5 X 300 sqmm XLPE UG Cable	13.36	km	18.51	247.18
C	3.5 X 240 sqmm XLPE UG Cable	11.67	km	4.00	46.67

APPENDIX A- COST ESTIMATE

Sr. No.	Particulars	Unit cost (Rs Lakhs)	Unit	FY 2021-22	
				Qty	Amount (Rs Lakhs)
D	3 1/2C X 70 Sq mm Underground LT XLPE Armoured Cable	4.29	km	1.00	4.29
E	L.T. LINE 3 ph 4 W. on 125 X 70mm, 9m RSJ pole With AAAC 55 sqmm for phase & ACSR Weasel for neutral	4.42	km	5.35	23.64
17	**Other than above**				
A	Supply erection, testing & Commissioning of LT 6 way F.P.	0.59	No.	71	41.70
B	Supply erection, testing & Commissioning of LT 8 way F.P.	0.74	No.	11	8.19
C	Supply erection, testing & Commissioning of LT 4 way F.P.	0.48	No.	150	71.76
D	Supply erection, testing & Commissioning of LT Mini F.P.	0.23	No.	96	22.36
E	Commissioning of LT Feeder Piller	0.23	No.	24	5.52
F	Commissioning of LT Feeder Pillars	0.23	No.	14	3.26
18	**Ring Main Unit (RMU)**				
A	Replacement of Outdoor Ring Main Unit (SF - 6) (2 Isolators + 3 Breaker) 22 kV	13.94	No.	11	153.34
B	22 kV Rmu 4 Iso	9.28		17	157.76
C	22 kV RMU 2 Iso	5.17		4	20.68
D	Erection of New Ring Main Unit (SF-6) (0+4)	9.15	No.	2	18.30
E	Supply Errection Scada type RMU (1 Isolator + 2 Breaker) 22 kV	9.32	No.	6	55.93
F	Supply Errection Scada type RMU (2 Isolator + 2 Breaker) 22 kV	10.97	No.	4	43.88
G	Supply Errection Scada type RMU (2 Isolator + 3 Breaker) 22 kV	13.93	No.	8	111.44
H	Supply Errection Scada type RMU (2 Isolator + 3 Breaker) 11 kV	14.32	No.	9	128.88
I	Civil cost of RMU	0.16	No.	21	3.43
J	Supply, Erection, Testing & Commissioning of SCADA Compatible RMU (2 Isolators + 2 Breakers)	10.81	No.	43	464.83
K	Supply, Erection, Testing & Commissioning of SCADA Compatible RMU (2 Isolators + 3 Breakers)	13.76	No.	1	13.76
L	Replacement of Ring Main Unit	12.91	No.	2	25.82
M	Ring Main Unit (SF - 6) (2 Isolators) 22kV	7.56	No	8	60.46

APPENDIX A- COST ESTIMATE

Sr. No.	Particulars	Unit cost (Rs Lakhs)	Unit	FY 2021-22	
				Qty	Amount (Rs Lakhs)
N	Ring Main Unit (SF - 6) (3 Isolators) 22kV	10.47	No	23	240.70
O	Ring Main Unit (SF - 6) (4 Isolators) 22kV	12.12	No	14	169.68
P	Ring Main Unit (SF - 6) (5 Isolators) 22 kV	15.64	No	1	15.64
Q	Ring Main Unit (SF - 6) (7 Isolators) 22 kV	22.40	No	1	22.40
R	Ring Main Unit (SF - 6) (4 Isolators + 2 Breaker) 22 kV	17.49	No	1	17.49
S	Ring Main Unit (SF - 6) (2 Isolators + 1 Breaker) 22 kV	9.34	No	5	46.70
	RENOVATION & MODERNIZATION WORK				
19	**Upgradation of 33 kV Lines**				
A	Upgrading of 33 kV lines by AAA 200 sqmm cond	9.30	km	2	18.61
20	**Upgrading of 22 kV lines**				
A	From 80 sqmm to 100 sqmm conductor	4.88	km	33.29	162.57
B	From 0.1 to 0.2 sqmm conductor	9.47	km	8.43	79.79
C	Replacement of 22 kV old HT Cable size 3C X 300 sqmm	30.74	km	3	92.23
21	**Upgrading of 11 kV lines**				
A	11 KV Line with 100 Sqmm conductor	4.39	km	36	157.89
B	Replacement of Old HT cable by new XLPE cable size 11 kV, 3C X 300 sqmm	24.29	km	1	24.29
22	**LT Line Upgradation**				
A	LT reconductoring - Estimate for 3 phase 5 wire with 100 sqmm AAAC ANT reconductoring	4.61	km	1.3	5.99
B	Erection of Single core 400 sqmm LT cable	4.58	km	1	4.58
C	Replacement of LT U/G 3.5 x 300 sqmm cable	13.36	km	3.6	48.08
D	LT XLPE armoured cable 3 1/2 35 sqmm	2.02	km	0.4	0.81
E	to Underground LT XLPE Armoured Cable 3 1/2C X 185 Sq mm	9.27	km	0.6	5.56
23	**Conversion of OH to UG**				
A	33 kV OH line by 3 C , 300 Sqmm XLPE UG Cable	36.5	km	1.75	63.91
B	Conversion of OH to UG 22 kV line 300 sqmm	30.7	km	14.9	457.88
C	Conversion of OH to UG LT line 300 sqmm	13.4	km	15.78	210.69
24	**33/11 kV S/Stn. Revamping**				
A	11 KV VCB 800 A (Outdoor type)	1.89	No.	14	26.49
B	33 kV Isolators 800 amp (with EB)	0.89	No.	30	26.67
C	11 kV Isolators (without EB)	0.43	No.	23	9.86
D	22 kV Isolators (without EB)	0.57	No.	1	0.57
E	33 kV Isolators (without EB)	0.81	No.	7	5.69
F	22 kV Lightning Arrestor (Screw Type)	0.14	No.	1	0.14

APPENDIX A- COST ESTIMATE

Sr. No.	Particulars	Unit cost (Rs Lakhs)	Unit	FY 2021-22	
				Qty	Amount (Rs Lakhs)
G	Replacement of Control Pannel 22 KV	1.06	No.	1	1.06
H	Replacement of 22 kV VCB 1600 A Outdoor	2.89	No.	1	2.89
I	Replacement of 33-KV Breaker	3.29	No.	12	39.47
J	Re-Earthing Of Substation	3.88	No.	2	7.76
K	Battery with Battery Charger	1.16	No.	4	4.64
25	**DTC Maintenance**				
A	Replacement of existing Dist. Box for 25 / 63 KVA Dist. Transformer	0.23	No.	2	0.46
B	Replacement of existing Dist. Box for 100 KVA Dist. Transformer	0.25	No.	20	4.96
C	Replacement of DB's for 315 KVA Distribution transformer with 6 way feeder pillar with ACB	1.12	No.	2	2.24
D	Replacement of DB's for 63/100 KVA Distribution Transformer with MCCB DB	0.27	No.	4	1.06
E	DTC Re-earthing	1.22	No.	47	57.29
F	Replacement of CT operated DTC meter	0.21	No	47	9.70
G	1000/5 A CT for DTC	0.01	No.	90	0.71
H	500/5 A CT for DTC	0.01	No.	51	0.30
26	**Replacement of Poles**				
A	H.T. poles RSJ 152mm X 152mm 13mtr	0.50	No.	147	73.55
B	H.T. poles RSJ 152mm X152mm 11mtr	0.47	No.	77	36.11
C	Replacement of poles with required accessories 116 X 100 mm 9 M with stay	0.28	No.	0.21	0.06
D	LT. poles RSJ 125mm X 70mm 9mtr	0.15	No.	115	17.78
27	**Feeder Pillar**				
A	Replacement of Mini Pillars	0.23	No.	126	29.34
28	**Ring Main Unit**				
A	Replacement of 3 Panel Ring Main Unit with 4 Panel Ring Main Unit, 11 kV	7.21	No.	8	57.72
B	Replacement of RMU (SF6 Type) with 3 Isolator + 1 Breaker	7.87	No.	4	31.50
C	Replacement of RMU (SF6 Type) with 2 Isolator + 2 Breaker	9.37	No.	27	253.09
D	Replacement of Indoor Ring Main Unit (SF - 6) (3 Isolators + 2 Breaker) 22 kV	12.92	No.	42	542.50
29	**Other than Above**				
A	A.B. Switch 11 kV	0.23	No.	34	7.97
B	11 kV AB Switch 400 Amp with DP structure	0.79	No.	17	13.35

APPENDIX A- COST ESTIMATE

Sr. No.	Particulars	Unit cost (Rs Lakhs)	Unit	FY 2021-22	
				Qty	Amount (Rs Lakhs)
C	22 kV AB Switch with RSJ Pole 110 X 116, 9 mtr DP & allied fabrication	0.92	No.	109	99.85
D	DP structure & reinstalment of existing 22/0.4 or 11/0.4 kV Distribution transformer on RSJ pole 100 X 116, 11 mtr with Kit Kat DB	1.43	No.	32	45.80
E	DP structure & reinstalment of existing 22/0.4 or 11/0.4 kV Distribution transformer.	1.56	No.	47	73.31
F	DP Structure & reinstalment of existing 22/0.4 or 11/0.4 kV Distribution Transformer on RSJ Pole 100 X 116, 9 mtr with Kit Kat DB	1.18	No.	29	34.09
G	(New LT Aerial bunch cable of 120-SQMM on 125x70 8-M RSJ Pole)	8.93	km	6	53.60
H	Replacement of LT Conductor by Aerial bunch cable of size 50-sqmm)	4.56	km	19	86.69
I	LT AB cable	5.06	km	2.8	14.15
J	Providing & Fixing of Wedge connectors to 11kV Line	0.01	No.	40	0.39
K	Horizontal Directional drilling for Road/ Railway crossing with HDPE pipe	4071.00	meter	0	0.00
L	22 kV Double Circuit suspension type line on 13 mtr RSJ pole	18.39	km	4.5	82.76
M	Rerouting of 22 kV Tower Line with narrow base Towers	149.33	km	1	149.33
N	Providing of Wedge Connector for 0.1 ACSR Conductor for 1 No. Cut-Point	0.14	No.	26	3.61
O	Providing of Wedge Connector for 0.2 ACSR Conductor for 1 No. Cut-Point	0.18	No.	15	2.76
P	Replacement of 22 kV Isolator Without EB	0.57	No.	4	2.30
Q	Multiservice connection box and allied material	0.13	No	20	2.61
R	Replacement of 0.2 ACSR	9.47	km	1.5	14.20
S	Replacement of old deteriorated conductor	9.44	km	1.2	11.33
T	Providing New Plinth to Existing Transformer	0.53	No.	1	0.53
U	Replacement of Fencing	0.44	No.	0.42	0.18
V	Conversion of LT OH to UG 300 sq mm	13.35	km	1.175	15.69
W	Augmentation 200kVA to 630kVA	13.58	No.	12	162.90
X	Replacement of old 22/0.433kV Distribution Transformer 200 KVA to 11/0.433 kV 200 KVA	4.47	No.	6	26.82
Y	Replacement of old 22/0.433 kV Distribution Transformer 630 KVA to 11/0.433 kV 630 KVA	12.99	No.	9	116.91

APPENDIX A- COST ESTIMATE

Sr. No.	Particulars	Unit cost (Rs Lakhs)	Unit	FY 2021-22	
				Qty	Amount (Rs Lakhs)
Z	Replacement of old 22/0.433kV Distribution Transformer 315 KVA to 11/0.433 kV 315 KVA	9.27	No.	10	92.71
AA	Replacement of old 22/0.433kV Distribution Transformer 100 KVA to 11/0.433 kV 100 KVA	2.81	No.	10	28.09
AB	Estimate for Replacement of HT consumer Metering cubical & Conversion of 630 KVA Transformer from 22 kV to 11 kV	16.57	No.	5	82.85
AC	Estimate for Replacement of HT consumer Metering cubical & Conversion of 315 KVA Transformer from 22 kV to 11 kV	12.86	No.	3	38.58
AD	Estimate for Conversion of 315 KVA Transformer from 22 kV to 11 kV	11.29	No.	1	11.29
AE	Estimate for Replacement of HT consumer Metering cubical & Conversion of 200 KVA Transformer from 22 kV to 11 kV	8.06	No.	1	8.06
AF	Estimate for making additional power supply arrangement for existing 11 kV Indoor panel of Supriya feeder in case of breakdown of 5 MVA power transformer by providing 11 kV,3C,300 sq mm XLPE cable and 2 nos. Isolators in switching yard through power transformer	4.73	LS	1	4.73
AG	Estimate for 3 pole structure	23.84	LS	1	23.84
AH	Estimate for 10 nos. 11 kV 200 kVA DTC pole mounted on 9 mtr RSJ with MCCB and AB switch	54.13	LS	1	54.13
AI	20 nos. 11 kV AB switch on existing poles	4.38	LS	1	4.38
AJ	Replacement of existing 11 kV 100 kVA DTC structure 11 mtr RSJ	7.03	LS	1	7.03
AK	Estimate for replacement of 11 kV line with conductor and fabrication	105.38	LS	1	105.38
AL	Estimate for replacement of 33 kV line with conductor and fabrication	17.50	LS	1	17.50
AM	Estimate of new metering kiosk CT 22 kV, 10/5A, 0.5 s, 10 VA/ PTR 22Kv/110v, 0.5 class, 50 VA kiosk for converting Outdoor CT PT unit to Kiosk installation of HT consumer located at Wagle Estate Sub div MIDC area, Thane.	289.78	LS	1	289.78
AN	Estimate for Interlinking 22 kV stn and feeders for Ring System with RMU	445.25	LS	1	445.25
AO	Estimate for Interlinking 11 kV DTC and feeders for Ring System with RMU	137.72	LS	1	137.72

APPENDIX A- COST ESTIMATE

Sr. No.	Particulars	Unit cost (Rs Lakhs)	Unit	FY 2021-22	
				Qty	Amount (Rs Lakhs)
AP	Estimate for 22/0.44 DTC Additional 1 X 630 KVA, Indoor type DTC with RMU without room	65.40	LS	1	65.40
AQ	Estimate for 22/0.44 DTC Additional 1 X 315 KVA, Indoor type DTC with RMU without room	20.14	LS	1	20.14
AR	Estimate for 11/0.44 DTC Additional 1 X 630 KVA, Indoor type DTC with RMU without room & single 11/0.44 DTC additional 630 KVA	110.86	LS	1	110.86
AS	Estimate for 11/0.44 DTC Additional 2 X 630 KVA, Indoor type DTC with RMU without room	33.36	LS	1	33.36
AT	Estimate for Augmentation of Indoor Distribution Transformer Sub-station 11/0.4 kV, 630 KVA to 11/0.4 kV, 995 KVA	16.41	LS	1	16.41
AU	Estimate for Additional LT underground Cable with Feeder pillars	999.26	LS	1	999.26
AV	Four Pole structure	2.65	No.	1	2.65
AW	Activity of Supply, Erection, Testing and Commissioning of Polycarbonate 33KV Pin type Insulator (Replacement of Pin Insulator with Earthing)	0.64	Km	3	1.92
AX	Replacement of Switching station Equipment for Switching Station (Isolators, CT'S, LA's etc)	0.03	No	1	0.03
AY	22 kV new Isolator 800AMP with RSJ pole 152 X 152, 11 mtr DP with allied fabrications.	1.69	No.	13	21.97
AZ	22 kV Touch Proof Joints	0.30	No.	173	51.90
BA	11 kV & 22 kV Touch proof joints for RMU	0.28	No.	55	15.62
BB	Replacement of 22 kV old outdoor HT jointing kit for 3C X 300 sqmm	0.25	No.	205	51.82
BC	Replacement of old HT jointing kit Intdoor Straight Through joint 22 kV, 3C X 300 sqmm	0.44	No.	23	10.17
BD	(HT/LT Re-Earthing OF Pole)	0.02	No.	160	2.55
BE	HT/LT Guarding Line	0.27	No.	15	4.03
BF	Crimping of HT Line	0.19	No.	45	8.55
BG	Estimate for Replacement of Pin & Disc Type Insulators (15 spans)	1.19	LS	2	2.39
BH	Crimping of Jumpers	0.03	No.	385	9.63
BI	Pole muffing above Ground section	0.02	cmt	35	0.80

APPENDIX A- COST ESTIMATE

Sr. No.	Particulars	Unit cost (Rs Lakhs)	Unit	FY 2021-22	
				Qty	Amount (Rs Lakhs)
BJ	Replacement of HT pole earthing Set	0.05	no	24	1.26
	RI Charges	23.5	km		2431.00
	Grand Total for DPR				**26737.30**

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2021-22/086 **Date: 02 March, 2022**

To,
The Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: MSEDCL's Capex scheme for Infrastructure Plan for Release of 1 Ph and 3 Ph (HT/ LT) New Service Connections for FY 2019-20 to FY 2024-25.

Ref:

1. MSEDCL Email Dated 22.07.2020.
2. MERC Email Dated16.09.2020.
3. MERC Email for referring back DPR Dated16.10.2020
4. MSEDCL Letter No. CE(Dist)/M-III/NSC/021928 Dated 11.12.2020.
5. MERC Email Dated 31.01.2021
6. MSEDCL Email Dated 04.06.2021
7. MSEDCL Email Dated 29.01.2022
8. MSEDCL Email Dated 11.02.2022
9. MSEDCL Email Dated 15.02.2022

Sir,

1 This has reference to your submitted DPR, for in principle approval of the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February 2005.

2 I am directed to convey the 'in-principle' clearance of the scheme for the cost of **Rs. 2738.79 Crores**. The particulars of the scheme as approved are outlined in the attached Annexure 'A' and Appendix 'A'.

3 Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

4 MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the scheme.

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, मुंबई - ४०० ००५.
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 **Fax :** 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in **Website :** www.merc.gov.in / www.mercindia.org.in

5 Assets created after execution of the scheme should be maintained separately in the Asset Register.

6 In Centages calculations, MSEDCL is factoring in Contractor supervision charges on material cost @5%. Contractor supervision charges on material cost @5% is not prudent when all cost related to erecting, contingency, profit etc are already considered and hence not included.

Further, Price escalation of 5% is unwarranted during in-principle approval. Any cost overrun on account of price escalation in material cost will be dealt in tariff Petition while evaluating the schemes for capitalisation.

IDC component based on actuals may be factored into capitalization based on actual loan portfolio, at the time of tariff proceedings.Accordingly, the Commission approves following centages:

For works outside substation	61.99%
For works inside the substation	49.47%
For Service Line Connections	36.29%

MSEDCL is directed to revise the Centages calculations as mentioned above.

7 Immediately after completion/commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

8 MSEDCL shall endeavor to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.

9 Major scope of work shall be executed through competitive bidding process only.

10 The said approval is given subject to the detail scrutiny at the time of MTR/MYT. The Commission cautions MSEDCL that the project roll out be made to ensure timely completion of scheme. Increase in the cost due to delay may result in disallowance, subject to due diligence.

Yours faithfully,

(Dr. Rajendra G. Ambekar)
Executive Director

Encl: Annexure 'A' and Appendix 'A'

Annexure A

Name of the scheme	MSEDCL's Capex scheme for Infrastructure Plan for Release of 1 Ph and 3 Ph (HT/ LT) New Service Connections for FY 2019-20 to FY 2024-25.
Estimated cost proposed by MSEDCL	Rs. 2964.09 Crores
In-principle approval accorded	Rs. 2738.79Crores
Cost benefit of proposed Scheme	Incremental Revenue through sale of power is in the range of Rs. 787.07 Crores to Rs. 951.88 Crores per annum.
Scope of the works in brief	• New HV substation- **43 Nos.** • Additional/Augmentation of Power Transformer- **19 Nos.** • HT Lines – 33 kV/ 22 kV/ 11 kV-**1783.15 km** • LT Lines-**786 km** • Distribution Transformers-**7415 Nos.** • New Service Connections-**29,26,847 Nos.**
Objectives/Justification	• To comply the provisions of the Electricity Act-2003 by developing and maintaining an efficient, co-ordinated and economical distribution system in the area of Licensee. • To release the new power supply connections to owners or occupiers of any premises on a complete application following the Standards of Performance. • To increase billing revenue. • To reduce the HT - LT line ratio for improving reliability of Power Supply.
Funding arrangement	MSEDCL proposed to arrange funds through the Finance Institute like Rural Electrification Corporation Ltd./ Power Finance Corporation/ any other Finance Institution in the debt-equity ratio of 80:20% (±10%). The Commission considered normative debt-equity ratio of 70:30. In addition to this for providing the services from distributing mains to metering point the funds are arranged through 'Service Connection Charges' collected from the applicants.
Time frame/Revised phasing out of expenditure	FY 2019-20 to FY 2021-22- Rs.598.82 Crores FY 2022-23-Rs.788.83 Crores FY 2023-24- Rs. 997.85 Crores FY 2024-25-Rs. 578.58Crores



Observations / Comments on Feasibility Report

<table>
<tr><td>1.</td><td>Prudence of Investment /Technical Justification</td><td>MSEDCL's Capex scheme for Infrastructure Plan for Release of 1 Ph and 3 Ph (HT/ LT) New Service Connections for FY 2019-20 to FY 2024-25.</td></tr>
<tr><td>2.</td><td>Reasonability of Cost Estimate</td><td>Cost estimates are based on Cost Data forFY 19-20</td></tr>
<tr><td>3.</td><td>Comments on Cost Benefit Analysis</td><td>Incremental Revenue through sale of power is in the range of Rs. 787.07 Crores toRs. 951.88 Croresper annum.</td></tr>
<tr><td>4.</td><td>Discrepancy/Shortcomings Observed</td><td>Contractor supervision charges on material cost @5% is not rational in view of view of H.O supervision charges and consideration of erection cost and hence rejected.
Price escalation of 5% is unwarranted during in-principle approval. Any cost overrun on account of price escalation in material cost will be dealt in tariff Petition while evaluating the schemes for capitalisation.
IDC component based on actuals may be factored into capitalization based on actual loan portfolio, at the time of tariff proceedings. Accordingly, the Commission approves following centages:
<table>
<tr><td>For works outside substation</td><td>61.99%</td></tr>
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</table></td></tr>
<tr><td>5.</td><td>Remarks/Specific Comments, if any</td><td>Major scope of work shall be executed through competitive bidding process only.</td></tr>
</table>

MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

Appendix A- Cost Estimate

Sr.No.	Description of Activity	Unit	Total Quantity	Part 1: Cost of Material		Part 2: Cost of Transportation, Erection, Installation, Commissioning & Guarantee including GST		Part 3: Civil Cost		Total for Supply & Installation
				Unit Rate (Rs. Lakhs)	Total Cost (Rs. Lakhs)	Unit Rate (Rs. Lakhs)	Total Cost (Rs. Lakhs)	Unit Rate (Rs. Lakhs)	Total Cost (Rs. Lakhs)	Total Cost (Rs. Lakhs)
	CAPITAL WORKS									
1	Supply, Erection, Testing and Commissioning of 33/11 KV, 1X5 MVA Sub-Station (Outdoor Type).(RSJ)	Nos.	13	61.72	802.36	30.53	396.93	92.19	1,198.47	2,397.76
2	Supply, Erection, Testing and Commissioning of 33/11 KV, 1X10 MVA Sub-Station (Outdoor Type).(RSJ)	Nos.	13	80.20	1,042.60	39.67	515.77	92.19	1,198.47	2,756.84
3	Supply, Erection, Testing and Commissioning of 22/11 KV, 1X5 MVA Sub-Station (Outdoor Type).(RSJ)	Nos.	10	64.40	644.00	31.86	318.59	92.19	921.90	1,884.49
4	Supply, Erection, Testing and Commissioning of 22/11 KV, 1X10 MVA Sub-Station (Outdoor Type).(RSJ)	Nos.	7	80.46	563.22	39.80	278.62	92.19	645.33	1,487.17
5	33/11 KV Power Transformer Augmentation 5 MVA to 10 MVA	Nos.	5	63.63	318.15	31.48	157.39	-	-	475.54
6	33/11 KV Power Transformer Augmentation 3.15 MVA to 10 MVA	Nos.	1	68.05	68.05	33.66	33.66	7.85	7.85	109.56
7	22/11 KV Power Transformer Augmentation 5 MVA to 10 MVA	Nos.	1	66.20	66.20	32.75	32.75	-	-	98.95
8	33/11 KV Additional 1 x 5 MVA Power Transformer	Nos.	5	56.17	280.85	27.79	138.94	7.85	39.25	459.04
9	33/11 KV Additional 1 x 10 MVA Power Transformer	Nos.	4	74.64	298.56	36.92	147.70	7.85	31.40	477.66
10	22/11 KV Additional 1 x 10 MVA Power Transformer	Nos.	3	79.35	238.05	39.25	117.76	7.85	23.55	379.36
11	22 kV switching station	Nos.	7	101.78	712.46	50.35	352.45	8.89	62.23	1,127.14
12	Supply, Erection, Testing and Commissioning of 33 KV S/C Line Pin type with100 mm2 ACSR lines on152x152, 13 mtr. RSJ Poles	Kms.	173.00	7.33	1,268.09	4.54	786.09	-	-	2,054.18
13	33kV, 3 core X 300 sqmm XLPE Underground Cable	Kms.	88.25	20.20	1,782.65	12.52	1,105.06	-	-	2,887.71
14	Supply, Erection, Testing and Commissioning of 22 KV S/C Line Pin type with100 mm2 ACSR lines on100x116, 10 mtr. RSJ Poles	Kms.	369.22	5.41	1,997.48	3.35	1,238.24	-	-	3,235.72
15	22kv, 3 core X 300 sqmm XLPE Underground Cable	Kms.	136.82	17.18	2,350.57	10.65	1,457.12	-	-	3,807.68
16	11kV, Pin type with 100 Sq. mm AAAC lines on 100 X 116 mm 10 mtr RSJ poles	Kms.	870.41	5.19	4,517.43	3.22	2,800.35			7,317.78



Sr.No.	Description of Activity	Unit	Total Quantity	Part 1: Cost of Material		Part 2: Cost of Transportation, Erection, Installation, Commissioning & Guarantee including GST		Part 3: Civil Cost		Total for Supply & Installation
				Unit Rate (Rs. Lakhs)	Total Cost (Rs. Lakhs)	Unit Rate (Rs. Lakhs)	Total Cost (Rs. Lakhs)	Unit Rate (Rs. Lakhs)	Total Cost (Rs. Lakhs)	Total Cost (Rs. Lakhs)
17	11kV, 3 core X 185 sqmm XLPE Underground Cable	Kms.	145.45	10.49	1,525.77	6.50	945.83	-	-	2,471.60
18	3 phase 4 wire on PSC pole 8 mtr with Ant conductor for phase & Gnat for neutral with 200 Kg pole	Kms.	676.26	1.89	1,278.13	1.17	792.31	-	-	2,070.45
19	LT 3.5 X 120 sqmm XLPE Underground Cable	Kms.	109.74	3.77	413.72	2.34	256.46	-	-	670.18
20	11/0.4 KV 25 kVA Dist. Transformer centers on 9mtr RSJ poles with MCCB Dist box	Nos.	309	1.23	380.07	0.76	235.61	-	-	615.68
21	11/0.4 KV 100 kVA Dist. Transformer centers on 9mtr RSJ poles with MCCB Dist box	Nos.	4011	1.90	7,620.90	1.18	4,724.20	-	-	12,345.10
22	11/0.4 KV 200 kVA Dist. Transformer centers on 100x116mm, 11 mtr RSJ poles with MCCB Dist box	Nos.	485	2.98	1,445.30	1.85	895.94	-	-	2,341.24
23	11/0.4 KV 315 kVA Dist. Transformer centers on 11 mtr RSJ poles with MCCB Dist box	Nos.	204	5.74	1,170.96	3.56	725.88	-	-	1,896.84
24	11/0.4 KV 630 kVA Dist. Transformer centers with 9 mtr RSJ poles DP & plinth mounted	Nos.	345	7.91	2,728.95	4.90	1,691.68	-	-	4,420.63
25	22/0.4 KV 25 kVA Dist. Transformer centers on 9mtr RSJ poles with MCCB Dist box	Nos.	47	1.61	75.67	1.00	46.91	-	-	122.58
26	22/0.4 KV 100 kVA Dist. Transformer centers on 9mtr RSJ poles with MCCB Dist box	Nos.	1009	2.89	2,916.01	1.79	1,807.63	-	-	4,723.64
27	22/0.4 KV 200 kVA Dist. Transformer centers on 100x116mm, 11 mtr RSJ poles with MCCB Dist box	Nos.	330	4.10	1,353.00	2.54	838.72	-	-	2,191.72
28	22/0.4 KV 315 kVA Dist. Transformer centers on 11 mtr RSJ poles with MCCB Dist box	Nos.	278	6.10	1,695.80	3.78	1,051.23	-	-	2,747.03
29	22/0.4 KV 630 kVA Dist. Transformer centers with 9 mtr RSJ poles DP & plinth mounted	Nos.	397	8.63	3,426.11	5.35	2,123.85	-	-	5,549.96
30	Single Phase Service Connection (O/H)	Nos.	1719874	0.03	43,906.66	0.01	15,933.73	-	-	59,840.39
31	Single Phase Service Connection (U/G)	Nos.	462317	0.07	33,165.19	0.03	12,035.65	-	-	45,200.84
32	Three Phase Service Connection (O/H)	Nos.	504374	0.08	38,552.23	0.03	13,990.60	-	-	52,542.83
33	Three Phase Service Connection (U/G)	Nos.	240283	0.13	31,676.39	0.05	11,495.36	-	-	43,171.75
	Capital Works(I)				**190,281.58**		**79,469.01**		**4,128.45**	**273,879.04**
	Total DPR Cost									**273,879.04**



महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/Capex/MSEDCL/2023-24/0179 **Date: 11 March 2024**

To,

The Chairman & Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
Prakashgad A.K. Marg, Bandra (East),
Mumbai- 400 051.

Subject: MSEDCL's Capex scheme for Revamped Distribution Sector Scheme Reforms-Based and Results-Linked. (**Total Project Outlay- Rs.27,696.78 Crores**)

Ref:
1. MSEDCL letter Ref No. CE(Dist)/M-III/RDSS/29422 data 16.11.2022.
2. MERC Email- Referring back DPR dated 15.01.2023.
3. MSEDCL Email-Revised DPR submitted dated 31.01.2023
4. MERC Email- Data gaps dated 09.06.2023.
5. MSEDCL letter Ref CE(Dist)/M-III/RDSS/26762 dated 05 Sept 2023.
6. Meeting dated 08.01.2024

Sir,

This has reference to Capex Scheme submitted by MSEDCL vide letter under reference above and correspondence thereof.

1. The Scheme for 'Revamped Distribution Sector Scheme (RDSS) (Reforms-Based and Results-Linked) amounting to **Rs. 27,696.78 Crore** has been evaluated with reference to the MERC Capex Approval Regulations 2022. I am directed to convey in-principle clearance of the Scheme. The particulars of the Scheme as approved in -principle are outlined in **Annexure 'A'** and the breakup of the project cost is given in **Appendix 'A'**.

2. Please note that this in-principle clearance should not be construed as final approval for the ARR purpose. The Scheme will be open for scrutiny during the tariff determination process / ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc. ex post after implementation of the Scheme. MSEDCL shall submit the status of implementation of the Scheme with cost incurred till date, likely completion date etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

3. MSEDCL should submit six monthly progress reports as per the provisions of the Capex Approval Regulations 2022 giving status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

4. Assets created after execution of the Scheme should be maintained separately in the Asset Register.

5. MSEDCL is directed to endeavor to complete project within stipulated time frame. The increase in cost because of the delay in the execution of project will not be entertained in future. Also, the Commission will not grant the revised approval to the scheme. Further, the Commission will not allow capital cost, O&M cost and IDC against unutilized assets beyond the proposed date of COD till the asset is put to use.

6. Immediately after completion / commissioning of the Scheme, MSEDCL should communicate to the Commission the date of completion of the Scheme, item-wise actual cost incurred as per Appendix 'A', escalation in cost, if any, with reasons, the scope, and objectives of the Scheme and to what extent they have been achieved, etc. so as to facilitate a comparison between the in-principle clearance and the actual incurred cost. As per RDSS guidelines, MSEDCL is required to submit project competition certificate to PFC. The copy of said certificate shall be forwarded to the Office of the Commission.

7. If the asset constructed by MSEDCL remains unutilized beyond proposed COD, the Commission will approve the Aggregate Revenue Requirement (ARR) against such asset at depreciated cost from the date the assets actually put to use.

8. The Commission will not allow part capitalization against scheme unless such assets are put to use and benefiting the system.

9. If MSEDCL fails to initiate the work, including tendering process if any, within a period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled.

10. The major scope of the work shall be executed through competitive bidding process only. MSEDCL shall follow the guidelines provide in the Capex Approval Regulations 2022.

11. To ensure that MSEDCL has taken the measures to optimize the project cost and followed the competitive bidding the Commission may carry out third party asset verification including referring to the National Financial Reporting Authority (NFRA) after completion of the work as provided in Regulation 9.2 (16) of the Capex Approval Regulations 2022.

12. MSEDCL shall co-ordinate with GoM for timely release of subsidy component. Further, efforts needs to be made for recovery of dues from Government/Semi-Government/Local authority Departments/agencies/institutes.

13. MSEDCL shall follow up with the PFC for timely releasing of grant. If any grant component is disallowed by PFC on account of MSEDCL's failure to adhere to RDSS Guidelines, then such amount will not be considered for ARR purpose.

Yours faithfully,

(Dr. Rajendra G. Ambekar)
Secretary

Encl: Annexure 'A', Appendix 'A'

Annexure – 'A'

Summary Appraisal of MSEDCL Scheme for

Revamped Distribution Sector Scheme Reforms-Based and Results-Linked.

(Particulars furnished in the Feasibility Report by MSEDCL

1.	**Name of the Scheme**	MSEDCL's Capex scheme for rollout of Revamped Distribution Sector Scheme (Reforms-Based and Results-Linked.)
2.	**Estimated Cost**	Rs. 27,696.78 Crores
	Approved Cost	Rs. 27,696.78 Crores
3.	**ROI/ Cost Benefit**	Due to roll-out of loss reduction works component net impact on retail tariff will be in the range of Rs. 0.003/kWh to Rs.0.062/kWh over lifecycle of project. Large scale roll-out of smart meters will lead to annual savings of ~ Rs. 246.87 Crores in meter readings activity of Non-Ag Consumers. Further ~ Rs. 27.79 Crores annually will be saved on bill printing, distribution and stationery.
4.	**Brief Scope of Work**	**A. Smart Metering:** • Consumer Metering: 2,24,88,866 Consumers (Non-Ag) • DTC Metering: 4,07,507 DTCs • Feeder &Boundary Metering: 27,826 Feeders **B. Loss Reduction:** • Separation of Ag and Non-Ag Feeders: 4,712 Feeders • Arial Bunch (AB) Cable to reduce the theft: 30,332 Km • Upgradation of conductor (33,22,11kV & LT): 19,884 Km • Multi Meter Boxes: 3,98,080 Nos. • Feeder bifurcation (33,22 & 11kV feeders): 9,843 Km • Provision of HVDS (DT and HT line): 5,170 DTCs • Installation of Capacitor to Substations: 2,051 Nos. • IT/OT: Rs. 168 Crores
5.	**Objective /Justification**	i. Improve the quality, reliability and affordability of power supply to consumers through a financially sustainable and operationally efficient Distribution system.



		ii. Reduce the AT&C losses (operational losses due to inefficient power system) up to 13% by FY 2024-25. iii. To reduce the Cost-Revenue Gap (Gap in ACS- ARR) to zero by FY 2024-25. iv. Developing Institutional capabilities for modern DISCOMs.

6.	**Funding Arrangement**	**Source of funds**	**Amount**
		Debt	Rs. 17,103.07 Crores
		Equity	-
		Grants	Rs 10593.71 Crores
		Consumer Contribution	-
7.	**Time Frame/ Phasing of Expenditure**	**FY**	**Phasing of Expenditure in Rs Crores**
		FY 2022-23	Rs.1384.84
		FY 2023-24	Rs.13848.39
		FY 2024-25	Rs.12463.55
			Rs.27696.78

A) <u>Observations / Comments on Feasible Report</u>

1.	**Prudence of Investment / Technical Justification**	The Scheme aims to carry out the works enabling improvement in the quality and reliability of power supply to consumers, by providing conditional financial assistance to DISCOMs to make the sector financially sustainable and operationally efficient.
2.	**Reasonability of Cost Estimate**	The rates are considered by referring to interim Cost date. Proposed capital outlay has been approved by PFC (Nodal Agency).
3.	**Comments on Cost Benefit Analysis**	Demonstrated benefits are justified.
4.	**Discrepancy / Shortcomings Observed**	Queries have been complied & submitted by the MSEDCL
5.	**Remarks / Specific Comments if any**	1. MSEDCL shall endeavor to complete the project in adherence to committed timeline in order to avoid cost and time overrun. 2. MSEDCL shall co-ordinate with GoM for timely release of subsidy component. Further, efforts needs to be made for recovery of dues from Government/Semi-Government/Local authority Departments/agencies/institutes.



Annexure A

Smart Metering works for MSEDCL

Sr. No.	Major Component	Item Particulars	Expected Life cycle unit cost (Rs. per meter)	Quantity (Phase I)	Quantity (Phase II)	Total Quantity	Estimated cost in Rs. Crores
				No.	No	Nos.	
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) +(6)	(8) = (4)x(7)
1	**Consumer Metering**						
1.1	1 Phase Whole Current Smart Consumer Meter		6,000	1,06,96,761	1,06,98,582	2,13,95,343	**12837.21**
1.2	3 Phase Whole Current Smart Consumer Meter		6,000	4,05,430	5,49,753	9,55,183	**573.11**
1.3	3 Phase LT-CT Operated Smart Consumer Meter		6,000	1,16,369	0	1,16,369	**69.82**
1.4	3 Phase CT-PT Operated HT Smart Consumer Meter		6,000	21,971	0	21,971	**13.18**
	Sub-Total			**1,12,40,531**	**1,12,48,335**	**2,24,88,866**	**13,493.32**
2	**DT Metering**	3 Ph LT-CT Operated DT Meter	23,000	4,07,507	0	4,07,507	**937.27**
3	**Feeder Metering**	3 Ph CT-PT Operated feeder Meter	42,000	26,853	0	26,853	**112.78**
4	**Boundary Metering**	3- phase CT/PT operated Boundary meter	42,000	973	0	973	**4.09**
	Total			**1,16,75,864**	**1,12,48,335**	**2,29,24,199**	**14,547.45**
	Total GBS excluding incentive for Phase – I						**2182.12**
	Incentive for Phase – I						**505.82**
	Total GBS including Incentive of Phase – I						**2687.94**



Details of Infrastructure works under Loss Reduction

Sr No.	Major Component	Item Particulars	UoM	Unit cost (Rs. lakh)	Quantity	Estimated cost in Rs. Crores
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) x (6)
1	**Feeder Separation**					
(a)	11 KV Feeder Bay with Gantrystructure		Nos	11.43	4,233	483.77
(b)	11 KV Single circuit Pin type with 55sq.mm AAAC lines on 100x116 mm9 mtr RSJ poles		Kms.	8.17	53,936	4,408.29
(d)	Special DTs		Nos	3.85	4,712	81.31
(e)	11/0.4 kV ,100 kVA Dist. Transformercenters on RSJ , 100 X 116 mm, 11 mtr with Kitkat Dist box.		Nos	3.71	29,252	1,086.29
(f)	HDD for various crossings		Kms.	40.71	103	42.11
(g)	LT Line- 3 ph 4 W. with AAAC 55 sqmm for phase & ACSR Weasel forneutral with PSC Pole 8 Mtr (140 KG)		Kms.	3.88	13,764	533.76
(h)	AB switches		Nos	0.89	4,712	41.81
(i)	Single pole cut points		Nos	0.67	12,744	85.38
(j)	Double pole cut points		Nos	1.02	14,455	147.74
		Sub Total (1)				**7010.46**
2	**HVDS**					
(a)	11 kV Single circuit Pin type with 55sq.mm AAAC lines on 9 mtr PSCpoles		Kms.	6.02	2758.03	166.07
(b)	11 KV ,25 KVA Dist. Transformer centers on 100x116mm, 9 mtrs RSJpoles with MCCB Dist. Box.		Nos	2.47	5170.00	127.57
(c)	Armoured Service Wire (2.5sqmm.) for 1 ph connection		Kms.	1.47	1360.31	20.05
(d)	Single pole cut points		Nos	0.67	652	4.37
(e)	Double pole cut points		Nos	1.02	739	7.55
		Sub Total (2)				**325.61**
3	**Replacement of LT line by AB Cable**					
(a)	AB Cable(70Sq.mm) with alliedmaterial		Kms.	4.94	30331.70	1498.39
(b)	Dismantling & transportation charges		Kms.	0.27	30331.70	83.17
		Sub Total (3)				**1581.56**
4	**Capacitor Bank**					
(a)	Capacitor Bank(APFC) - 1.2 M VAR		Nos	8.71	1617.00	140.76
(b)	Capacitor Bank(APFC) - 2.4MVAR		Nos	11.05	434.00	47.95
		Sub Total (4)				**188.71**
5	**Multimeter Boxes**					
(a)	Multi-meter SMC box (12 meters per box)		Nos	0.0768	398080	305.73
(b)	LT Cable Armoured Aluminum Cable3.5C x 35 sq. mm		LS			
(c)	Installation Charges		Nos			
(c)	Earthing, Fabrication etc.		Nos	0.01723	398080	68.57
(d)	Service Cable (W.P. Wire 2.5 mm2 T/C1100 V Grade) – 1 coil per box		LS	0.01107	398080	44.05

Sr No.	Major Component	Item Particulars	UoM	Unit cost (Rs. lakh)	Quantity	Estimated cost in Rs. Crores
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) x (6)
	Sub Total (5)					**418.35**
6	**Upgradation of Line**					
(a)	11KV (AAAC 55sqmm) on RSJ Poles		Kms.	3.42	1167.30	39.97
(b)	11KV (AAAC 100sqmm) on RSJ Poles		Kms.	5.15	7522.82	387.30
(c)	33 or 22 KV(AAAC 232sqmm) on RSJPoles		Kms.	10.98	6614.69	726.43
(d)	LT line (Ant conductor) on RSJ Poles		Kms.	2.14	4578.82	97.99
	Sub Total (6)					**1251.69**
7	**Feeder Bifurcation**					
(a)	33 KV S/C Line with 100 mm2 AAAC (Suspension type) & RSJ 152 X 152mm 12 mtr. Long.		Kms.	14.16	2294.17	324.76
(b)	11 KV Single circuit Pin type with 100sq.mm AAAC lines on 100x116 mm10 mtr RSJ poles		Kms.	10.50	6821.57	716.44
(c)	22 KV Single circuit Suspension type with 100sq.mm AAAC lines on 152x152mm 11 mtr RSJ poles		Kms.	14.30	727.49	104.05
(d)	22KV Feeder Bay		Nos	14.52	25.00	3.63
(e)	11 KV Feeder Bay		Nos	11.44	48.00	5.49
(f)	Single pole cut points		Nos	0.67	2326.00	15.58
(g)	Double pole cut points		Nos	1.02	2638.00	26.96
(h)	11 KV Line Capacitor		Nos	1.12	402.00	4.50
	Sub Total (7)					**1201.42**
8	**Covered Conductor (HT AB cable)**		**Kms.**	18	333.00	**61.19**
9	**IT / OT Works**		**Nos.**			
(a)	**ERP Up-gradation**		Nos.			
	I. Upgradation from ECC EHP 8 to S/4 on HANA for all modules **II.** e-Bidding (SRM) SAP Treasury and Risk Module		LS	55.12	LS	55.12
	(iv) In-Memory Computation for Business Intelligence Warehousing (BW)		LS	19.20	LS	19.20
(b)	**Upgradation of Other IT modulesand Hardware (cloud)**					
	(ii) Upgradation of CRM, EA, WSS, NC,DMS,		LS	5.98	LS	5.98
	(iii) Replacement of servers in systemand upgradation of storage		LS	14.66	LS	14.66
(c)	**New Modules/application procurement / development**					
	(i) Load Forecasting and associatedtools		LS	30.00	LS	30.03
	(ii) SDWAN implementation		LS	30.00	LS	30.42
(d)	**Licenses Cost licenses for the accomplishment of IT/OT worksunder RDSS**					
	(i) Licences of time series database forIT / OT		LS	10.00	LS	10.00

Sr No.	Major Component	Item Particulars	UoM	Unit cost (Rs. lakh)	Quantity	Estimated cost in Rs. Crores
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) x (6)
	solutions					
	(ii) Licences for MS-SQL, OracleEnterprise Edition		LS	3.00	LS	3.00
	Sub Total (9)					**168.41**
10	**Cyclone Resilient Network under NCRMP works**					
(a)	HT UG Cabling (3Cx300 sqmm)		CKm	23.21	1,376	319.33
(b)	RMU (3 Way or 5 Way)		Nos	11.20	459	51.42
(c)	LT UG Cabling		CKm	5.80	7,330	425.05
(d)	AB Cabling		CKm	5.91	162	9.57
(e)	LT Feeder Pillar /LTDB		Nos.	0.30	13,336	39.46
(f)	SMC Multimeter boxes(12 Meters perbox)		Nos.	0.11	21,438	22.53
(g)	New Switching-Stations		Nos	254.7	3	7.64
(h)	New/Augmentation of DTCs		Nos	3.89	232	9.03
	Sub Total (11)					**884.03**
11	**Power supply arrangements for Ray Nagar Colony,Solapur under PMAY**		LS	LS	LS	**57.90**
	Total Project Cost				**13149.32**	
	Total GBS				**7889.59**	



महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2019-20/ 078

Date: 28 January, 2020

To,
The Chairman & Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: -MSEDCL's Capex Proposal of "Shet-Tale Scheme of Rs. 749.72 Crs. for 5 Districts of East Vidarbha Region for the FY 2019-20" (to be funded by the GoM as grant) for in-principle approval of the Commission.

Ref: 1. MSEDCL Submitted DPR on 26 November, 2019.
2. Data Gaps mailed on 9 December, 2019.
3. Discussion held with MSEDCL's officials on 2 January, 2020.
4. Reply to the data Gaps dated 7 January, 2020.

Sir,

This has reference to your submitted DPR for ***"In-principle approval for Shet-Tale Scheme of Rs. 749.72 Crs. for 5 Districts of East Vidarbha Region for the FY 2019-20".*** The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

1 I am directed to convey the 'In-principle approval' of the scheme. The particulars of the scheme as approved are outlined in the Annexure "A".

2 Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the Scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

3 MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, मुंबई - ४०० ००५.
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 Fax : 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in Website : www.merc.gov.in / www.mercindia.org.in

4 Assets created after execution of the Scheme should be maintained separately in the Asset Register.

5 Immediately after completion/commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

6 MSEDCL has to comply all the technical standards, Rules and Regulations including safety norms.

7 This approval is subject to grant of Rs. 749.72 Cr. from the GoM. MSEDCL shall follow up with the GoM for release of balance fund under the scheme.

Yours faithfully,

(Dr. Rajendra G. Ambekar)
Executive Director

Encl: Annexure "A".

Annexure – A

A) Feasibility Report for Capital Investment Scheme

<table>
<tr><th>SN</th><th>Particulars</th><th>Details</th></tr>
<tr><td>1</td><td>Title (Name of Scheme)</td><td>Shet-Tale Scheme of Rs. 749.72 Crs. for 5 Districts of East Vidarbha Region for the FY 2019-20</td></tr>
<tr><td>2</td><td>Estimated and Approved Cost</td><td>
<table>
<tr><th>Sr. No</th><th>Work Details</th><th>Proposed Cost in Rs. Crs.</th><th>Approved Cost in Rs. Crs.</th></tr>
<tr><td>1</td><td>System Strengthening</td><td>269.76</td><td>269.76</td></tr>
<tr><td>2</td><td>Renovation & Modernisation of existing electrical network</td><td>131.05</td><td>131.05</td></tr>
<tr><td>3</td><td>Energization of Ag. Pumps</td><td>348.91</td><td>348.91</td></tr>
<tr><td></td><td>Total</td><td>749.72</td><td>749.72</td></tr>
</table>
</td></tr>
<tr><td>3</td><td>Brief Scope of work</td><td>
<table>
<tr><th>S. N.</th><th>Work Details</th><th>Scope</th></tr>
<tr><td>1</td><td>System Strengthening</td><td>1) Add. Power Trans.-7 Nos
2) Aug. of Power Trans.-14 Nos
3) Line Bifurcation- 134kms
4) Add. DTC- 1129 Nos
5) HT Line- 4320 kms
6) LT Line- 1454 kms</td></tr>
<tr><td>2</td><td>Renovation & Modernisation of existing electrical network</td><td>1) Replacement of Breaker-71 Nos
2) Reearthing of HT/LT DTC.-8550 Nos
3) Reearthing of HT/LT Pole-109772 Nos
4) Replacement of HT/LT gurading-26884 Nos
5) Replacement of HT/LT DB-8800 Nos
6) Replacement of HT/LT Cable-31313 kms
7) Provision of midspan HT/LT Pole-76773 Nos
8) HT/LT Stay Sets- 65766 Nos</td></tr>
<tr><td>3</td><td>Energization of Ag. Pumps</td><td>1) Ag. Pumps- 27000 Nos
2) New DTC for Energization of Ag. Pumps-270 Nos
3) HT Line-135 kms
4) LT Line-396.9 kms
5) New Substation-11 Nos</td></tr>
</table>
</td></tr>
<tr><td>4</td><td>Return on Investment / Cost Benefit</td><td>East Vidarbha Scheme have been envisaged by Government of Maharashtra to extend electricity supply to Ag consumers, which will ultimately improve living standard of beneficiaries. Scheme is driven by social developmental motives hence no monetary benefits are envisaged.</td></tr>
<tr><td>5</td><td>Funding Arrangement</td><td>100% grant from the Government of Maharashtra.</td></tr>
<tr><td>6</td><td>Time frame</td><td>Scheme will be completed by December-2020.</td></tr>
</table>

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2019-20/३१७ Date: 22 October, 2019

To,

The Chairman & Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: MSEDCL's Capex Proposal for System Strengthening to provide reliable and quality power supply in Mumbai and Pune Metropolitan Region (DPR Cost Rs. 438 Cr).

Ref.: 1. MSEDCL's proposal dated 4 December, 2018
2. Data gaps sent to MSEDCL on 23 January, 2019 and 15 March, 2019.
3. MSEDCL Reply dated 15 February, 2019 and 2 and 15 March, 2019.
4. Data gaps sent to MSEDCL on 4 July, 2019 and reminder on 19 July, 2019.
5. MSEDCL Reply dated 30 September, 2019.

Sir,

1 This has reference to your submitted DPR, for in principle approval to the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

2 I am directed to convey the 'in-principle' clearance of the scheme. The particulars of the scheme as approved are outlined in the Annexure "A" and Appendix "A" attached.

3 Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the Scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, मुंबई - ४०० ००५.
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 Fax : 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in Website : www.merc.gov.in / www.mercindia.org.in

4 MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

5 Assets created after execution of the Scheme should be maintained separately in the Asset Register.

6 Immediately after completion/commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

7 MSEDCL shall endeavor to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.

8 Major scope of work shall be executed through competitive bidding process only.

Yours faithfully,

(Dr. Rajendra G. Ambekar)
Executive Director

Encl: Annexure "A" and Appendix "A"

Annexure A

Feasibility Report for System Strengthening to provide reliable and quality power supply in Mumbai and Pune Metropolitan Region

<table>
<tr><td>Name of the scheme</td><td>MSEDCL's Capex Proposal for System Strengthening to provide reliable and quality power supply in Mumbai and Pune Metropolitan Region</td></tr>
<tr><td>Estimate cost proposed by MSEDCL</td><td>Rs 438 Crore</td></tr>
<tr><td>In-principle approval accorded</td><td>Rs 438 Crore</td></tr>
<tr><td>Cost benefit</td><td>Due to the implementation reduction in interruptions, reliability of supply will be achieved. Also this scheme will increase growth in terms of sales.</td></tr>
<tr><td>Scope of the works in brief</td><td>augmentation/ conversion of HT/LT lines, additional link lines for conversion of existing radial network to ring mains, providing RMUs, new/augmentation of DTC, new substations and switching stations and augmentation and additional power transformers in substations and other R&M works</td></tr>
<tr><td>Objectives/Justification</td><td>To release new connection, prevent system overloading and minimize power supply interruptions to the consumers and to ensure safety of public. Enable release new connections in future.</td></tr>
<tr><td>Funding arrangement</td><td>80% Funding for the project will be made by availing loans from banks/financial institutions and 20% through internal resources.</td></tr>
<tr><td>Time frame/phasing out of expenditure</td><td>The revised phasing of Capital expenditure and Capitalization has been approved as under.
<table>
<tr><th rowspan="2">Financial Year</th><th>Capital Expenditure</th><th>Capitalization</th></tr>
<tr><th>(Rs. Crore)</th><th>(Rs. Crore)</th></tr>
<tr><td>FY 2018-19</td><td>4.38</td><td>4.38</td></tr>
<tr><td>FY 2019-20</td><td>300</td><td>300</td></tr>
<tr><td>FY 2020-21</td><td>133.62</td><td>133.62</td></tr>
<tr><td>Total</td><td>438</td><td>438</td></tr>
</table></td></tr>
</table>

Observations / Comments on Feasibility Report

1.	Prudence of Investment / Technical Justification	To release new connection, prevent overloading of system and to minimize power supply interruptions to the consumers and to ensure safety of public.
2.	Reasonability of Cost Estimate	MSEDCL has taken cost data as per their approved cost data for FY 2018-19. MSEDCL has further submitted that it will follow competitive bidding process for executing works.
3.	Comments on Cost Benefit Analysis	a) Improving the reliability and quality of the power supply. b) Addition of infrastructure to meet load growth. c) Reduction of technical and commercial losses. d) Strengthening of existing infrastructure to overcome the existing deficiencies The benefits cannot be quantified in monitory terms
4.	Discrepancy/ Shortcomings Observed	Compiled by MSEDCL
5.	Remarks/Specific Comments, if any	—



Appendix –A

SN	Description	Unit	Zone	Quantity	Cost (Rs. Cr.)
1	Installation/ Replacement of RMU	Nos	Bhandup	196	18.56
			Kalyan Zone	23	2.38
			Pune	417	53.22
			Sub-Total	**636**	**74.16**
2	Augmentation/ conversion of HT/LT lines	kms	Bhandup	287.63	14.59
			Kalyan Zone	329.8	20.1
			Pune	187.72	7.18
			Sub-Total	**805.15**	**41.87**
3	New Lines	kms	Bhandup	339.39	59.98
			Kalyan Zone	309.6	77.32
			Pune	115.81	25.9
			Sub-Total	**764.8**	**163.2**
4	Replacement of feeder pillars	Nos	Bhandup	814	4.81
			Kalyan Zone	1675	4.93
			Pune		
			Sub-Total	**2489**	**9.74**
5	Replacement of Poles	Nos	Bhandup	1591	4.2
			Kalyan Zone	1538	4.06
			Pune		
			Sub-Total	**3129**	**8.26**
6	Replacement of DB	Nos	Bhandup	95	0.21
			Kalyan Zone		
			Pune		
			Sub-Total	**95**	**0.21**
7	Provision/ replacement of isolators/ AB Switches/VCB	Nos	Bhandup	186	2.95
			Kalyan Zone	175	1.11
			Pune		
			Sub-Total	**361**	**4.06**
8	Replacement of line Accessories	Nos	Bhandup	1697	1.79
			Kalyan Zone	6908	9.62
			Pune		
			Sub-Total	**8605**	**11.41**
9	R&M of DTC	Nos	Bhandup	120	1.35
			Kalyan Zone	673	2.86

SN	Description	Unit	Zone	Quantity	Cost (Rs. Cr.)
			Pune		
			Sub-Total	**793**	**4.21**
10	Installation of meters/ service boxes	Nos	Bhandup		
			Kalyan Zone	1847	6.21
			Pune		
			Sub-Total	**1847**	**6.21**
11	Others(R&M)	Nos	Bhandup	1146.5	3.71
			Kalyan Zone	4750	4.1
			Pune	2189	4.35
				8085.5	12.16
12	DTC New/ Augmentation/ conversion		Bhandup	158	20.62
			Kalyan Zone	4	0.81
			Pune	212	21.93
			Sub-Total	**374**	**43.36**
13	Augmentation of power transformer, Renovation of existing substation, Establishment of New Sub Station/ Switching Station		Bhadup	11	6.89
			Kalyan Zone	38	19.52
			Pune	4	7.23
			Sub-Total	**53**	**33.64**
14	RI Charges	kms	Bhadup		16.5
			Kalyan Zone		0.81
			Pune	33.62	7.92
			Sub-Total	**33.62**	**25.23**
			Grand Total		**438**

R- 6.11.6.11/2017

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2017-18/ 4783 Date: 28 November, 2017

To,
The Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

OFFICE OF CMD, MSEDCL		
DIR-FIN	DIR-OP	DIR-PROJ
ED-COM	ED-DIST	ED-INFRA
ED-PROJ	ED-HR	ED-SE
FOR NECESSARY ACTION		

Subject: In-principle clearance for the DPR of MSEDCL for "Execution of works for up-gradation and system improvement of MIDC feeding High-risk (Red Grade) Sub-stations and proposed 2x10 MVA Sub-station at Baramati MIDC".

Sir,

CMD

This has reference to your submitted DPR for "Execution of works for up-gradation and system improvement of MIDC feeding High-risk (Red Grade) Sub-stations and proposed 2x10 MVA Sub-station at Baramati MIDC", for in-principle approval to the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

Dir(Op)

1. I am directed to convey the 'in-principle' clearance of the scheme. The particulars of the scheme as approved are outlined in the Annexure "A" and Appendix "A" attached.

ED I	
ED II	
ED III	
ED IV	
ED HR	
RD NAG	
RD Pune	
RD Aland	
RD KAL	
CE Comm	
CE Dist	
CE PP	
CE MM	
CE IR & TRC	
SE IM	
SE DI	

2. The IDC shall be considered after execution of the project at time of tariff Petition.

3. Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved, etc., ex-post after implementation of the Scheme. MSEDCLwill be required to submit the status of implementation of the scheme with cost-incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

4. MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

5. Assets created after execution of the Scheme should be maintained separately in the Asset Register.

S.E. (R.A.)
S.E. (Dist.)
E.E. (Compl.)
E.E. RE I
E.E. RE III
E.E. D III
E.E. D IV
E.E. (Testing)
V. Manager (F & A)
G.D.

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, कुलाबा, मुंबई - ४०० ००५.
13th Floor, Centre No 1, World Trade Centre, Cuffe Parade, Colaba, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 Fax : 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in Website : www.merc.gov.in / www.mercindia.org.in

6. Immediately after completion/commissioning of the scheme, MSEDCLshould communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

7. MSEDCL shall endeavour to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.

8. Major scope of work shall be executed through competitive bidding process only.

9. The taxes approved in the Scheme are as per previous regime and stand to be changed as applicable as per Goods and Service Tax (GST) Act.

Yours faithfully,

28/11/17

(Prafulla Varhade)
Director (EE), MERC

Encl: Annexure "A" and Appendix "A"

CC: to

Prayas Energy Group, Amrita Clinic, Athawale Corner, Lakdipool-Karve Road Junction, Deccan Gymkhana, Karve Road, Pune 411 004.	The President, Mumbai Grahak Panchayat, Grahak Bhavan, Sant Dnyaneshwar Marg, Behind Cooper Hospital, VileParle (West), Mumbai 400 056.
The General Secretary, Thane Belapur Industries Association, Plot No.P-14, MIDC, Rabale Village, PO Ghansoli, Navi Mumbai 400 701.	The President, Vidarbha Industries Association, 1st floor, Udyog Bhawan, Civil Lines, Nagpur 440 001.
Maharashtra Chamber of Commerce Industry & Agriculture, Oricon House, 6th Floor, 12 K. Dubash Marg, Fort, Mumbai - 400 001. (Nashik Branch)	Chamber of Marathwada Industries and Agriculture, Bajaj Bhavan, P-2, MIDC Area, Station Road, Aurangabad – 431 005. Mobile No. – 9158898076. Email - info@cmia-aurangabad.com

Details of DPR PIE schemes apporved by MERC

Sr. No.	Name of the Scheme	MERC Scheme Code no.	MERC approval Lr. No. and Date	Approved Cost (Rs in Crs)
1	PIE Scheme for Raigad Dist	MSEDCL/FY 10/ 05	296/ 15.03.2010	18.63
2	PIE Scheme for Ahmednagar Dist	MSEDCL/FY 10/ 38	1245/ 05.10.10	82.92
3	PIE Scheme for Sindhudurg Dist	MSEDCL/FY 11/ 03	1384/ 18.10.10	3.35
4	PIE Scheme for Aurangabad Dist	MSEDCL/FY 11/ 03	1384/ 18.10.10	32.34
5	PIE Scheme for Ratnagiri Dist	MSEDCL/FY 10/ 37	1404/ 20.10.10	8.32
6	PIE Scheme for Jalna - I Dn.	MSEDCL/FY 10/ 37	1404/ 20.10.10	14.32
7	PIE Scheme for Jalna - II Dn.	MSEDCL/FY 10/ 37	1404/ 20.10.10	3.52
8	PIE Scheme for Parbhani Dn.	MSEDCL/FY 10/ 37	1404/ 20.10.10	8.95
9	PIE Scheme for Latur Dist.	MSEDCL/FY 11/ 10	1568 / 15.11.10	15.47
TOTAL				**187.80**

Details of DPR PSI schemes apporved by MERC

Sr. No.	Scheme Code No.	Name of the Scheme	Approved Cost
1	MSEDCL/FY 10/46	New S/Stn. at Satana in Nashik District	1.95
		New S/Stn. at Kalikutti & Power House in Nashik District	9.92
2	MSEDCL/FY 07/08	Nanded City	35.00
3	MSEDCL/FY 07/08	Augumentation of Sub-transmmision & distribution capacities (Krushi Vikas Yojana) in Nashik (R), Nashik (U), Jalgaon, Ahmednagar	108.39
4	MSEDCL/FY 10/20	Reorientation of 22 kV & 11 kV feeders for power evacuation from 132/22/11 kV Rastapeth GIS & 220/22 kV Magarpatta EHV s/stn.	51.74
5	MSEDCL/FY 10/29	Establishment of 6 nos. of new 33/11 kV s/stns. in Jalna district	14.61
6	MSEDCL/FY 10/42	New 33/11 KV 8 Nos. of s/stn. in Beed	21.19
7	MSEDCL/FY 10/47	Establishment of 4 Nos. of S/stn. in Baramati District	9.50
		Establishment of new 33/11 kV s/stn. at Mandavgan in Ahmednagar district	3.93
8	MSEDCL/FY 11/01	Establishment of 4 nos.of new 33/11Kv s/s & 3 nos. of Addl. Power T/F at Baramati Circle	20.81
9	MSEDCL/FY 11/02	New 31 nos of 33/11 KV S/st & 20 nos of addl. power T/F in Solapur District	97.89
10	MSEDCL/FY 11/04	New 09 nos. of 33/11 kV S/stn, 02 nos. of additional power transformer in Buldhana District	25.99
11	MSEDCL/FY 11/05	New 08 nos. of 33/11 kV S/stn, 01 no. of Augmentation & 02 nos. of additional power transformer in Hingoli District	34.75
12	MSEDCL/FY 11/07	Swtiching Station at Ambadi, Kudus & Abhitghar in Wada District of Vasai Circle	20.10
13	MSEDCL/FY 11/09	Establishment of 9 nos. of new 33/11kV s/stn. in Washim Dist.	20.96
14	MSEDCL/FY 12/02	Release of all type of connections and creating abckup infrastructure in Beed district.	121.10
15	MSEDCL/FY 13/10	In principel approval for laying of cable for incomer of 22/22 KV switching at Abhitghar & Kudus in Wada Taluka	18.27
16	MSEDCL/FY 14/01	Establishment of new 22 KV feeders in Virar & Vasai	11.71
		Establishment of new S/stn in Buldhana	
		Establishment of new 1 S/stn in Beed	
TOTAL			**627.81**

Details of DPR SPA schemes apporved by MERC

Sr. No.	Scheme Code No.	MERC approval Lr. No. and Date	Name of the Scheme	Approved Cost
1	MSEDCL/FY10/02	993/25.05.09	Ag pump scheme in Sangli District for 7000 pumps	72.00
2	MSEDCL/FY10/11	2574/11.11.09	Ag pump scheme in Buldhana District for 10922 pumps	62.57
3	MSEDCL/FY10/17	2574/11.11.09	Ag pump scheme in Satara District for 7653 pumps	48.36
4	MSEDCL/FY09/05	335 / 27.01.10	Ag pump scheme in Ahmadnager District for 6918 pumps	50.38
5	MSEDCL/FY10/03	335 / 27.01.10	Ag pump scheme in Solapur District for 16581 pumps	77.94
6	MSEDCL/FY10/06	335 / 27.01.10	Ag pump scheme in Beed District for 10932 pumps	67.62
7	MSEDCL/FY10/21	335 / 27.01.10	Ag pump scheme in Baramati circle for 7922 pumps	76.30
8	MSEDCL/FY10/07	340 / 28.01.10	Ag pump scheme in Latur District for 3227 pumps	28.83
9	MSEDCL/FY10/16	340 / 28.01.10	Ag pump scheme in Manmad Division of Nashik District	10.31
10	MSEDCL/FY10/28	340 / 28.01.10	Ag pump scheme in Jalna District for 2300 pumps	10.16
11	MSEDCL/FY10/30	340 / 28.01.10	Ag pump scheme in Hingoli District for 1913 pumps	10.46
12	MSEDCL/FY10/32	340 / 28.01.10	Ag pump scheme in Nandurbar District for 2163 pumps	13.49
13	MSEDCL/FY10/34	340/ 28.01.10	Ag pumps in Parbhani District for 1900 pumps	10.22
14	MSEDCL/FY10/36	340 / 28.01.10	1286 nos. of Ag pump energisation scheme in Jalgaon District	8.76
15			Ag pumps in Satana Division of Nashik District	9.90
16	MSEDCL/FY10/23	330/18.03.10	Ag pump scheme in Amravati District for 6346 pumps	31.43
17	MSEDCL/FY10/24	330/18.03.10	Ag pump scheme in Gondia District for 1496 pumps	11.66
18	MSEDCL/FY10/40	330/18.03.10	Ag pump scheme in Buldhana District for 6155 pumps	67.32
19	MSEDCL/FY10/39	349/19.03.10	Ag pump scheme in Bhandara District for 2292 pumps	17.32
20	MSEDCL/FY10/44	014/01.04.10	Ag pumps in Akola District for 3560 pumps	30.28
21	MSEDCL/FY10/45	014/01.04.10	Ag pumps in Washim District for 3500 pumps	28.85
22	MSEDCL/FY10/01	014/01.04.10	Ag pump scheme in Pune Rural Circle for 7002 pumps	56.22
23	MSEDCL/FY10/04	014/01.04.10	Ag pump scheme in Wardha District for 5964 pumps	32.71
24	MSEDCL/FY10/14	014/01.04.10	Ag pump scheme in Nanded District for 12390 pumps	74.89
25	MSEDCL/FY10/35	014/01.04.10	Ag pumps in Chandwad Division of Nashik District	9.95
26	MSEDCL/FY10/41	014/01.04.10	Ag pumps in Nagpur District for 1700 pumps	9.88
27	MSEDCL/FY10/43	014/01.04.10	Ag Pumps in Kannads & Aurangabad Rural division of Aurangabad Rural Circle for 25000 Pumps	95.44

Details of DPR SPA schemes apporved by MERC

Sr. No.	Scheme Code No.	MERC approval Lr. No. and Date	Name of the Scheme	Approved Cost
28	MSEDCL/FY11/06	1429/22.10.10	Ag pumps in Nagpur District for 3715 pumps	30.37
29			Ag pumps in Dhule District for 1961 pumps	9.67
30	MSEDCL/FY10/33		Ag pumps in Osmanabad District for 2000 pumps	10.19
31	MSEDCL/FY 11/15	1569/15.11.10	Electrification of 91606 nos. of Ag. pumps in various districts of Maharashtra	1388.57
32	MSEDCL/FY12/07	07/31.07.12	Release of 4450 numbers of Agricultural Pumps & 1623 Nos. of RCI connections in Wardha District	34.44
33	MSEDCL/FY13/08	07/31.07.12	Release of 81461 numbers of Agricultural Pumps connections in Dhule District	**75.04**
34	MSEDCL/FY13/07	07/31.07.12	Release of 4021 numbers of Agricultural Pumps in Buldhana District under Buldhana circle	12.15
35	MSEDCL/FY13/06	07/31.07.12	Release of 8227 numbers of Agricultural Pumps & 3132 Nos. of RCI connections in Osmanabad District	54.40
36	MSEDCL/FY13/04	07/31.07.12	Release of 19615 numbers of Agricultural Pumps & 6787 Nos. of RCI connections in Nashik District under Nashik Rural circle	116.49
37	MSEDCL/FY13/05	07/31.07.12	Release of 11247 numbers of Agricultural Pumps connections in Nanded District	**67.25**
38	MSEDCL/FY14/03	1093/27.08.13	Release of 6208 numbers of Agricultural Pumps in Beed District	25.42
39	MSEDCL/FY14/02	1092/27.08.13	Release of 2312 numbers of Agricultural Pumps in Bhandara, Nagpur, Akola District	15.28
40	MSEDCL/FY13/12	469/23.05.13	Release of Agricultural Pumps in Shrirampur (A"nagar) District	22.05
41	MSEDCL/FY13/13	469/23.05.13	Release of Agricultural Pumps in Jalna District	64.48
TOTAL				**2949.04**

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

सत्यमेव जयते

MERC/CAPEX/2017-18/ 0152 **Date: 31 January, 2018**

To,

Director (Project)/ (Commercial),
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: In-principle clearance for the DPR of MSEDCL's Capital Expenditure Scheme for DDUGJY

Sir,

This has reference to the In-principle approval accorded by the Commission vide letter dated 28th January 2016 for MSEDCL's Capital Expenditure Scheme for Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY). In the said approval, as one of the milestones for converting loans into grant is timely completion of the scheme, the Commission had accorded its in-principle approval for the original project cost of Rs 2152.68 Crore and MSEDCL was directed to submit Feasibility Reports for 33 Districts, as per Guideline circulated by the Commission on 9th February 2005, at the time of filing of ARR Petition. It is observed that no such feasibility reports have been received by the Commission.

Vide letter dated 31st January 2018 relating to Commission's In-principle approval for the revised cost of DDUGJY scheme, MSEDCL is once again directed to submit Feasibility Reports for 33 Districts with revised project cost of Rs 2164.15 Crore, as per Guideline circulated by the Commission on 9th February 2005, with MTR Petition.

You are requested to submit Feasibility Reports for 33 Districts with revised project cost of Rs 2164.15 Crore as stated above.

Yours faithfully,

31/1/18
(Prafulla Varhade)
Director (EE), MERC

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, कुलाबा, मुंबई - ४०० ००५.
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Colaba, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 **Fax** : 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in **Website** : www.merc.gov.in / www.mercindia.org.in

MERC
MAHARASHTRA ELECTRICITY REGULATORY COMMISSION
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Colaba, Mumbai 400 00
Tel.. 022-2216 3964 / 2216 3965 / 2216 3969 ◆ Fax : 022-2216 3976 ◆ Website : www.mercindia.org
E-mail : mercindia@mercindia.org.in

MERC/CAPEX/20092010/00238

10th March, 2010

The Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg,
Bandra (E),
Mumbai 400 051.

Sub: In-principle clearance of the scheme for elimination of 66 kV level in Amravati, Nagpur Rural and Nagpur Urban Zones

Ref: MSEDCL letter no. CE/ DSPC / 66 kV /26 / 263 Dated 04.01.2010.

Sir,

This has reference to the Detailed Project Report (DPR) for elimination of 66 kV level in Amravati, Nagpur Rural and Nagpur Urban Zones submitted by MSEDCL vide letters under reference.

1. The scheme has been evaluated with reference to the guidelines circulated by the Commission on 9th February 2005. I am directed to convey in-principle approval of this scheme. The particulars of the scheme as approved in principle are outlined in the Annexure and the breakup of the project cost is given in Appendix A to the Annexure.

2. Please note that this in-principle clearance should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process / ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc. ex post after implementation of the scheme. MSEDCL will be required to submit the status of implementation of the schemes with cost incurred till date, likely completion date etc. along with their ARR petition or during the tariff determination process at the appropriate time.

3. MSEDCL should submit six-monthly report giving the status of implementation of the scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the scheme.

4. Asset created after execution of the scheme should be maintained separately in the Asset register.

5. Immediately after completion of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc so as to facilitate a comparison between the in-principle clearance and the actual.

Yours Faithfully,

(K.N. Khawarey)
Secretary, MERC

Encl: Annexure and Appendix A

Cc to:

The Chief Engineer (Distribution)
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg,
Bandra (E),
Mumbai 400 051.

Prayas Energy Group,
Amrita Clinic, Athawale Corner,
Lakdipool-Karve Road Junction,
Deccan Gymkhana, Karve Road,
Pune 411 004

The President,
Mumbai Grahak Panchayat,
Grahak Bhavan, Sant Dynyaneshwar Marg,
Behind Cooper Hospital,
Vile Parle (West),
Mumbai 400 056

The General Secretary,
Thane Belapur Industries Association,
Plot No. P-14, MIDC,
Rabale Village, PO Ghansoli,
Navi Mumbai 400 701

The President,
Vidarbha Industries Association,
1st Floor, Udyog Bhawan,
Civil Lines,
Nagpur 440 001

/CAPEX/2009201o/00238

10th March, 2010

Annexure

Brief particulars of MSEDCL's Scheme for

Elimination of 66 kV level in Amravati, Nagpur and Nagpur Urban Zone

As approved in-principle

(Based on particulars furnished in the DPR by MSEDCL)

1)	a) Name of Scheme	Elimination of 66 kV level in Amravati, Nagpur and Nagpur Urban Zone
	b) Scheme Code	MSEDCL/FY 10/38
2)	Estimated Cost	Rs. 147.70 Cr. Break up of cost estimate as per Appendix A
3)	ROI/Cost benefits	No direct monitory benefits are envisaged but standardization of system voltage level will facilitate smooth maintenance of the system. .
4)	Brief Scope of work	New Substations: 33/11 kV, 2 x 10 MVA substation : 13 nos. 33/11 kV, 1 x 10 MVA substation : 4 nos. 33/11 kV, 2 x 5 MVA substation : 9 nos. 33/11 kV, 1 x 5 MVA substation : 3 nos. Augmentation of Substation: 33/11 kV, Additional Power T/F 2 x 10 MVA : 2 nos. 33/11 kV, Additional Power T/F 1 x 10 MVA : 2 nos. HT Line: 33 kV Line (overhead) : 182 kms 11 kV Line (overhead) : 25 kms 11 kV Line (Underground) : 19 kms
5)	Objectives / Justification	▪ To eliminate 66 kV level. ▪ To standardize system voltage levels.
6)	Funding arrangement	100 % loan from Financial Institutions
7)	Time frame/ phasing out of expenditure	Scheme will be completed by March 2012

Year	Amount (Rs. Cr.)
2010-11	106.25
2011-12	41.45
Total	**147.70**



...ak up of cost estimate (Based on particulars furnished in the DPR by MSEDCL)

Appendix A

Elimination of 66 kV level in Amravati, Nagpur and Nagpur Urban Zone

Amt in Rs. Lakh

Activity	Unit	Rate / Uint	Amravati Zone								Nagpur Zone										Nagpur Urban Zone				Grand Total	
			Yavatmal Circle		Amravati Circle		Washim Circle		Total Zone		Gondia Circle		Gadchiroli Circle		Bhandara Circle		Chandrapur Circle		Total Zone		NEC Circle		Total Zone			
			Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
33/11 kV, 2 x 10 MVA Outdoor Substation	nos	327	1	327	1	327	0	0	2	654	1	327	0	0	2	654	8	2616	11	3597	0	0	0	0	13	4251
33/11 kV, 1 x 10 MVA Outdoor Substation*	nos	118.7	0	0	1	118.7	0	0	1	118.7	0	0	0	0	0	0	3	356.19	3	356.19	0	0	0	0	4	474.92
33/11 kV, 2 x 5 MVA Outdoor Substation	nos	236.5	0	0	2	473	0	0	2	473	0	0	4	945.9	0	0	1	236.48	5	1182.4	2	473	2	473	9	2128.32
33/11 kV, 1 x 5 MVA Outdoor Substation	nos	151.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	424.92	3	424.92	0	0	0	0	3	424.92
33/11 kV, Additional Power T/F 2 x 10 MVA	nos	243.5	2	486.9	0	0	0	0	2	486.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	486.92
33/11 kV, Additional Power T/F 1 x 10 MVA	nos	118.7	2	237.5	0	0	0	0	2	237.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	237.46
33 kV Line	km							0	0	0		0		0		0		0	0	0		0	0	0	0	0
Over head line on 11 mtr RSJ Pole	km	8.50	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	356.9	42	356.9	42	356.91
Over head line on 10 mtr RSJ Pole	km	6.87	12	82.44	20	137.4	0	0	32	219.8	0.1	0.69	70	480.9	9	61.83	29	199.23	108.1	742.65	0	0	0	0	140	962.387
300 sq. mm. Under Ground Cable	km	34.05	1.1	37.46	1	34.05	0	0	2.1	71.51	0	0	4	136.2	1	34.05	105.8	3602.5	110.8	3772.7	1.5	51.08	1.5	51.08	114	3895.32
33 kV Gantry	nos	11.38	1	11.38	1	11.38	0	0	2	22.76	0	0	0	0	0	0	40	455.2	40	455.2	4	45.52	4	45.52	46	523.48
11 kV Indoor to Outdoor switchgear	nos	74.98	1	74.98	0	0	1	74.98	2	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	149.96
11 kV Take Off Structure	nos.	8.66	1	8.66	0	0	0	0	1	8.66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8.66
110 V Battery set with Charger	set	2.05	3	6.15	0	0	0	0	3	6.15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6.15
11 kV Line	km			0		0		0	0	0		0		0		0		0	0	0	0	0	0	0	0	0
Over head line on 10 mtr RSJ Pole	km	6.51	3.5	22.79	8.24	53.64	1.2	7.812	12.94	84.24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12.9	84.2394
Over head line on 9 mtr RSJ Pole	km	5.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	30.06	6	30.06
300 sq. mm. Under Ground Cable	km	19.48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10.98	196.36	0.08	196.36	0.2	3.896	0.2	3.896	10.3	200.254
240 sq. mm. Under Ground Cable	km	17.16	2.5	42.9	0	0	0	0	2.5	42.9	1	17.2	4	68.64	1	17.16	0	0	6	102.96	0	0	0	0	8.5	145.86
Civil works (Developing of Land)	nos		0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	364.26	13	364.26	1	40	1	40	14	404.26
Total				1338		1155		8 .79		2576		345		1632		767		8450.2		11194		1000		1061		14770.3

Say Rs. 147.70 Cr.

* ... VA substation shall be erected near to 2 x 10 MVA substation, requirment of land and control room is not considered in estimate. Due to which cost of this substation is taken same as of augmentation by additional Power Transformer of 1 x 10 MVA

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2018-19/ 1216 Date: 2 August, 2018

To,
The Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: In-principle clearance for the DPR of MSEDCL for "Implementation of High Voltage Distribution System (HVDS) for releasing connections to AG paid pending consumers in Maharashtra" **(Cost of Rs. 5048.13 Crore as proposed by MSEDCL** (Rs. 2248.09 Cr. as a Grant from GoM + Rs. 2799.59 Cr. will be borrowed through loans from Financial Institutes)).

Sir,

This has reference to your submitted DPR for "Implementation of High Voltage Distribution System (HVDS) for releasing connections to AG paid pending consumers in Maharashtra", for in-principle approval of the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

1. I am directed to convey the 'in-principle' clearance of the scheme. The particulars of the scheme as approved are outlined in the Annexure "A" and Appendix "A" attached.
2. Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the Scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.
3. MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.
4. Assets created after execution of the Scheme should be maintained separately in the Asset Register.

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, कुलाबा, मुंबई - ४०० ००५.
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Colaba, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 Fax : 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in Website : www.merc.gov.in / www.mercindia.org.in

5. Immediately after completion/commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

6. MSEDCL shall endeavor to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.

7. MSEDCL shall submit feasibility reports along-with DPR for all 44 Circles within two months along with cost benefit analysis in accordance with MERC, Capital Investment Guidelines 2005.

8. Increase in cost because of delay in execution will be on account of MSEDCL for which no capitalization will be allowed in ARR. Actual price after tenderization shall not exceed the in-principle approved cost.

9. The major scope of the work shall be executed through competitive bidding process only.

10. MSEDCL has to comply all the technical standards, Rules and Regulations including safety norms.

11. This approval is considering the grant of Rs. 2248.09 Cr. from GoM under HVDS scheme as approved by State Govt. through its GR. As submitted in the DPR, MSEDCL shall follow up with GoM for grant of Rs. 2248.09 Cr. MSEDCL shall not claim ARR against grant of Rs. 2248.09 Cr. under this scheme.

12. The taxes approved in the Scheme are as per previous regime and stand to be changed as applicable as per Goods and Service Tax (GST) Act.

Yours faithfully,

(Prafulla Varhade)
Director (EE), MERC

Encl: Annexure "A" and Appendix "A"

Annexure – A

A) Feasibility Report for Capital Investment Scheme

<table>
<tr><th>SN</th><th>Particulars</th><th>Details</th></tr>
<tr><td>1</td><td>Title (Name of Scheme)</td><td>"Implementation of High Voltage Distribution System (HVDS) for releasing connections to AG paid pending consumers in Maharashtra"</td></tr>
<tr><td>2</td><td>Estimated Cost</td><td>Rs. 5048.13 Crore</td></tr>
<tr><td>3</td><td>Approved Cost</td><td>Cost of Rs. 5048.13 Crore along with the phasing as proposed by MSEDCL
(Rs. 2248.09 Cr. as a Grant from GoM + Rs. 2799.59 Cr. Borrowing)</td></tr>
<tr><td>4</td><td>Brief Scope of work</td><td>A) Providing connections to 2,24,785 nos. of AG paid pending consumers as on 31.03.2018.
B) Erection of 1,91,168 nos. of HVDS DTs of 10/16/25 KVA capacity.
C) Erection of 77,830 KM HT line.</td></tr>
<tr><td>5</td><td>Objective / Justification</td><td>A) To reduce distribution losses.
B) To reduce Electric accidents.
C) To improve quality & reliability of supply to AG consumers & ultimately increase in Company's revenue.</td></tr>
<tr><td>6</td><td>Funding Arrangement</td><td>
<table>
<tr><th>S. N.</th><th>Particulars</th><th>Amount (In Rs Cr)</th><th>% Of Total Project Cost</th></tr>
<tr><td>1</td><td>Total Project Cost</td><td>5048.13</td><td>100%</td></tr>
<tr><td>2</td><td>Funds from GoM as a grant</td><td>2248.09</td><td>44.5</td></tr>
<tr><td>3</td><td>Loan from Financial Institutions</td><td>2799.59</td><td>55.5</td></tr>
</table>
</td></tr>
<tr><td>7</td><td>Time frame/ phasing out of expenditure</td><td>
<table>
<tr><th>Particulars of Equipments / System</th><th>FY2018-19</th><th>FY2019-20</th><th>Total</th></tr>
<tr><td>Capital Expenditure</td><td>2019.25</td><td>3028.88</td><td>5048.13</td></tr>
<tr><td>Capitalisation</td><td>2019.25</td><td>3028.88</td><td>5048.13</td></tr>
</table>
</td></tr>
</table>

Appendix –A
Cost Abstract

S N	District	Paid pending AG cons. As on 31/03/2018	Cost (Rs. Crore)	HVDS DTC				HT Line	33/11 kV S/Stn
				10 KVA	16 KVA	25 KVA	Total		
1	Akola	8536	192.01	5962	1293	3	**7258**	2903	11
2	Buldhana	4362	96.22	3387	320	3	**3710**	1484	5
3	Washim	6886	153.61	5271	574	9	**5854**	2342	9
4	Amaravati	3170	70.75	2042	655	0	**2697**	1079	4
5	Yavatmal	7954	176.64	6560	187	17	6764	2706	10
6	Nagpur	4345	95.74	3483	210	3	**3696**	1479	5
7	Wardha	3277	72.07	2685	100	2	**2787**	1115	4
8	Bhandara	2353	57.32	1995	7	0	**2002**	1001	3
9	Gondia	447	13.69	376	5	0	**381**	232	1
10	Chandrapur	4150	112.96	3444	77	9	**3530**	2118	5
11	Gadchiroli	3674	93.53	3118	3	5	**3126**	1626	5
	Vidarbha	49154	1134.53	38323	3431	51	41805	18085	62
12	Aurangabad	6197	137.71	4662	599	11	**5272**	2108	8
13	Jalna	12393	275.17	9737	403	397	**10537**	4215	16
14	Beed	5947	132.3	4761	294	2	5057	2023	7
15	Latur	2661	60.17	2012	241	11	**2264**	906	3
16	Osmanbad	4687	105.03	3719	264	5	**3988**	1595	6
17	Hingoli	4836	107.9	3857	256	0	**4113**	1645	6
18	Nanded	6706	149.79	5348	354	1	**5703**	2281	8
19	Parbhani	3963	88.18	3179	192	0	**3371**	1348	5
	Marathwada	47390	1056.25	37275	2603	427	40305	16121	59
	Vidarbha & Marathwada	**96544**	**2190.77**	**75598**	**6034**	**478**	82110	**34206**	**121**
20	Mumbai	0	0	0	0	0	**0**	0	0
21	Thane	397	10.39	329	13	0	**342**	137	1
22	Palghar	984	21.91	837	3	0	**840**	336	0
23	Raigad	766	17.65	627	22	5	**654**	262	0
24	Ratnagiri	1273	27.66	1043	35	7	**1085**	434	1
25	Sindudurg	1657	37.65	1374	28	9	**1411**	564	1
	Konkan	5077	115.26	4210	101	21	4332	1733	3
26	A-nagar	13117	292.13	9870	1220	63	**11153**	4461	11
27	Nashik	19628	436.79	15960	713	18	**16691**	6676	16
28	Dhule	6163	136.98	4635	605	1	**5241**	2096	5
29	Jalgaon	10189	227.11	7327	1306	30	**8663**	3465	9
30	Nandurbar	3872	87.06	2616	676	2	**3294**	1318	3
	North Maharashtra	52969	1180.07	40408	4520	114	45042	18016	44
31	Pune	12101	269.16	9455	751	87	**10293**	4118	10
32	Satara	14382	318.88	11352	832	43	**12227**	4891	12

S N	District	Paid pending AG cons. As on 31/03/2018	Cost (Rs. Crore)	HVDS DTC				HT Line	33/11 kV S/Stn
				10 KVA	16 KVA	25 KVA	Total		
33	Solapur	14716	327.99	11619	825	68	**12512**	5005	12
34	Kolhapur	10402	231.63	7392	1325	128	**8845**	3538	9
35	Sangli	18594	414.35	14758	985	64	**15807**	6323	15
	Western Maharashtra	70195	1562.01	54576	4718	390	**59684**	23875	58
	Rest of Maharashtra	**128241**	**2857.35**	**99194**	**9339**	**525**	**109058**	**43624**	**105**
	MSEDCL	**224785**	**5048.13**	**174792**	**15373**	**1003**	**191168**	**77830**	**226**

R-10550/2016

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/20152016/1464

Date: 10 February, 2016

CE IPDS
- Pl. write to PFC for release of RE charges

The Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg,
Bandra (E),
Mumbai 400 051.

Sub: In-principle clearance of MSEDCL's Capital Expenditure Scheme for implementation of Integrated Power Development Scheme (IPDS).

Ref:
1. MSEDCL ref. No. Dir (Proj.)/APDRP/IPDS/32411 dated 28.08.2015
2. MERC Email dated 06.10.2015
3. MERC letter ref MERC/TECH/CAPEX/2014-15/959 dated 18.11.2015
4. MSEDCL letter ref. No. CE/IPDS/EE-IV/PMA/MERC DPR/ No.41529 dated 14.12.2015.
5. MSEDCL letter ref. No. CE/IPDS/EE-IV/PMA/MERC DPR/ No.41648 dated 15.12.2015.
6. MSEDCL letter ref. No. CE/IPDS/EE-IV/PMA/MERC DPR/ No.41649 dated 15.12.2015.
7. MSEDCL letter ref. No. CE/IPDS/ No.01862 dated 13.01.2016
8. MSEDCL letter ref. No. CE/IPDS/ No.02474 dated 19.01.2016
9. MSEDCL ref. No. Dir (Proj.)/APDRP/IPDS/03163 dated 27.01.2016
10. MSEDCL Email dated 28.01.2016
11. MERC e mail dated 2.2.2016
12. Meeting of the Commission with MSEDCL officials on 5.2.2016

Sir,

This has reference to the Detailed Project Report (DPR) for the captioned Scheme submitted by MSEDCL vide letters under reference.

1. The Scheme has been evaluated broadly and I am directed to convey the in-principle approval of the Scheme for cost of Rs 2300.43 Crore, subject to the observations in this letter. The Scheme is target driven with an objective to upgrade infrastructure in urban areas and provide 24 x 7 power supply. As one of the milestones for the converting the loan into grant is timely completion of the Scheme, the Commission decided to accord its in-principle approval at this stage. MSEDCL is directed to submit Feasibility Reports for 44 Circles amounting to Rs 2300.43 Crore, as per guidelines circulated by the Commission on 9th February 2005, at the time of filing of ARR Petition.

2. The particulars of the Scheme as approved in-principle are outlined in Annexure 'A'.

CE/IPDS 694
Date:- 22 FEB 2016
SE (IPDS) ✓
E.E. (IPDS)-I/II/III/IV/V)
S.O. (DSM):-
U.D.C.

3. The Reinstatement Charges (RI Charges) are not considered as a part of this approval, which is in line with approval of Monitoring Committee. MSEDCL may follow up with appropriate authorities for approval of RI Charge component in capital cost outlay, and approach the Commission separately for approval and inclusion of the additional cost component of RI Charge depending on the outcome.

4. As clarified by the concerned officers of MSEDCL in recent discussion with the Commission, the provisioning of solar panels will be only in respect of MSEDCL buildings.

5. Please note that this in-principle clearance should not be construed as final approval for ARR purpose. The Scheme will be open for scrutiny during the tariff determination process / ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc. ex post after its implementation. MSEDCL will be required to submit the status of implementation of the Scheme with cost incurred till date, likely completion date, etc. along with its ARR petition or during the tariff determination process at the appropriate time.

6. MSEDCL should submit six-monthly progress reports giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during implementation.

7. Assets created after execution of the Scheme should be recorded separately in the Asset Register.

8. Immediately after completion of the Scheme, MSEDCL should communicate to the Commission the date of completion, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the Scheme and to what extent they have been achieved, etc so as to facilitate a comparison between the in-principle clearance and the actuals.

9. MSEDCL is directed to complete the Scheme within the time frame stipulated by MoP, GoI. Further, MSEDCL should achieve the milestones of AT & C loss reduction as specified by MoP and ensure timely completion so as to qualify for additional grant.

Yours Faithfully,

10.2.16

(Prafulla Varhade)
Director (EE), MERC

Encl: Annexure **A**

Cc to:

The Director (Projects)
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg,
Bandra (E),
Mumbai 400 051.

The General Secretary,
Thane Belapur Industries Association,
Plot No. P-14, MIDC,
Rabale Village, PO Ghansoli,
Navi Mumbai 400 701

Prayas Energy Group,
Amrita Clinic, Athawale Corner,
Lakdipool-Karve Road Junction,
Deccan Gymkhana, Karve Road,
Pune 411 004

The President,
Mumbai Grahak Panchayat,
Grahak Bhavan, Sant Dynyaneshwar Marg,
Behind Cooper Hospital,
Vile Parle (West),
Mumbai 400 056

The President,
Vidarbha Industries Association,
1st Floor, Udyog Bhawan,
Civil Lines,
Nagpur 440 001

Annexure A
Physcial Scope of Works

Sr. No.	Particular	Unit	Qty	Project cost (in Lakhs)
1	33/11 KV S/S : New	Nos	126	27748.2
2	33/11 KV S/S : Additional Transformer	Nos.	27	2599
3	33/11 KV S/S : Transformer capacity enhancement	Nos.	59	6190.55
4	Renovation & Modernization of 33/11 KV SS	Nos.	739	2892.93
5	New 33 KV new feeders/Bifurcation of feeders:	Kms	1241.45	14554.05
6	33 KV feeders Reconductoring/Augmentation	Kms	368.58	2244.04
7	33 KV Line Bay Extension at EHV station	Nos	57	681.95
8	11 KV Line : New Feeder/ Feeder Bifurcation	Kms	2331.52	19613.28
9	11 KV Line : Augmentation/Reconductoring	Kms	538.28	2056.95
10	Arial Bunched Cable	Kms	2794.1	8031.94
11	UG Cable	Kms	6793.77	58018.03
12	11 KV Bay Extension	Kms	87	423.3
13	Installation of Distribution Transformer	Nos.	5647	23075.64
14	Capacity enhancement of LT sub-station	Nos.	3400	16167.79
15	LT Line : New Feeder/ Feeder Bifurcation	Kms	2096.77	7105.03
16	LT Line : Augmentation/Reconductoring	Kms	1143.18	3182.62
17	Capacitor Bank	Nos.	67	696.05
18	HVDS	Nos.	5319	3296.06
19	Metering	Nos.	616973	7628.53
20	Provisioning of solar panel	KWe	3498	2297.44
21	RMU,Sectionaliser, Auto reclosures, FPI etc.	Lot	5424	5221.03
22	OTHER(DTR RENOVATION, R&M works)	Lot		16319.37
23	R.I. charges			
	Total			**230043.78**

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/Capex/MSEDCL/2023-24/0179 **Date: 11 March 2024**

To,

The Chairman & Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
Prakashgad A.K. Marg, Bandra (East),
Mumbai- 400 051.

Subject: MSEDCL's Capex scheme for Revamped Distribution Sector Scheme Reforms-Based and Results-Linked. (**Total Project Outlay- Rs.27,696.78 Crores**)

Ref:
1. MSEDCL letter Ref No. CE(Dist)/M-III/RDSS/29422 data 16.11.2022.
2. MERC Email- Referring back DPR dated 15.01.2023.
3. MSEDCL Email-Revised DPR submitted dated 31.01.2023
4. MERC Email- Data gaps dated 09.06.2023.
5. MSEDCL letter Ref CE(Dist)/M-III/RDSS/26762 dated 05 Sept 2023.
6. Meeting dated 08.01.2024

Sir,

This has reference to Capex Scheme submitted by MSEDCL vide letter under reference above and correspondence thereof.

1. The Scheme for 'Revamped Distribution Sector Scheme (RDSS) (Reforms-Based and Results-Linked) amounting to **Rs. 27,696.78 Crore** has been evaluated with reference to the MERC Capex Approval Regulations 2022. I am directed to convey in-principle clearance of the Scheme. The particulars of the Scheme as approved in -principle are outlined in **Annexure 'A'** and the breakup of the project cost is given in **Appendix 'A'**.

2. Please note that this in-principle clearance should not be construed as final approval for the ARR purpose. The Scheme will be open for scrutiny during the tariff determination process / ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc. ex post after implementation of the Scheme. MSEDCL shall submit the status of implementation of the Scheme with cost incurred till date, likely completion date etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

3. MSEDCL should submit six monthly progress reports as per the provisions of the Capex Approval Regulations 2022 giving status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

4. Assets created after execution of the Scheme should be maintained separately in the Asset Register.

5. MSEDCL is directed to endeavor to complete project within stipulated time frame. The increase in cost because of the delay in the execution of project will not be entertained in future. Also, the Commission will not grant the revised approval to the scheme. Further, the Commission will not allow capital cost, O&M cost and IDC against unutilized assets beyond the proposed date of COD till the asset is put to use.

6. Immediately after completion / commissioning of the Scheme, MSEDCL should communicate to the Commission the date of completion of the Scheme, item-wise actual cost incurred as per Appendix 'A', escalation in cost, if any, with reasons, the scope, and objectives of the Scheme and to what extent they have been achieved, etc. so as to facilitate a comparison between the in-principle clearance and the actual incurred cost. As per RDSS guidelines, MSEDCL is required to submit project competition certificate to PFC. The copy of said certificate shall be forwarded to the Office of the Commission.

7. If the asset constructed by MSEDCL remains unutilized beyond proposed COD, the Commission will approve the Aggregate Revenue Requirement (ARR) against such asset at depreciated cost from the date the assets actually put to use.

8. The Commission will not allow part capitalization against scheme unless such assets are put to use and benefiting the system.

9. If MSEDCL fails to initiate the work, including tendering process if any, within a period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled.

10. The major scope of the work shall be executed through competitive bidding process only. MSEDCL shall follow the guidelines provide in the Capex Approval Regulations 2022.

11. To ensure that MSEDCL has taken the measures to optimize the project cost and followed the competitive bidding the Commission may carry out third party asset verification including referring to the National Financial Reporting Authority (NFRA) after completion of the work as provided in Regulation 9.2 (16) of the Capex Approval Regulations 2022.

12. MSEDCL shall co-ordinate with GoM for timely release of subsidy component. Further, efforts needs to be made for recovery of dues from Government/Semi-Government/Local authority Departments/agencies/institutes.

13. MSEDCL shall follow up with the PFC for timely releasing of grant. If any grant component is disallowed by PFC on account of MSEDCL's failure to adhere to RDSS Guidelines, then such amount will not be considered for ARR purpose.

Yours faithfully,

(Dr. Rajendra G. Ambekar)
Secretary

Encl: Annexure 'A', Appendix 'A'

Annexure – 'A'

Summary Appraisal of MSEDCL Scheme for

Revamped Distribution Sector Scheme Reforms-Based and Results-Linked.

(Particulars furnished in the Feasibility Report by MSEDCL

1.	**Name of the Scheme**	MSEDCL's Capex scheme for rollout of Revamped Distribution Sector Scheme (Reforms-Based and Results-Linked.)
2.	**Estimated Cost**	Rs. 27,696.78 Crores
	Approved Cost	Rs. 27,696.78 Crores
3.	**ROI/ Cost Benefit**	Due to roll-out of loss reduction works component net impact on retail tariff will be in the range of Rs. 0.003/kWh to Rs.0.062/kWh over lifecycle of project. Large scale roll-out of smart meters will lead to annual savings of ~ Rs. 246.87 Crores in meter readings activity of Non-Ag Consumers. Further ~ Rs. 27.79 Crores annually will be saved on bill printing, distribution and stationery.
4.	**Brief Scope of Work**	**A. Smart Metering:** • Consumer Metering: 2,24,88,866 Consumers (Non-Ag) • DTC Metering: 4,07,507 DTCs • Feeder &Boundary Metering: 27,826 Feeders **B. Loss Reduction:** • Separation of Ag and Non-Ag Feeders: 4,712 Feeders • Arial Bunch (AB) Cable to reduce the theft: 30,332 Km • Upgradation of conductor (33,22,11kV & LT): 19,884 Km • Multi Meter Boxes: 3,98,080 Nos. • Feeder bifurcation (33,22 & 11kV feeders): 9,843 Km • Provision of HVDS (DT and HT line): 5,170 DTCs • Installation of Capacitor to Substations: 2,051 Nos. • IT/OT: Rs. 168 Crores
5.	**Objective /Justification**	i. Improve the quality, reliability and affordability of power supply to consumers through a financially sustainable and operationally efficient Distribution system.



		ii. Reduce the AT&C losses (operational losses due to inefficient power system) up to 13% by FY 2024-25. iii. To reduce the Cost-Revenue Gap (Gap in ACS- ARR) to zero by FY 2024-25. iv. Developing Institutional capabilities for modern DISCOMs.

6.	**Funding Arrangement**	**Source of funds**	**Amount**
		Debt	Rs. 17,103.07 Crores
		Equity	-
		Grants	Rs 10593.71 Crores
		Consumer Contribution	-
7.	**Time Frame/ Phasing of Expenditure**	**FY**	**Phasing of Expenditure in Rs Crores**
		FY 2022-23	Rs.1384.84
		FY 2023-24	Rs.13848.39
		FY 2024-25	Rs.12463.55
			Rs.27696.78

A) <u>Observations / Comments on Feasible Report</u>

1.	**Prudence of Investment / Technical Justification**	The Scheme aims to carry out the works enabling improvement in the quality and reliability of power supply to consumers, by providing conditional financial assistance to DISCOMs to make the sector financially sustainable and operationally efficient.
2.	**Reasonability of Cost Estimate**	The rates are considered by referring to interim Cost date. Proposed capital outlay has been approved by PFC (Nodal Agency).
3.	**Comments on Cost Benefit Analysis**	Demonstrated benefits are justified.
4.	**Discrepancy / Shortcomings Observed**	Queries have been complied & submitted by the MSEDCL
5.	**Remarks / Specific Comments if any**	1. MSEDCL shall endeavor to complete the project in adherence to committed timeline in order to avoid cost and time overrun. 2. MSEDCL shall co-ordinate with GoM for timely release of subsidy component. Further, efforts needs to be made for recovery of dues from Government/Semi-Government/Local authority Departments/agencies/institutes.



Annexure A

Smart Metering works for MSEDCL

Sr. No.	Major Component	Item Particulars	Expected Life cycle unit cost (Rs. per meter)	Quantity (Phase I)	Quantity (Phase II)	Total Quantity	Estimated cost in Rs. Crores
				No.	No	Nos.	
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) +(6)	(8) = (4)x(7)
1	**Consumer Metering**						
1.1	1 Phase Whole Current Smart Consumer Meter		6,000	1,06,96,761	1,06,98,582	2,13,95,343	**12837.21**
1.2	3 Phase Whole Current Smart Consumer Meter		6,000	4,05,430	5,49,753	9,55,183	**573.11**
1.3	3 Phase LT-CT Operated Smart Consumer Meter		6,000	1,16,369	0	1,16,369	**69.82**
1.4	3 Phase CT-PT Operated HT Smart Consumer Meter		6,000	21,971	0	21,971	**13.18**
	Sub-Total			**1,12,40,531**	**1,12,48,335**	**2,24,88,866**	**13,493.32**
2	**DT Metering**	3 Ph LT-CT Operated DT Meter	23,000	4,07,507	0	4,07,507	**937.27**
3	**Feeder Metering**	3 Ph CT-PT Operated feeder Meter	42,000	26,853	0	26,853	**112.78**
4	**Boundary Metering**	3- phase CT/PT operated Boundary meter	42,000	973	0	973	**4.09**
	Total			**1,16,75,864**	**1,12,48,335**	**2,29,24,199**	**14,547.45**
	Total GBS excluding incentive for Phase – I						**2182.12**
	Incentive for Phase – I						**505.82**
	Total GBS including Incentive of Phase – I						**2687.94**



Details of Infrastructure works under Loss Reduction

Sr No.	Major Component	Item Particulars	UoM	Unit cost (Rs. lakh)	Quantity	Estimated cost in Rs. Crores
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) x (6)
1	**Feeder Separation**					
(a)	11 KV Feeder Bay with Gantrystructure		Nos	11.43	4,233	483.77
(b)	11 KV Single circuit Pin type with 55sq.mm AAAC lines on 100x116 mm9 mtr RSJ poles		Kms.	8.17	53,936	4,408.29
(d)	Special DTs		Nos	3.85	4,712	81.31
(e)	11/0.4 kV ,100 kVA Dist. Transformercenters on RSJ , 100 X 116 mm, 11 mtr with Kitkat Dist box.		Nos	3.71	29,252	1,086.29
(f)	HDD for various crossings		Kms.	40.71	103	42.11
(g)	LT Line- 3 ph 4 W. with AAAC 55 sqmm for phase & ACSR Weasel forneutral with PSC Pole 8 Mtr (140 KG)		Kms.	3.88	13,764	533.76
(h)	AB switches		Nos	0.89	4,712	41.81
(i)	Single pole cut points		Nos	0.67	12,744	85.38
(j)	Double pole cut points		Nos	1.02	14,455	147.74
		Sub Total (1)				**7010.46**
2	**HVDS**					
(a)	11 kV Single circuit Pin type with 55sq.mm AAAC lines on 9 mtr PSCpoles		Kms.	6.02	2758.03	166.07
(b)	11 KV ,25 KVA Dist. Transformer centers on 100x116mm, 9 mtrs RSJpoles with MCCB Dist. Box.		Nos	2.47	5170.00	127.57
(c)	Armoured Service Wire (2.5sqmm.) for 1 ph connection		Kms.	1.47	1360.31	20.05
(d)	Single pole cut points		Nos	0.67	652	4.37
(e)	Double pole cut points		Nos	1.02	739	7.55
		Sub Total (2)				**325.61**
3	**Replacement of LT line by AB Cable**					
(a)	AB Cable(70Sq.mm) with alliedmaterial		Kms.	4.94	30331.70	1498.39
(b)	Dismantling & transportation charges		Kms.	0.27	30331.70	83.17
		Sub Total (3)				**1581.56**
4	**Capacitor Bank**					
(a)	Capacitor Bank(APFC) - 1.2 M VAR		Nos	8.71	1617.00	140.76
(b)	Capacitor Bank(APFC) - 2.4MVAR		Nos	11.05	434.00	47.95
		Sub Total (4)				**188.71**
5	**Multimeter Boxes**					
(a)	Multi-meter SMC box (12 meters per box)		Nos	0.0768	398080	305.73
(b)	LT Cable Armoured Aluminum Cable3.5C x 35 sq. mm		LS			
(c)	Installation Charges		Nos			
(c)	Earthing, Fabrication etc.		Nos	0.01723	398080	68.57
(d)	Service Cable (W.P. Wire 2.5 mm2 T/C1100 V Grade) – 1 coil per box		LS	0.01107	398080	44.05

Sr No.	Major Component	Item Particulars	UoM	Unit cost (Rs. lakh)	Quantity	Estimated cost in Rs. Crores
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) x (6)
	Sub Total (5)					**418.35**
6	**Upgradation of Line**					
(a)	11KV (AAAC 55sqmm) on RSJ Poles		Kms.	3.42	1167.30	39.97
(b)	11KV (AAAC 100sqmm) on RSJ Poles		Kms.	5.15	7522.82	387.30
(c)	33 or 22 KV(AAAC 232sqmm) on RSJPoles		Kms.	10.98	6614.69	726.43
(d)	LT line (Ant conductor) on RSJ Poles		Kms.	2.14	4578.82	97.99
	Sub Total (6)					**1251.69**
7	**Feeder Bifurcation**					
(a)	33 KV S/C Line with 100 mm2 AAAC (Suspension type) & RSJ 152 X 152mm 12 mtr. Long.		Kms.	14.16	2294.17	324.76
(b)	11 KV Single circuit Pin type with 100sq.mm AAAC lines on 100x116 mm10 mtr RSJ poles		Kms.	10.50	6821.57	716.44
(c)	22 KV Single circuit Suspension type with 100sq.mm AAAC lines on 152x152mm 11 mtr RSJ poles		Kms.	14.30	727.49	104.05
(d)	22KV Feeder Bay		Nos	14.52	25.00	3.63
(e)	11 KV Feeder Bay		Nos	11.44	48.00	5.49
(f)	Single pole cut points		Nos	0.67	2326.00	15.58
(g)	Double pole cut points		Nos	1.02	2638.00	26.96
(h)	11 KV Line Capacitor		Nos	1.12	402.00	4.50
	Sub Total (7)					**1201.42**
8	**Covered Conductor (HT AB cable)**		**Kms.**	18	333.00	**61.19**
9	**IT / OT Works**		**Nos.**			
(a)	**ERP Up-gradation**		Nos.			
	I. Upgradation from ECC EHP 8 to S/4 on HANA for all modules **II.** e-Bidding (SRM) SAP Treasury and Risk Module		LS	55.12	LS	55.12
	(iv) In-Memory Computation for Business Intelligence Warehousing (BW)		LS	19.20	LS	19.20
(b)	**Upgradation of Other IT modulesand Hardware (cloud)**					
	(ii) Upgradation of CRM, EA, WSS, NC,DMS,		LS	5.98	LS	5.98
	(iii) Replacement of servers in systemand upgradation of storage		LS	14.66	LS	14.66
(c)	**New Modules/application procurement / development**					
	(i) Load Forecasting and associatedtools		LS	30.00	LS	30.03
	(ii) SDWAN implementation		LS	30.00	LS	30.42
(d)	**Licenses Cost licenses for the accomplishment of IT/OT worksunder RDSS**					
	(i) Licences of time series database forIT / OT		LS	10.00	LS	10.00

Sr No.	Major Component	Item Particulars	UoM	Unit cost (Rs. lakh)	Quantity	Estimated cost in Rs. Crores
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) x (6)
	solutions					
	(ii) Licences for MS-SQL, OracleEnterprise Edition		LS	3.00	LS	3.00
	Sub Total (9)					**168.41**
10	**Cyclone Resilient Network under NCRMP works**					
(a)	HT UG Cabling (3Cx300 sqmm)		CKm	23.21	1,376	319.33
(b)	RMU (3 Way or 5 Way)		Nos	11.20	459	51.42
(c)	LT UG Cabling		CKm	5.80	7,330	425.05
(d)	AB Cabling		CKm	5.91	162	9.57
(e)	LT Feeder Pillar /LTDB		Nos.	0.30	13,336	39.46
(f)	SMC Multimeter boxes(12 Meters perbox)		Nos.	0.11	21,438	22.53
(g)	New Switching-Stations		Nos	254.7	3	7.64
(h)	New/Augmentation of DTCs		Nos	3.89	232	9.03
	Sub Total (11)					**884.03**
11	**Power supply arrangements for Ray Nagar Colony,Solapur under PMAY**		LS	LS	LS	**57.90**
	Total Project Cost				**13149.32**	
	Total GBS				**7889.59**	



महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/Capex/MSEDCL/2023-24/ 101 **Date: 5 February 2024**

To,

The Chairman & Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
Prakashganga, Plot No. C-19, Bandra – Kurla Complex,
Bandra (East), Mumbai- 400 051.

Subject: MSEDCL's Capex scheme for Reactive Power Management by Installing Capacitor Banks at various 33/22/11KV substations through PSDF (Power System Development Fund) Funding. (Total Project Outlay- Rs.126.18 Crores)

Ref:

1. MSEDCL Email dated 21.11.2022.
2. MERC Email- Referring back DPR dated 15.01.2023.
3. MSEDCL Email dated 02.02.2022.
4. MSEDCL Letter Ref No. Director (Projects)/No.21397 dated 14.07.2023.
5. MERC Email- Data gaps dated 09.08.2023.
6. MSEDCL letter Ref CE/Projects/PSDF/RPM/No.28885 dated 22.09.2023.
7. Meeting dated 08.01.2023.
8. MERC Email-Data gaps (Set-II) dated 17.01.2023.
9. MSEDCL Email dated 18.01.2023.

Sir,

This has reference to Capex Scheme submitted by MSEDCL vide letter under reference above and correspondence thereof.

1. The Scheme for 'Installing Capacitor Banks at various 33/22/11KV substations through PSDF (Power System Development Fund) Funding amounting to **Rs.126.18 Crore** has been evaluated with reference to the MERC Capex Approval Regulations 2022. I am directed to convey in-principle clearance of the Scheme. The particulars of the Scheme as approved in -principle are outlined in **Annexure 'A'** and the breakup of the project cost is given in **Appendix 'A'**.

2. Please note that this in-principle clearance should not be construed as final approval for the ARR purpose. The Scheme will be open for scrutiny during the tariff determination process / ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc. ex post after implementation of the Scheme. MSEDCL shall submit the status of implementation of the Scheme with cost incurred till date, likely completion date etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

3. MSEDCL should submit six monthly progress reports as per the provisions of the Capex Approval Regulations 2022 giving status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

4. Assets created after execution of the Scheme should be maintained separately in the Asset Register.

5. MSEDCL is directed to endeavor to complete project within stipulated time frame. The increase in cost because of the delay in the execution of project will not be entertained in future. Also, the Commission will not grant the revised approval to the scheme. Further, the Commission will not allow capital cost, O&M cost and IDC against unutilized assets beyond the proposed date of COD till the asset is put to use.

6. Immediately after completion / commissioning of the Scheme, MSEDCL should communicate to the Commission the date of completion of the Scheme, item-wise actual cost incurred as per Appendix 'A', escalation in cost, if any, with reasons, the scope, and objectives of the Scheme and to what extent they have been achieved, etc. so as to facilitate a comparison between the in-principle clearance and the actual incurred cost.

7. If the asset constructed by MSEDCL remains unutilized beyond proposed COD, the Commission will approve the Aggregate Revenue Requirement (ARR) against such asset at depreciated cost from the date the assets actually put to use.

8. The Commission will not allow part capitalization against scheme unless such assets are put to use and benefiting the system.

9. If MSEDCL fails to initiate the work, including tendering process if any, within a period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled.

10. The major scope of the work shall be executed through competitive bidding process only. MSEDCL shall follow the guidelines provide in the Capex Approval Regulations 2022.

11. To ensure that MSEDCL has taken the measures to optimise the project cost and followed the competitive bidding the Commission may carry out third party asset verification including referring to the National Financial Reporting Authority (NFRA) after completion of the work as provided in Regulation 9.2 (16) of the Capex Approval Regulations 2022.

12. MSEDCL to follow up with the NLDC for releasing grant of remaining 2nd and 3rd installation of PSDF fund.

Yours faithfully,

(Dr. Rajendra G. Ambekar)

Secretary, MERC

Encl: Annexure 'A', Appendix 'A'

Annexure – 'A'

Summary Appraisal of MSEDCL Scheme for

Installation of Capacitor Banks at various 33/22/11KV substations through PSDF

A) Particulars furnished in the Feasibility Report by MSEDCL

<table>
<tr><td>1.</td><td>Name of the Scheme</td><td>Reactive Power Management by Installing Capacitor Banks at various 33/22/11KV substations through PSDF (Power System Development Fund) Funding</td></tr>
<tr><td rowspan="2">2.</td><td>Estimated Cost</td><td>Rs. 132.62 Crores</td></tr>
<tr><td>Approved Cost</td><td>Rs. 126.18 Crores</td></tr>
<tr><td>3.</td><td>ROI/ Cost Benefit</td><td>To improve voltage profile in the grid by Reactive power Management by installing capacitors banks (Automatic Power Factor Correction)</td></tr>
<tr><td>4.</td><td>Brief Scope of Work</td><td>Installation of 657 nos. of capacitor banks (APFC) of 1.2 and 2.4 MVAr at 492 substations</td></tr>
<tr><td>5.</td><td>Objective /Justification</td><td>e) Reactive power compensation at load.
f) Improve power factor of system.
g) Improvement in power quality & reliability.
h) To improve voltage profile etc.</td></tr>
<tr><td>6.</td><td>Funding Arrangement</td><td>
<table>
<tr><th>Source of funds</th><th>Amount</th><th>Share</th></tr>
<tr><td>Debt</td><td>Rs 13.26 Crs</td><td>10% of the sanctioned cost</td></tr>
<tr><td>Equity</td><td>-</td><td>-</td></tr>
<tr><td>Grants</td><td>Rs 119.36Crs</td><td>90% of the sanctioned cost</td></tr>
<tr><td>Consumer Contribution</td><td>-</td><td>-</td></tr>
</table>
</td></tr>
<tr><td>7.</td><td>Time Frame/ Phasing of Expenditure</td><td>
<table>
<tr><th>Sr.No.</th><th>Year</th><th>Capital Expenditure (Rs. Cr.)</th></tr>
<tr><td>1</td><td>2023-24</td><td>Rs. 95.28 Crores</td></tr>
<tr><td>2</td><td>2024-25</td><td>Rs. 30.90 Crores</td></tr>
</table>
</td></tr>
</table>



B) Observations / Comments on Feasible Report

1.	**Prudence of Investment / Technical Justification**	a. Rural area most of the load fed by distribution substations are agricultural dominated which is highly Inductive load causing high reactive energy flow leading to poor power factor at 11 kV feeders and further at 33 kV and above. b. This causes heavy voltage drop and line losses, thereby over loading of distribution network and upstream transmission work and generating unit's c. This inductive (lag) reactive energy can be compensated by providing Capacitor Banks at strategic locations at load centers. d. Hence, the proposal has been prepared for provision of Auto switched capacitor banks at various 33/22/11kV substations in MSEDCL. This scheme is also technically feasible as: 1. It will reduce the system distribution losses. 2. The supply voltage at consumer premises will improve. 3. Distribution system will be relieved from overloading. 4. The equivalent MW capacity will be available additional infrastructure may be avoided.
2.	**Reasonability of Cost Estimate**	The rates are considered by referring to FY 2019-20 Cost date.
3.	**Comments on Cost Benefit Analysis**	Revised payback period for this scheme is 5.23 years
4.	**Discrepancy / Shortcomings Observed**	Queries have been complied & submitted by the MSEDCL
5.	**Remarks / Specific Comments if any**	MSEDCL shall follow up with NLDC for releasing of 2nd and 3rd installment of Grant.

Appendix A				
Approved Cost of MSEDCL Capcitor Project				
Sr. no.	**Description of Material**	**Unit Price**	**Apprvd Qty**	**Amt. in Lakhs**
1	11 KV Station Type 1.2 MVAR Capacitor Bank with 0.2 % Reactor for rural area (APFC)	18.90	610	11527.75
2	11 KV Station Type 2.4 MVAR Capacitor Bank with 0.2 % Reactor for rural area (APFC)	22.11	42	928.57
3	22 kV Station Type 1.2 MVAR APFC Capacitor Bank with 0.2% Reactor	30.62	1	30.62
4	22 kV Station Type 2.4 MVAR APFC Capacitor Bank with 0.2% Reactor	32.79	4	131.16
	Total Cost	**104.41**		**12618.10**



P-26368/2019.

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2019-20/115

Date: 18 April, 2019

To,
The Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: **Revised** In-principle clearance for MSEDCL's Capital Expenditure for Pradhan Mantri Sahaj Bijli har Ghar Yojana " Saubhagya" Scheme launched by Govt. of India for FY 2018-19 (for Rural and Urban Grid amounting to **Rs. 657.01 Crore** to be funded in 60% (GoI), 10% (State/Discom) and 30% (Loan)].

Ref: - 1) The Commission approval to Rural (Grid) DPR of Rs 649.91 Cr. vide letter dated 26 February, 2019.
2) Revised proposal submitted by MSEDCL on 11 March, 2019 for Rs 701.30 Cr.

Sir,

This has reference to your submitted Revised DPR for Pradhan Mantri Sahaj Bijli har Ghar Yojana "Saubhagya" Scheme for FY 2018-19 for in-principle approval of the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

1. I am directed to convey the 'in-principle' clearance of the scheme. The particulars of the scheme as approved are outlined in the Annexure "A".
2. With this approval, earlier in-principle approval dated 26 February, 2019 deemed to be cancelled.
3. Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the Scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.
4. MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

OFFICE OF CMD, MSEDCL			
DIR-FIN	DIR-OP	DIR-PROJ	DIR-COM
ED-COM	ED-DIST	RA	ED-ITBR
ED-PROJ	ED-HR	SE	CLA
FOR NECESSARY ACTION PLEASE			

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, कुलाबा, मुंबई - ४०० ००५.
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Colaba, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 Fax : 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in Website : www.merc.gov.in / www.mercindia.org.in

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5. Assets created after execution of the Scheme should be maintained separately in the Asset Register.

6. Immediately after completion/commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

7. MSEDCL shall endeavor to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.

8. Work shall be executed through transparent competitive bidding process.

9. This approval is subject to grant of 60%. from the GoI under Saubhagya Sacheme. MSEDCL shall follow up with the GoI for release of grant. MSEDCL should also strive to availed additional grant of 15% which is link to completion of project within stipulated timelines. The earlier in-principle approval dated 26 February, 2019 deemed to be cancelled.

Yours faithfully,

(Dr. Rajendra Ambekar)
Executive Director, MERC

Encl: Annexure "A"

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Annexure – A

A) Feasibility Report for Capital Investment Scheme

<table>
<tr><th>SN</th><th>Particulars</th><th>Details</th></tr>
<tr><td>1</td><td>Title (Name of Scheme)</td><td>"MSEDCL's Capital Expenditure DPR for Urban and Rural (Grid) of Pradhan Mantri Sahaj Bijli Har Ghar Yojana " Saubhagya" Scheme launched by Govt. of India for FY 2018-19".</td></tr>
<tr><td>2</td><td>Revised Estimated Cost</td><td>Rs. 701.303 Cr.</td></tr>
<tr><td>3</td><td>Revised Approved Cost</td><td>
<table>
<tr><th>Particular</th><th>Amount (In Rs. Cr.)</th></tr>
<tr><td>Re-casted DPR for Rural Household</td><td>280.99</td></tr>
<tr><td>Additional infrastructure for Rural households</td><td>368.92</td></tr>
<tr><td>Re-casted DPR for Urban Household</td><td>7.1</td></tr>
<tr><td>Total Amount</td><td>657.01</td></tr>
</table>
</td></tr>
<tr><td>3</td><td>Revised Brief Scope of work</td><td>
<table>
<tr><th></th><th>Re-casted DPR for Rural Household</th><th>Additional infrastructure for Rural households</th><th>Re-casted DPR for Urban Household</th></tr>
<tr><td>No. of DRSs (District wise)</td><td>33</td><td>18</td><td>33</td></tr>
<tr><td>Villages/Town Covered (in Nos)</td><td>27771</td><td>19210</td><td>229</td></tr>
<tr><td>Habitation Covered (in Nos)</td><td>42507</td><td>29652</td><td>-</td></tr>
<tr><td>Households Covered (in Nos)</td><td>541584</td><td>-</td><td>15772</td></tr>
<tr><td>11 KV Line (kms)</td><td>0.12</td><td>1036.53</td><td>-</td></tr>
<tr><td>LT Line (kms)</td><td>2670.99</td><td>4840.56</td><td>57.29</td></tr>
<tr><td>DTCs (Nos)</td><td>1 (Total - 63KVA)</td><td>2204 (Total - 76418 KVA)</td><td>-</td></tr>
</table>
</td></tr>
<tr><td>4</td><td>Objective / Justification</td><td>To achieve household electrification by providing last mile connectivity and electricity connections to all remaining un-electrified households in rural as well as urban areas.</td></tr>
<tr><td>5</td><td>Funding Arrangement</td><td>Grant share of total Sanctioned amount for Govt of India, State/ Discom and Load (Fls/banks) are 60%, 10% and 30% respectively. Additional grant (15% for Maharashtra State) under the scheme will be released subject to achievement of 100% household electrification of all willing households by 31st December, 2018.</td></tr>
<tr><td>6</td><td>Revised Time frame/ phasing out of expenditure</td><td>
<table>
<tr><th>Particulars</th><th>FY 2018-19</th></tr>
<tr><td>Capital Expenditure</td><td>Rs. 657.01 Cr.</td></tr>
<tr><td>Capitalization</td><td>Rs. 657.01 Cr.</td></tr>
</table>
</td></tr>
</table>

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33/4/1

MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Colaba, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 ◆ Fax : 022-2216 3976 ◆ Website : www.mercindia.org.in
E-mail : mercindia@mercindia.org.in

MERC

I. No. Dir.(Proj.)/33
Dated 6-1-2011.

MD/D/21
5/1/12

MERC/CAPEX/20112012/ 024.26

December 30, 2011

CE/APDRP/ 53
6 JAN 2012
SE
SE
EEI
EEII (DSPC) EE(2)
UDC
9/1/2012

The Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg,
Bandra (E),
Mumbai 400 051.

Sub: **In Principle clearance for Implementation of SCADA / DMS in 8 Towns under R-APDRP (Part-A) in MSEDCL area. (Scheme Code: MSEDCL/FY12/ 03)**

Ref: **1. CE/APDRP/24320 dated 04.08.2011.**

Sir,

This has reference to the Detailed Project Report (DPR) for the captioned scheme submitted by MSEDCL vide letter under reference.

1. The scheme has been evaluated with reference to the guidelines circulated by the Commission on 9th February 2005. I am directed to convey the in-principle approval of this scheme for cost of Rs 161.88 Crs. **subject to following:**

C.E.(APDRP)

"MSEDCL should complete the project within 3 years from the date of sanction of the R-APDRP scheme by Govt. of India and avail the benefit of funding the project though grant from Govt. of India."

2. The particulars of the scheme as approved in-principle are outlined in the Annexure A and the break-up of the project cost is given in Appendix A.

Dir(Proj), Pl
05.01

3. Please note that this in-principle clearance should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process / ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc. ex post after implementation of the scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date etc. along with their ARR petition or during the tariff determination process at the appropriate time.

3. MSEDCL should submit six-monthly report giving the status of implementation of the scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the scheme.

4. Assets created after execution of the scheme should be maintained separately in the Asset register.

MERC/CAPEX/20112012/ 02426 December 30, 2011

5. Immediately after completion of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc so as to facilitate a comparison between the in-principle clearance and the actual.

Yours Faithfully,

(Kuldip N. Khawarey)
Secretary, MERC

Encl: Annexure A, Appendix A.

Cc to:

The Chief Engineer (APDRP)
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg,
Bandra (E),
Mumbai 400 051.

Prayas Energy Group,
Amrita Clinic, Athawale Corner,
Lakdipool-Karve Road Junction,
Deccan Gymkhana, Karve Road,
Pune 411 004

The President,
Mumbai Grahak Panchayat,
Grahak Bhavan, Sant Dynyaneshwar Marg,
Behind Cooper Hospital,
Vile Parle (West),
Mumbai 400 056

The General Secretary,
Thane Belapur Industries Association,
Plot No. P-14, MIDC,
Rabale Village, PO Ghansoli,
Navi Mumbai 400 701

The President,
Vidarbha Industries Association,
1st Floor, Udyog Bhawan,
Civil Lines,
Nagpur 440 001

MERC/CAPEX/20112012/ 0 2426 December 30, 2011

Annexure A

Brief particulars of MSEDCL's Scheme for Implementation of SCADA / DMS in 8 Towns under R-APDRP (Part-A) in MSEDCL area.

As approved in-principle

(Based on particulars furnished in the DPR by MSEDCL)

1) a) Name of Scheme	Implementation of SCADA & DMS in 8 Towns under R-APDRP (Part-A) in MSEDCL area.
b) Scheme Code	MSEDCL/FY12/ 03
2) Estimated Cost	Rs 161.88 Cr
3) ROI/Cost benefits	No Monetary benefits envisaged.
4) Brief Scope of work	**Particulars** 1. Establishment of SCADA/DMS control center in Eight Specified Towns. 2. Integration with IT System being implemented under R-APDRP Part A. 3. Establishment of Data Recovery center at Malegaon. 4. Supply, installation, integration and commissioning of RTUs at all 66/33/22/11 kV S/s. 5. FRTUs at locations of RMU on 11 kV Distribution Networks. 6. SCADA / DMS system for control and supervision of 33/11 kV S/stn. 33 kV & 11 kV distribution network and SCADA information storage and retrieval ISR functions. 7. Distribution Management System with following main functions. a. Network Connectivity Analysis. b. Load Flow Analysis c. State estimation d. Voltage VAR control e. Load Shed Application f. Fault Management and System Restoration

MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

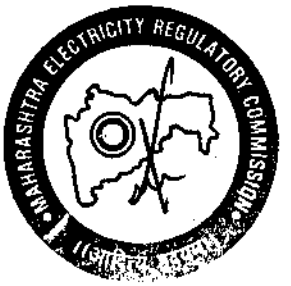
<table>
<tr><td></td><td>g. Loss Minimization via Feeder Reconfiguration
h. Load Balancing via fFeeder Reconfiguration
i. Operation Monitor
j. Distribution Load Forecasting</td></tr>
<tr><td>5) Objectives / Justification</td><td>• Renovation, modernization and strengthening of Distribution network to reduce the AT&C losses to 15 %.</td></tr>
<tr><td>6) Funding arrangement</td><td><table><tr><th>Particulars</th><th>Rs Crs</th></tr><tr><td>100% Loan from GoI through PFC</td><td>161.88</td></tr><tr><td>Total</td><td></td></tr></table></td></tr>
<tr><td>7) Time frame/ phasing out of expenditure</td><td>Scheme will be completed by March- 2014<table><tr><th>Year</th><th>Rs Crs</th></tr><tr><td>2011-12</td><td>45.40</td></tr><tr><td>2012-13</td><td>86.23</td></tr><tr><td>2013-14</td><td>30.25</td></tr><tr><td>Total</td><td>161.88</td></tr></table></td></tr>
</table>



MERC/CAPEX/20112012/ 02426 December 30, 2011

Appendix A
MSEDCL's Scheme for
Implementation of SCADA / DMS in 8 cities
Under R-APDRP (Part-A) in MSEDCL area.

Sr. No.	Name of Town	Total Cost (Rs. Cr.)
1	Amravati	11.07
2	Kolhapur	12.34
3	Solapur	12.16
4	Sangli	11.06
5	Pune	50.11
6	Nashik	20.53
7	Malegaon	8.03
8	Greater Mumbai	36.58
	Total Cost	**161.88**



महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2021-22/052 **Date:** 15 **February, 2022**

To,
The Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: MSEDCL's Capex scheme for System Strengthening and conversion of existing overhead network to Underground network in in identified areas of Nagpur (R) and Nagpur (U) Circles.

Ref:

1. MSEDCL Letter No. CE/Projects/OH to UG DPR/009829 Dated 12.05.2021.
2. MERC Letter No. MERC/CAPEX/2021-22/137 dated 14.07.2021.
3. MSEDCL Letter No. CE/Projects/OH to UG DPR/019431 dated 23.08.2021.
4. MERC Letter No. MERC/CAPEX/2021-22/405 dated 09.09.2021.
5. MSEDCL Letter No. CE/Projects/OH to UG DPR/028077 Dated 18.11.2021.
6. MSEDCL Letter No. CE/Projects/OH to UG DPR/028440 Dated 23.11.2021.
7. MERC Email Dated 21.12.2021
8. MSEDCL Letter No. CE/Projects/OH to UG DPR/31191 Dated 23.12.2021.
9. MERC Email dated 27.12.2021
10. MSEDCL Letter No. CE/Projects/OH to UG DPR/414 dated 06.01.2022.
11. MSEDCL Letter No. CE/Projects/OH to UG DPR/414 dated 06.01.2022.
12. MSEDCL Letter No. CE/Projects/OH to UG DPR/877 dated 12.01.2022.
13. MSEDCL Email dated 14.01.2022
14. MERC Email dated 18.01.2022.
15. MSEDCL letter No. CE/Projects/OH to UG DPR/2485 dated 01.02.2022.

Sir,

1 This has reference to your submitted DPR, for in principle approval of the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February 2005.

2 I am directed to convey the 'in-principle' clearance of the scheme for the cost of **Rs. 432.84 Crores**. The particulars of the scheme as approved are outlined in the attached Appendix 'A' and Annexure 'A'.

3 Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved, after implementation of the scheme. MSEDCL will be required to

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, मुंबई - ४०० ००५.
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 **Fax** : 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in **Website** : www.merc.gov.in / www.mercindia.org.in

submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition at the appropriate time.

4 MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the scheme.

5 Assets created after execution of the scheme should be maintained separately in the Asset Register.

6 Immediately after completion/commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

7 MSEDCL shall endeavor to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.

8 Major scope of work shall be executed through competitive bidding process only.

9 MSEDCL shall keep accounts of scrap generated separately and the proceeds from its sale shall be shown as non-tariff income.

10 MSEDCL shall consider benchmark payback period of 6 years for any proposal of OH to UG conversion and only those schemes meeting such criteria should be prioritized for implementation.

11 Rationale for earmarking the least cost option between AB cables and UG cables has not been submitted. The least cost option is extremely important due to the cost difference between the two options. Hence, MSEDCL is directed to submit a study report on choosing between the two options after factoring all the options within a period of 6 months. The said study report will be referred to for all the future similar projects.

12 Works proposed in this scheme can get covered under Part A: Component II of Revamped Distribution Sector Scheme (RDSS). Under RDSS, grant of 60% of approved Distribution Infrastructure cost is available and only balance 40% to be raised through loan. Thus, inclusion of such proposed works in RDSS will not only relieve MSEDCL from loan liabilities but also reduce burden on the GoM to provide 30% equity, beside reducing impact on consumer Tariff. However, as GoM has already released Rs 25 Crore towards equity for Nagpur District Scheme, MSEDCL needs to implement this scheme in phases as follows:

a. The first phase shall be based on the actual funding released by GoM (Rs 25 Crs or the actual amount given by GoM) in the proportion considering 30:70 ratio of equity: debt for project funding.

b. MSEDCL shall immediately take up the balance scheme for inclusion in the RDSS. MSEDCL shall keep GoM funding option for further phases on standby and only if they do not succeed in covering the scheme in RDSS or there is a delay beyond a reasonable time, GoM funds could be utilised for completing the scheme in 2nd phase and beyond.

c. In case MSEDCL fails to fund the scheme through RDSS and reduce the impact on ARR, then instead of socializing such impact on all consumers of MSEDCL, such incremental impact needs to be partially recovered from consumers who are benefitted from the scheme. In such case, MSEDCL shall submit such proposal during upcoming MTR proceeding

13 On similar lines, in case MSEDCL wishes to undertake such OH to UG conversion projects in other area, then policy for the same and proposal for recovering incremental impact from consumer in that area shall also be covered in upcoming MTR proceeding.

14 MSEDCL shall ensure achieving following performance targets in project area:

Particulars (in %)	FY 21-22	FY 22-23	FY 23-24	FY 24-25
Billing Efficiency	86.00	87.65	88.51	88.85
Distribution Loss	14.00	12.35	11.49	11.15
Collection Efficiency	94.00	94.50	95.00	96.00
AT&C Loss	19.16	17.17	15.92	14.70

In case above performance targets are not achieved post execution of this scheme, then subject to the justification/submission by MSEDCL, the Commission may partially disallow the expenses during the MTR/MYT proceedings.

15 The said approval is given subject to the detail scrutiny at the time of MTR/MYT. The Commission cautions MSEDCL that the project roll out be made to ensure timely completion of scheme. Increase in the cost due to delay may result in disallowance, subject to due diligence.

Yours faithfully,

(Dr. Rajendra G. Ambekar)
Executive Director

Encl: Appendix 'A' and Annexure 'A'

Appendix A

Name of the scheme	MSEDCL's Capex scheme for System Strengthening and conversion of existing overhead network to Underground network in in identified areas of Nagpur (R) and Nagpur (U) Circles
Estimated cost proposed by MSEDCL	Rs. 432.84 Crores
In-principle approval accorded	Rs. 432.84 Crores
Cost benefit of proposed Scheme	• Additional Sales of Energy (MUs)- **221.74** • Reduction in interruptions (MUs)- **10.84** • Loss reduction (MUs)-**12.87**
Major Scope of the works	Substation New GIS 33/11 KV 2 x 10 MVA-2.00 Nos Substation New GIS 33/11 KV 1 x 10 MVA-7.00 Nos Substation New GIS 33/11 KV 2 x 5 MVA- 1.00 No Additional Power Transformer 1 x 10 MVA-3.00 Nos 33kV Underground Cable-180.30 Km Conversion of 11KV 3C X 300 mm2 XLPE Underground Cable- 83 Km DTC New 100 kVA- 73.00 Nos DTC New 200 kVA- 205.00 Nos
Objectives/Justification	• Strengthening and augmentation of distribution networks. • Conversion of Distribution Network from overhead to underground. • Reorientation of network to make system to increase redundancy • Effective load management by balancing and sharing of load from overloaded distribution elements. • Introducing Hazardous and accident free Distribution System. • Deep Approach to congested and theft prone area with demographical constraints by introducing underground and Air Bunched Cable network. • Reduction in power theft / pilferage due to introduction of Air Bunched cables and underground system. • Reduction in Technical losses and loss due to theft as per trajectory of MSEDCL
Funding arrangement	- GoM has committed funding to proposed project by proving 30% of project cost in terms of equity placement. - Whereas 70% of project cost will be arranged by MSEDCL through financial institutions in terms of loan. - MSEDCL shall take efforts to include scope of this scheme under RDSS scheme of the Central Government for taking benefit of 60% grant available under that scheme.
Time frame/phasing out of expenditure	FY 2021-22= 30% FY 2022-23= 40% FY 2023-24= 30%

Observations / Comments on Feasibility Report

1.	Prudence of Investment /Technical Justification	MSEDCL's Capex scheme for System Strengthening and conversion of existing overhead network to Underground network in in identified areas of Nagpur (R) and Nagpur (U) Circles
2.	Reasonability of Cost Estimate	Cost estimates are based on Cost Data for FY 19-20
3.	Comments on Cost Benefit Analysis	• Additional Sales of Energy (MUs)- **221.74** • Reduction in interruptions (MUs)- **10.84** • Loss reduction (MUs)-**12.87**
4.	Discrepancy/Shortcomings Observed	MSEDCL proposes to sign MOU agreement with Local Bodies/ Authorities for road reinstatement works and the same will be done by MSEDCL by paying only supervision charges. MSEDCL has not furnished any the documentary evidence for HDD Bore Works.
5.	Remarks/Specific Comments, if any	1 Major scope of work shall be executed through competitive bidding process only. 2 MSEDCL shall keep accounts of scrap generated separately and be shown as non-tariff income.

Annexure A- Cost Estimate							
Sr.No.	Particulars	Unit cost (Rs Lakhs)	Unit	Nagpur Urban Circle		Nagpur Rural Circle	
				Qty.	Amount	Qty.	Amount
A.	CAPITAL WORKS						
1	1 x 10 MVA Power Transformer	138.321	Nos	3.00	414.96	-	-
2	33 kV feeder bay	12.888	Nos	1.00	12.89	-	-
3	33 kV feeder bay with Gantry Structure & PT	14.858	Nos	1.00	14.86	-	-
4	Suspension type with 100 Sq. mm AAAC conductor on 152 X 152 mm 12 mtr RSJ	12.255	km	2.50	30.64	-	-
5	33kV, 3 core X 300 sqmm XLPE Underground Cable	35.158	km	165.80	5,829.15	5.50	193.37
6	33kV, 3 core X 300 sqmm XLPE Underground Cable for Railway line crossing for 60 mtr span with isolator on DP structure with both side isolator	12.250	Nos	1.00	12.25	-	-
7	33kV, RIVER Crossing with 100sqmm conductor on 152 X 152	2.579	Nos	1.00	2.58	-	-
8	Douple pole structure (cut point) of- 33 kv line using 11 m long	1.190	Nos	36.00	42.84	-	-
9	3 core X 300 sqmm XLPE Underground Cable for Railway line	10.050	Nos	-	-	2.00	20.10
10	11kV, Pin type with 100 Sq. mm AAAC lines on 152 X 152 mm	11.307	km	-	-	2.00	22.61
11	11kV, Pin type with 100 Sq. mm AAAC lines on 100 X 116 mm	9.028	km	3.00	27.08	-	-
12	11kV, 3 core X 300 sqmm XLPE Underground Cable	24.017	km	164.61	3,953.38	-	-
13	11kV, 3 core X 185 sqmm XLPE Underground Cable	18.255	km	4.20	76.67	10.00	182.55
14	11kV, 3 core X 95 sqmm XLPE Underground Cable	13.580	km	24.50	332.72	-	-
15	Conversion of 11 kV line by 3 core 185 sqmm Cable	18.255	km	-	-	42.00	766.70
16	Douple pole structure(cut point) of- 11 kv line using11 m long RSJ	1.137	Nos	4.00	4.55	6.00	6.82
17	Single pole cut point structure for 11kv line on RSJ 9 m pole	0.432	Nos	-	-	6.00	2.59
18	Pin type with 100 Sq. mm AAAC lines on 100 X 116 mm 11 mtr	9.368	km	6.00	56.21	-	-
19	100 kVA Dist. Transformer centers on RSJ 9 mtr 100x116 poles	5.022	Nos	-	-	25.00	125.56
20	200 kVA Dist. Transformer centers on100x116mm, 9 mtr RSJ	7.069	Nos	-	-	5.00	35.35
21	100 kVA Dist. Transformer centers on 9mtr RSJ poles with MCCB	3.301	Nos	-	-	8.00	26.41
22	200 kVA Dist. Transformer centers on100x116mm, 9 mtr RSJ	5.119	Nos	-	-	5.00	25.59
23	200 kVA Dist. Transformer centers on 100x116mm, 11 mtr RSJ	5.188	Nos	150.00	778.15	-	-
24	100 KVA Dist. Transformer centers on 11 mtr RSJ poles with	3.372	Nos	40.00	134.89	-	-
25	63 kVA to 100 kVA	2.346	Nos	-	-	17.00	39.88
26	100 kVA to 200 kVA	4.093	Nos	150.00	613.99	18.00	73.68
27	100 KVA to 315 KVA	9.250	Nos	-	-	3.00	27.75
28	3.5 X 120 sqmm XLPE Underground Cable	6.562	km	21.00	137.81	-	-
29	3.5 X 185 sqmm XLPE Underground Cable	9.417	km	-	-	14.00	131.84
30	3.5 X 300 sqmm XLPE UG Cable	13.356	km	15.50	207.02	5.00	66.78
31	3.5 X 240 sqmm XLPE UG Cable	11.668	km	-	-	39.00	455.06
32	3 1/2C X 16 Sq mm Underground LT PVC Armoured Cable	2.097	km	-	-	4.00	8.39
33	3 1/2C X 35 Sq mm Underground LT PVC Armoured Cable	2.758	km	-	-	12.00	33.10
34	3 1/2C X 50 Sq mm Underground LT PVC Armoured Cable	3.350	km	-	-	11.50	38.53
35	3 phase 5 wire with AAC AAAC 55 sqmm conductor for phase and ACSR Weasel for neutral using RSJ pole 125 x 75 mm 9 mtr.	4.984	km	30.00	149.53	-	-
36	Supply erection ,testing & Commissioning of LT 6 way F.P.	0.587	Nos	224.00	131.57	25.00	14.68
37	Supply erection ,testing & Commissioning of LT 8 way F.P.	0.745	Nos	-	-	-	-
38	Supply erection ,testing & Commissioning of LT 4 way F.P.	0.478	Nos	289.00	138.26	467.00	223.42
39	Supply erection ,testing & Commissioning of LT Mini F.P.	0.233	Nos	1,470.00	342.34	877.00	204.24
40	33 kV OH line by 3 C , 300 Sqmm XLPE UG Cable	36.522	km	17.20	628.18	-	-
41	Conversion of OH to UG 11 kV line 300 sqmm	24.281	km	162.60	3,948.02	-	-
42	Conversion of OH to UG 11 kV line 185 sqmm	18.412	km	2.00	36.82	-	-
43	Conversion of OH to UG 11 kV line 95 sqmm	13.708	km	1.00	13.71	31.00	424.94
44	Conversion of OH to UG LT line 300 sqmm	13.356	km	37.76	504.33	-	-
45	Conversion of OH to UG LT line 240 sqmm	11.668	km	13.05	152.27	-	-
46	Conversion of OH to UG LT line 185 sqmm	9.267	km	2.00	18.53	30.00	278.00
47	LT line by3.5 CX 16 sqmm XLPE Cable	2.097	km	-	-	6.00	12.58
48	Battery with Battery Charger	1.160	Nos	-	-	1.00	1.16
49	Replacement of existing Dist. Box for 100 KVA Dist. Transformer	0.248	Nos	-	-	41.00	10.17
50	Replacement of existing Dist. Box for 200KVA Dist. Transformer	0.449	Nos	-	-	19.00	8.54
51	LT. poles RSJ 125mmx70mm 9mtr	0.155	Nos	-	-	864.00	133.60
52	Replacement of RMU (SF6 Type) with 2 Isolator + 2 Breaker	9.374	Nos	122.00	1,143.58	-	-
53	A.B.Switch 11 Kv	0.234	Nos	-	-	20.00	4.69
54	Item Code No. 7004 : GIS 33/11 KV 2 x 5 MVA (Other Cities)	344.610	Nos	1.00	344.61	-	-
55	Item Code No. 7005 : GIS 33/11 KV 1 x 10 MVA (for cities Amravati, Nagpur, Pune, Bhandup, Kalyan & Nashik)	387.344	Nos	3.00	1,162.03	-	-
56	Item Code No. 7007 : GIS 33/11 KV 2 x 10 MVA(for cities Amravati, Nagpur, Pune, Bhandup, Kalyan & Nashik)	568.880	Nos	2.00	1,137.76	-	-
57	Item Code No. 7005-R : GIS 33/11 KV 1 x 10 MVA (33KV Side Only)	214.514	Nos	4.00	858.06	-	-



Sr.No.	Particulars	Unit cost (Rs Lakhs)	Unit	Nagpur Urban Circle		Nagpur Rural Circle	
				Qty.	Amount	Qty.	Amount
58	DP structure (33KV Cable take off)	1.064	Nos	34.00	36.19	-	-
59	Four pole structure with isolator	15.151	Nos	6.00	90.91	-	-
60	Douple pole structure (cut point) 33 kv line 11Mtr RSJ pole	0.707	Nos	12.00	8.48	-	-
61	Douple pole structure (cut point) 11 kv line 11Mtr RSJ pole	0.701	Nos	94.00	65.90	-	-
62	Douple pole structure with AB Switch 11 kv line 11Mtr RSJ pole	0.862	Nos	56.00	48.26	-	-
63	200 kVA Dist. DTC with MCCB Dist box on Plinth	5.122	Nos	45.00	230.51	-	-
64	Shifting of 200KVA DTC on plinth	1.727	Nos	20.00	34.53	-	-
65	Augmentation of DTC from 200KVA to 315KVA on plinth	9.985	Nos	70.00	698.92	-	-
66	Shifting of 315KVA DTC on plinth	2.474	Nos	37.00	91.53	-	-
67	LT AB cable 95 Sqmm-New	10.225	km	111.00	1,134.99	134.00	1,370.17
68	LT AB cable 95 Sqmm - Conversion	7.491	km	171.42	1,284.11	30.00	224.73
69	33KV, 3C 300 sqmm XLPE Underground Cable (2 x 3.5Km)	35.791	km	7.00	250.54	-	-
70	4-Pole Structure for 33KV Line on RSJ 152x152, 13 mtr long	3.165	Nos	1.00	3.17	-	-
71	33KV Isolator without EB	0.879	Nos	2.00	1.76	-	-
72	Single Pole Cut Point Structure for 11KV Line on RSJ 116x100, 9	0.583	Nos	2.00	1.17	-	-
73	11KV, 3 core X 300 sqmm XLPE Underground Cable (2 x	18.049	km	1.08	19.49	-	-
74	Dismentaling Charges	0.163	LS	1.00	0.16	-	-
75	A.B.Switch 11 Kv with DP	1.298	Nos	-	-	38.00	49.30
76	Conversion of HT OH to HT Aerial bunch 120 sqmm	16.923	km	34.00	575.38	-	-
	Total Capital + U & M Works				**27,968.26**		**5,242.88**
B	**RI Charges**						
	RI Charges - Bituminous Road	16.94	km	111.90	1,895.59	3.00	50.82
	RI Charges - Bituminous Road for LT	10.16	km			2.00	20.32
	RI Charges - Paver Blocks	18.44	km	109.22	2,014.02	-	-
	RI Charges - Cement Road	27.14	km	75.48	2,048.53	-	-
	HDD Bore	34.5	km	105.69	3,646.31	-	-
	Supervision Charges	1.00	LS	402.29	397.29	-	-
	RI Charges				**10,001.73**		**71.14**
	Grand Total for DPR				37,969.99		5,314.02



महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/Capex/MSEDCL/2023-24/0179 **Date: 11 March 2024**

To,

The Chairman & Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
Prakashgad A.K. Marg, Bandra (East),
Mumbai- 400 051.

Subject: MSEDCL's Capex scheme for Revamped Distribution Sector Scheme Reforms-Based and Results-Linked. (**Total Project Outlay- Rs.27,696.78 Crores**)

Ref:
1. MSEDCL letter Ref No. CE(Dist)/M-III/RDSS/29422 data 16.11.2022.
2. MERC Email- Referring back DPR dated 15.01.2023.
3. MSEDCL Email-Revised DPR submitted dated 31.01.2023
4. MERC Email- Data gaps dated 09.06.2023.
5. MSEDCL letter Ref CE(Dist)/M-III/RDSS/26762 dated 05 Sept 2023.
6. Meeting dated 08.01.2024

Sir,

This has reference to Capex Scheme submitted by MSEDCL vide letter under reference above and correspondence thereof.

1. The Scheme for 'Revamped Distribution Sector Scheme (RDSS) (Reforms-Based and Results-Linked) amounting to **Rs. 27,696.78 Crore** has been evaluated with reference to the MERC Capex Approval Regulations 2022. I am directed to convey in-principle clearance of the Scheme. The particulars of the Scheme as approved in -principle are outlined in **Annexure 'A'** and the breakup of the project cost is given in **Appendix 'A'**.

2. Please note that this in-principle clearance should not be construed as final approval for the ARR purpose. The Scheme will be open for scrutiny during the tariff determination process / ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc. ex post after implementation of the Scheme. MSEDCL shall submit the status of implementation of the Scheme with cost incurred till date, likely completion date etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

3. MSEDCL should submit six monthly progress reports as per the provisions of the Capex Approval Regulations 2022 giving status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

4. Assets created after execution of the Scheme should be maintained separately in the Asset Register.

5. MSEDCL is directed to endeavor to complete project within stipulated time frame. The increase in cost because of the delay in the execution of project will not be entertained in future. Also, the Commission will not grant the revised approval to the scheme. Further, the Commission will not allow capital cost, O&M cost and IDC against unutilized assets beyond the proposed date of COD till the asset is put to use.

6. Immediately after completion / commissioning of the Scheme, MSEDCL should communicate to the Commission the date of completion of the Scheme, item-wise actual cost incurred as per Appendix 'A', escalation in cost, if any, with reasons, the scope, and objectives of the Scheme and to what extent they have been achieved, etc. so as to facilitate a comparison between the in-principle clearance and the actual incurred cost. As per RDSS guidelines, MSEDCL is required to submit project competition certificate to PFC. The copy of said certificate shall be forwarded to the Office of the Commission.

7. If the asset constructed by MSEDCL remains unutilized beyond proposed COD, the Commission will approve the Aggregate Revenue Requirement (ARR) against such asset at depreciated cost from the date the assets actually put to use.

8. The Commission will not allow part capitalization against scheme unless such assets are put to use and benefiting the system.

9. If MSEDCL fails to initiate the work, including tendering process if any, within a period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled.

10. The major scope of the work shall be executed through competitive bidding process only. MSEDCL shall follow the guidelines provide in the Capex Approval Regulations 2022.

11. To ensure that MSEDCL has taken the measures to optimize the project cost and followed the competitive bidding the Commission may carry out third party asset verification including referring to the National Financial Reporting Authority (NFRA) after completion of the work as provided in Regulation 9.2 (16) of the Capex Approval Regulations 2022.

12. MSEDCL shall co-ordinate with GoM for timely release of subsidy component. Further, efforts needs to be made for recovery of dues from Government/Semi-Government/Local authority Departments/agencies/institutes.

13. MSEDCL shall follow up with the PFC for timely releasing of grant. If any grant component is disallowed by PFC on account of MSEDCL's failure to adhere to RDSS Guidelines, then such amount will not be considered for ARR purpose.

Yours faithfully,

(Dr. Rajendra G. Ambekar)
Secretary

Encl: Annexure 'A', Appendix 'A'

Annexure – 'A'

Summary Appraisal of MSEDCL Scheme for

Revamped Distribution Sector Scheme Reforms-Based and Results-Linked.

(Particulars furnished in the Feasibility Report by MSEDCL

1.	**Name of the Scheme**	MSEDCL's Capex scheme for rollout of Revamped Distribution Sector Scheme (Reforms-Based and Results-Linked.)
2.	**Estimated Cost**	Rs. 27,696.78 Crores
	Approved Cost	Rs. 27,696.78 Crores
3.	**ROI/ Cost Benefit**	Due to roll-out of loss reduction works component net impact on retail tariff will be in the range of Rs. 0.003/kWh to Rs.0.062/kWh over lifecycle of project. Large scale roll-out of smart meters will lead to annual savings of ~ Rs. 246.87 Crores in meter readings activity of Non-Ag Consumers. Further ~ Rs. 27.79 Crores annually will be saved on bill printing, distribution and stationery.
4.	**Brief Scope of Work**	**A. Smart Metering:** • Consumer Metering: 2,24,88,866 Consumers (Non-Ag) • DTC Metering: 4,07,507 DTCs • Feeder &Boundary Metering: 27,826 Feeders **B. Loss Reduction:** • Separation of Ag and Non-Ag Feeders: 4,712 Feeders • Arial Bunch (AB) Cable to reduce the theft: 30,332 Km • Upgradation of conductor (33,22,11kV & LT): 19,884 Km • Multi Meter Boxes: 3,98,080 Nos. • Feeder bifurcation (33,22 & 11kV feeders): 9,843 Km • Provision of HVDS (DT and HT line): 5,170 DTCs • Installation of Capacitor to Substations: 2,051 Nos. • IT/OT: Rs. 168 Crores
5.	**Objective /Justification**	i. Improve the quality, reliability and affordability of power supply to consumers through a financially sustainable and operationally efficient Distribution system.



		ii. Reduce the AT&C losses (operational losses due to inefficient power system) up to 13% by FY 2024-25. iii. To reduce the Cost-Revenue Gap (Gap in ACS- ARR) to zero by FY 2024-25. iv. Developing Institutional capabilities for modern DISCOMs.

6.	**Funding Arrangement**	**Source of funds**	**Amount**
		Debt	Rs. 17,103.07 Crores
		Equity	-
		Grants	Rs 10593.71 Crores
		Consumer Contribution	-
7.	**Time Frame/ Phasing of Expenditure**	**FY**	**Phasing of Expenditure in Rs Crores**
		FY 2022-23	Rs.1384.84
		FY 2023-24	Rs.13848.39
		FY 2024-25	Rs.12463.55
			Rs.27696.78

A) <u>Observations / Comments on Feasible Report</u>

1.	**Prudence of Investment / Technical Justification**	The Scheme aims to carry out the works enabling improvement in the quality and reliability of power supply to consumers, by providing conditional financial assistance to DISCOMs to make the sector financially sustainable and operationally efficient.
2.	**Reasonability of Cost Estimate**	The rates are considered by referring to interim Cost date. Proposed capital outlay has been approved by PFC (Nodal Agency).
3.	**Comments on Cost Benefit Analysis**	Demonstrated benefits are justified.
4.	**Discrepancy / Shortcomings Observed**	Queries have been complied & submitted by the MSEDCL
5.	**Remarks / Specific Comments if any**	1. MSEDCL shall endeavor to complete the project in adherence to committed timeline in order to avoid cost and time overrun. 2. MSEDCL shall co-ordinate with GoM for timely release of subsidy component. Further, efforts needs to be made for recovery of dues from Government/Semi-Government/Local authority Departments/agencies/institutes.



Annexure A

Smart Metering works for MSEDCL

Sr. No.	Major Component	Item Particulars	Expected Life cycle unit cost (Rs. per meter)	Quantity (Phase I)	Quantity (Phase II)	Total Quantity	Estimated cost in Rs. Crores
				No.	No	Nos.	
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) +(6)	(8) = (4)x(7)
1	**Consumer Metering**						
1.1	1 Phase Whole Current Smart Consumer Meter		6,000	1,06,96,761	1,06,98,582	2,13,95,343	**12837.21**
1.2	3 Phase Whole Current Smart Consumer Meter		6,000	4,05,430	5,49,753	9,55,183	**573.11**
1.3	3 Phase LT-CT Operated Smart Consumer Meter		6,000	1,16,369	0	1,16,369	**69.82**
1.4	3 Phase CT-PT Operated HT Smart Consumer Meter		6,000	21,971	0	21,971	**13.18**
	Sub-Total			**1,12,40,531**	**1,12,48,335**	**2,24,88,866**	**13,493.32**
2	**DT Metering**	3 Ph LT-CT Operated DT Meter	23,000	4,07,507	0	4,07,507	**937.27**
3	**Feeder Metering**	3 Ph CT-PT Operated feeder Meter	42,000	26,853	0	26,853	**112.78**
4	**Boundary Metering**	3- phase CT/PT operated Boundary meter	42,000	973	0	973	**4.09**
	Total			**1,16,75,864**	**1,12,48,335**	**2,29,24,199**	**14,547.45**
	Total GBS excluding incentive for Phase – I						**2182.12**
	Incentive for Phase – I						**505.82**
	Total GBS including Incentive of Phase – I						**2687.94**



Details of Infrastructure works under Loss Reduction

Sr No.	Major Component	Item Particulars	UoM	Unit cost (Rs. lakh)	Quantity	Estimated cost in Rs. Crores
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) x (6)
1	**Feeder Separation**					
(a)	11 KV Feeder Bay with Gantrystructure		Nos	11.43	4,233	483.77
(b)	11 KV Single circuit Pin type with 55sq.mm AAAC lines on 100x116 mm9 mtr RSJ poles		Kms.	8.17	53,936	4,408.29
(d)	Special DTs		Nos	3.85	4,712	81.31
(e)	11/0.4 kV ,100 kVA Dist. Transformercenters on RSJ , 100 X 116 mm, 11 mtr with Kitkat Dist box.		Nos	3.71	29,252	1,086.29
(f)	HDD for various crossings		Kms.	40.71	103	42.11
(g)	LT Line- 3 ph 4 W. with AAAC 55 sqmm for phase & ACSR Weasel forneutral with PSC Pole 8 Mtr (140 KG)		Kms.	3.88	13,764	533.76
(h)	AB switches		Nos	0.89	4,712	41.81
(i)	Single pole cut points		Nos	0.67	12,744	85.38
(j)	Double pole cut points		Nos	1.02	14,455	147.74
		Sub Total (1)				**7010.46**
2	**HVDS**					
(a)	11 kV Single circuit Pin type with 55sq.mm AAAC lines on 9 mtr PSCpoles		Kms.	6.02	2758.03	166.07
(b)	11 KV ,25 KVA Dist. Transformer centers on 100x116mm, 9 mtrs RSJpoles with MCCB Dist. Box.		Nos	2.47	5170.00	127.57
(c)	Armoured Service Wire (2.5sqmm.) for 1 ph connection		Kms.	1.47	1360.31	20.05
(d)	Single pole cut points		Nos	0.67	652	4.37
(e)	Double pole cut points		Nos	1.02	739	7.55
		Sub Total (2)				**325.61**
3	**Replacement of LT line by AB Cable**					
(a)	AB Cable(70Sq.mm) with alliedmaterial		Kms.	4.94	30331.70	1498.39
(b)	Dismantling & transportation charges		Kms.	0.27	30331.70	83.17
		Sub Total (3)				**1581.56**
4	**Capacitor Bank**					
(a)	Capacitor Bank(APFC) - 1.2 M VAR		Nos	8.71	1617.00	140.76
(b)	Capacitor Bank(APFC) - 2.4MVAR		Nos	11.05	434.00	47.95
		Sub Total (4)				**188.71**
5	**Multimeter Boxes**					
(a)	Multi-meter SMC box (12 meters per box)		Nos	0.0768	398080	305.73
(b)	LT Cable Armoured Aluminum Cable3.5C x 35 sq. mm		LS			
(c)	Installation Charges		Nos			
(c)	Earthing, Fabrication etc.		Nos	0.01723	398080	68.57
(d)	Service Cable (W.P. Wire 2.5 mm2 T/C1100 V Grade) – 1 coil per box		LS	0.01107	398080	44.05

Sr No.	Major Component	Item Particulars	UoM	Unit cost (Rs. lakh)	Quantity	Estimated cost in Rs. Crores
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) x (6)
	Sub Total (5)					**418.35**
6	**Upgradation of Line**					
(a)	11KV (AAAC 55sqmm) on RSJ Poles		Kms.	3.42	1167.30	39.97
(b)	11KV (AAAC 100sqmm) on RSJ Poles		Kms.	5.15	7522.82	387.30
(c)	33 or 22 KV(AAAC 232sqmm) on RSJPoles		Kms.	10.98	6614.69	726.43
(d)	LT line (Ant conductor) on RSJ Poles		Kms.	2.14	4578.82	97.99
	Sub Total (6)					**1251.69**
7	**Feeder Bifurcation**					
(a)	33 KV S/C Line with 100 mm2 AAAC (Suspension type) & RSJ 152 X 152mm 12 mtr. Long.		Kms.	14.16	2294.17	324.76
(b)	11 KV Single circuit Pin type with 100sq.mm AAAC lines on 100x116 mm10 mtr RSJ poles		Kms.	10.50	6821.57	716.44
(c)	22 KV Single circuit Suspension type with 100sq.mm AAAC lines on 152x152mm 11 mtr RSJ poles		Kms.	14.30	727.49	104.05
(d)	22KV Feeder Bay		Nos	14.52	25.00	3.63
(e)	11 KV Feeder Bay		Nos	11.44	48.00	5.49
(f)	Single pole cut points		Nos	0.67	2326.00	15.58
(g)	Double pole cut points		Nos	1.02	2638.00	26.96
(h)	11 KV Line Capacitor		Nos	1.12	402.00	4.50
	Sub Total (7)					**1201.42**
8	**Covered Conductor (HT AB cable)**		**Kms.**	18	333.00	**61.19**
9	**IT / OT Works**		**Nos.**			
(a)	**ERP Up-gradation**		Nos.			
	I. Upgradation from ECC EHP 8 to S/4 on HANA for all modules **II.** e-Bidding (SRM) SAP Treasury and Risk Module		LS	55.12	LS	55.12
	(iv) In-Memory Computation for Business Intelligence Warehousing (BW)		LS	19.20	LS	19.20
(b)	**Upgradation of Other IT modulesand Hardware (cloud)**					
	(ii) Upgradation of CRM, EA, WSS, NC,DMS,		LS	5.98	LS	5.98
	(iii) Replacement of servers in systemand upgradation of storage		LS	14.66	LS	14.66
(c)	**New Modules/application procurement / development**					
	(i) Load Forecasting and associatedtools		LS	30.00	LS	30.03
	(ii) SDWAN implementation		LS	30.00	LS	30.42
(d)	**Licenses Cost licenses for the accomplishment of IT/OT worksunder RDSS**					
	(i) Licences of time series database forIT / OT		LS	10.00	LS	10.00

Sr No.	Major Component	Item Particulars	UoM	Unit cost (Rs. lakh)	Quantity	Estimated cost in Rs. Crores
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5) x (6)
	solutions					
	(ii) Licences for MS-SQL, OracleEnterprise Edition		LS	3.00	LS	3.00
	Sub Total (9)					**168.41**
10	**Cyclone Resilient Network under NCRMP works**					
(a)	HT UG Cabling (3Cx300 sqmm)		CKm	23.21	1,376	319.33
(b)	RMU (3 Way or 5 Way)		Nos	11.20	459	51.42
(c)	LT UG Cabling		CKm	5.80	7,330	425.05
(d)	AB Cabling		CKm	5.91	162	9.57
(e)	LT Feeder Pillar /LTDB		Nos.	0.30	13,336	39.46
(f)	SMC Multimeter boxes(12 Meters perbox)		Nos.	0.11	21,438	22.53
(g)	New Switching-Stations		Nos	254.7	3	7.64
(h)	New/Augmentation of DTCs		Nos	3.89	232	9.03
	Sub Total (11)					**884.03**
11	**Power supply arrangements for Ray Nagar Colony,Solapur under PMAY**		LS	LS	LS	**57.90**
	Total Project Cost				**13149.32**	
	Total GBS				**7889.59**	



ED (Infra):-53
Dt.:-04/02/19

Dir-Proj (R-5662/2019)

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2018-19/ 035

Date: 29 January, 2019

To,
Director (Projects),
Maharashtra State Electricity Distribution Co. Ltd.,
Prakashgad, 5th Floor,
Station Road, Bandra (East),
Mumbai-400 051.

Subject: **In-principle Approval for Detailed Project Report of Solar Power Evacuation arrangement of solar plants at spare land of MSEDCL Sub Station**

Sir,

1 This has reference to your submitted DPR, for in principle approval to the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

2 I am directed to convey the 'in-principle' clearance of the scheme. The particulars of the scheme as approved are outlined in the Annexure "A" and Appendix "A" attached.

EE(Shinde)

3 Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the Scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

4 MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

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2-2-19

5 Assets created after execution of the Scheme should be maintained separately in the Asset Register.

6 Immediately after completion/commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

7 MSEDCL shall endeavor to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.

8 Work shall be executed through transparent competitive bidding process.

9 This approval is subject to grant of Rs. 92.77 Cr. from the MEDA through Green Cess funds. MSEDCL shall follow up with the MEDA for release of grant of Rs. 92.77 Cr.

10 The taxes approved in the Scheme are as per previous regime and stand to be changed as applicable as per Goods and Service Tax (GST) Act.

Yours faithfully,

29.01.2019

(Dr. Rajendra Ambekar)
Executive Director, MERC

Encl: Annexure "A" and Appendix "A"

Annexure A

A. Feasibility Report

<table>
<tr><td>Name of the scheme</td><td>Detailed Project Report of Solar Power Evacuation arrangement of solar plants at spare land of MSEDCL Sub Station</td></tr>
<tr><td>Estimate cost proposed by MSEDCL</td><td>Rs 92.77 Crore</td></tr>
<tr><td>In-principle approval accorded</td><td>Rs 92.77 Crore</td></tr>
<tr><td>Cost benefit</td><td>Annual Cost Saving of Rs. 44.19 Crore</td></tr>
<tr><td>Scope of the works in brief</td><td>Solar Power Projects at 313 substations where evacuation arrangement to be provided Work includes 11 kV bay, 11 kV cable and associated civil work</td></tr>
<tr><td>Objectives/Justification</td><td>(a) Promotion of RE Power and harnessing RE potential in MSEDCL's spare property
(b) Good quality day time power supply to the farmers
(c) Fulfillment of solar RPO of Discom
(d) Negligible breakdown resulting in consumer satisfaction
(e) Environmentally benign
(f) Increase in voltage profile of existing 11 kV feeders
(g) T & D Loss reduction</td></tr>
<tr><td>Funding arrangement</td><td>As per Govt. GR dated 4 April, 2018, MEDA is providing funds through Green Cess for evacuation arrangement of Solar Power Plants.</td></tr>
<tr><td>Time frame/phasing out of expenditure</td><td>The revised phasing of capital expenditure and capitalization has been approved as under:
<table>
<tr><th rowspan="2">Financial Year</th><th>Capital Expenditure</th><th>Capitalization</th></tr>
<tr><th>(Rs Crore)</th><th>(Rs Crore)</th></tr>
<tr><td>FY 2018-19</td><td>92.77</td><td>92.77</td></tr>
</table></td></tr>
</table>

B. Observations / Comments on Feasibility Report:

1.	Prudence of Investment / Technical Justification	(a) Promotion of RE Power and harnessing RE potential in MSEDCL's spare property (b) Good quality day time power supply to the farmers (c) Fulfillment of solar RPO of Discom (d) Negligible breakdown resulting in consumer satisfaction (e) Environmentally benign (f) Increase in voltage profile of existing 11 kV feeders, T & D Loss reduction.
2.	Reasonability of Cost Estimate	MSEDCL submitted the base item estimate as per their cost data of FY 2018-19. MSEDCL further submitted that it will follow competitive bidding process for executing works.
3.	Comments on Cost Benefit Analysis	Annual Cost Saving of Rs. 44.19 Crore
4.	Discrepancy/ Shortcomings Observed	Complied by MSEDCL
5.	Remarks/Specific Comments, if any	Solar Power Evacuation arrangement of solar plants at spare land of MSEDCL Sub Station submitted by MSEDCL is technically justified.

Appendix –A

Sr No	Scope of Work	Material Cost in Rs	DPR Cost in Rs
1	11 kV Feeder Bay	992891.7	1501649
2	3x300 sq mm 11 kV XLPE cable (250 Meter average)	314704.13	475969
3	Civil Work		986410
Total Cost for 1 Sub-Station (A)			2964028
Total for 313 substations (B=A*313)			2964028x313=92.77 Crs

Revised, phasing of expenditure and Capitalization for above approved Capex will be as follows:

Details of scheme	Approved capex Rs. Crore.	Capital Expenditure 2018-19 (Rs. Crore)	Capitalization 2018-19 (Rs. Crore)
Solar Power Evacuation arrangement	92.77	92.77	92.77

महाराष्ट्र विद्युत नियामक आयोग
Maharashtra Electricity Regulatory Commission

MERC/CAPEX/2019-20/ 801 **Date: 27 September, 2019**

To,
The Chairman & Managing Director,
Maharashtra State Electricity Distribution Co. Ltd.,
"Prakashgad", Plot No. G-9,
Prof. Anant Kanekar Marg, Bandra (E),
Mumbai 400 051.

Subject: MSEDCL's Capex Proposal for In- Principle approval for providing and fixing Energy Metering arrangement on 33 kV and 22 kV Incoming Feeders at 33 or 22/11 kV substations and 22 kV switching stations (Rs 30.08 Cr).

Ref:
1. MSEDCL DPR dated 29 June, 2019 and revised DPR vide mail dated 9 July, 2019.
2. Data Gaps raised on 29 July, 2019.
3. MSEDCL Reply to data gaps dated 6 August, 2019.
4. Additional data gaps emailed on 19 and 21 August, 2019.
5. MSEDCL Reply to Additional data gaps dated 20 and 26 August, 2019.

Sir,

1 This has reference to your submitted DPR, for in principle approval to the Commission. The said scheme has been evaluated with reference to the guidelines circulated by the Commission on 9 February, 2005.

2 I am directed to convey the 'in-principle' clearance of the scheme. The particulars of the scheme as approved are outlined in the Annexure "A" and Appendix "A" attached.

3 Please note that this in-principle approval should not be construed as final approval for ARR purpose and the scheme will be open for scrutiny during the tariff determination process/ARR review, particularly in the context of actual cost incurred, scope and objective achieved etc., ex-post after implementation of the Scheme. MSEDCL will be required to submit the status of implementation of the scheme with cost incurred till date, likely completion date, etc. along with its ARR Petition or during the tariff determination process at the appropriate time.

१३वा मजला, केंद्र क्र. १, जागतिक व्यापार केंद्र, कफ परेड, कुलाबा, मुंबई - ४०० ००५.
13th Floor, Centre No. 1, World Trade Centre, Cuffe Parade, Colaba, Mumbai - 400 005.
Tel.: 022-2216 3964 / 2216 3965 / 2216 3969 **Fax :** 022-2216 3976
E-mail : mercindia@merc.gov.in / mercindia@mercindia.org.in **Website :** www.merc.gov.in / www.mercindia.org.in

4 MSEDCL shall ensure that within six months all the existing incoming feeder meters shall be fed in MDAS and NDM system and data received shall be used for energy accounting purpose.

5 MSEDCL shall carry out installation of remaining 132 feeder meters (897-765= 132 meters) simultaneously with the process of installation of 765 feeder meters and the excess incurred amount shall be submitted with proper justification at the time of ARR

6 MSEDCL should submit half yearly progress reports by 20th day of the first month of next half year giving the status of implementation of the Scheme in terms of expenditure incurred and item wise physical progress achieved during the implementation of the Scheme.

7 Assets created after execution of the Scheme should be maintained separately in the Asset Register.

8 Immediately after completion/commissioning of the scheme, MSEDCL should communicate to the Commission the date of completion of the scheme, actual cost incurred, escalation in cost, if any, with reasons, the scope and objectives of the scheme and to what extent they have been achieved, etc., so as to facilitate a comparison between the benefits envisaged at the in-principle clearance and the actual benefits.

9 MSEDCL shall endeavor to complete the project within the stipulated time frame. Further, if MSEDCL fails to initiate the work, including tendering process if any, within period of one year from the date of in-principle approval, the scheme shall be deemed to be cancelled. Thereafter, MSEDCL will have to take a fresh look at the scheme and be required to obtain revised in-principle approval of the Commission with justification for delay.

10 Major scope of work shall be executed through competitive bidding process only.

Yours faithfully,

(Dr. Rajendra G. Ambekar)
Executive Director

Encl: Annexure "A" and Appendix "A"

Annexure A

Feasibility Report for MSEDCL's Sub-Station Incomer Metering

<table>
<tr><td>Name of the scheme</td><td>DPR for providing and fixing Energy Metering arrangement on 33 kV and 22 kV Incoming Feeders at 33 or 22/11 kV substations and 22 kV switching stations</td></tr>
<tr><td>Estimate cost proposed by MSEDCL</td><td>Rs 30.08 Crore</td></tr>
<tr><td>In-principle approval accorded</td><td>Rs. 30.08 Crore</td></tr>
<tr><td>Cost benefit</td><td>Accurate Energy Accounting of Incoming units</td></tr>
<tr><td>Scope of the works in brief</td><td>Incoming feeders Metering arrangement at 765 Sub-Stations
1) 33 KV CTs: 2112 Nos
2) 22 KV CTs: 18 Nos
3) 33 KV PTs: 2112 Nos
4) 22 KV PTs: 9 Nos
5) HT ToD Meter: 765 Nos
6) AMR: 765 Nos
7) Metering Cubicle: 55 Nos</td></tr>
<tr><td>Objectives/Justification</td><td>To ensure proper energy Accounting.
To find out accurate Loss of feeder and substation</td></tr>
<tr><td>Funding arrangement</td><td>Loan from REC/PFC/Other Financial Institutions</td></tr>
<tr><td>Time frame/phasing out of expenditure</td><td>The phasing of capital expenditure and capitalization has been approved as under.
<table>
<tr><th rowspan="2">Financial Year</th><th>Capital Expenditure</th><th>Capitalization</th></tr>
<tr><th>(Rs. Crore)</th><th>(Rs. Crore)</th></tr>
<tr><td>FY 2019-20</td><td>30.081</td><td>30.081</td></tr>
</table></td></tr>
</table>

Observations / Comments on Feasibility Report

1.	Prudence of Investment / Technical Justification	To ensure proper energy Accounting and to find out accurate Loss of feeder and substation
2.	Reasonability of Cost Estimate	MSEDCL has taken cost data as per their approved cost data for FY 2019-20
3.	Comments on Cost Benefit Analysis	After completion of proposed works, accurate accounting of units and sub-stations loss will be possible
4.	Discrepancy/ Shortcomings Observed	Compiled by MSEDCL
5.	Remarks/Specific Comments, if any	MSEDCL shall ensure that within six months all the existing incoming feeder meters shall be fed in MDAS and NDM system and data received shall be used for energy accounting purpose. MSEDCL shall carry out installation of remaining 132 feeder meters (897-765= 132 meters) simultaneously with the process of installation of 765 feeder meters and the excess incurred amount shall be submitted with proper justification at the time of ARR

Appendix-A

Sr No	Name of Circle	Number of meters to be installed	DPR Amount (in Crs.)	CT (Nos)	PT (Nos)
1	Jalna	1	0.036	3	3
2	Latur	57	2.08	171	171
3	Beed	30	1.094	90	90
4	Osmanabad	41	1.496	123	123
5	Nanded	27	0.985	81	81
	Aurangabad Region	**156**	**5.691**	**468**	**468**
6	Kolhapur	30	1.095	90	90
7	Rastapeth	4	0.114	12	3
	Pune Region	**34**	**1.209**	**102**	**93**
8	Thane	55	4.152	Kiosk	
9	KC-II	1	0.036	3	3
10	Palghar	22	0.803	66	66
11	Vasai	1	0.036	3	3
12	Ratnagiri	3	0.109	9	9
13	Malegaon	27	0.985	81	81
14	Ahmednagar	98	3.576	294	294
	Kokan Region	**207**	**9.697**	**456**	**456**
15	Akola	49	1.788	147	147
16	Buldhana	71	2.591	213	213
17	Washim	40	1.459	120	120
18	Amravati	69	2.518	207	207
19	Yavatmal	77	2.809	231	231
20	Gadchiroli	5	0.182	15	15
21	Bhandara	7	0.255	21	21
22	Gondia	4	0.146	12	12
23	NUC	4	0.203	12	12
24	Nagpur Rural	32	1.168	96	96
25	Wardha	10	0.365	30	30
	Nagpur Region	**368**	**13.484**	**1104**	**1104**
	Total	**765**	**30.081**	**2130**	**2121**

Cost Benefit Analysis and Appraisal Letters

MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd
(A Govt. Of Maharashtra Undertaking)
CIN : U40109MH2005SGC153645

Office of the Director (Projects)
Maharashtra State Electricity Distribution Co. Ltd.
Prakashgad, Plot No. G-9, Bandra (E), Mumbai – 400 051
Tel : 26474507 (P), 26474211 (O) Fax : 26581465
Email : directorprojects@mahadiscom.in

Ref. No. Director (Projects)/ № 26986 **Date :** 13 OCT 2022

To,
The Secretary,
Maharashtra Electricity Regulatory Commission
13 th floor , Centre no 1,
World trade Centre
Cuffe parade,Colaba
Mumbai 400005.

Sub: Implementation of Deen Dayal Upadhaya Gram Jyoti Yojana (DDUGJY) Scheme by MSEDCL.

Ref :

1. MERC/Capex/2015-2016/1373 dtd. 28.01.2016.
2. MERC/Capex/2017-2018/0152 dtd. 31.01.2018

Preamble:

Govt. of India has launched Deen Dayal Upadhyay Gram Jyoti Yojana (DDUGJY) for rural area, with the following objectives:

- To provide electricity to all villages.
- Feeder separation to ensure sufficient power to farmers and regular supply to other consumers.
- Improvement of sub-transmission and distribution networks to improve the quality and reliability of the supply.

Accordingly, Maharashtra State Electricity Regulatory Commission (MERC) has accorded In principal approval to the Circle wise DPRs for DDUGJY Scheme on date 28.01.2016 & revised approval on date 31.01.2018 as below.

Sr. no	Component	Amount (in Crs)
1	Sansad Aadarsh Gram Yojana (79 Villages)	30.44
2	Connecting unconnected rural households	448.79
3	System strengthening	984.92
4	Feeder Separation	700
	Total DPR Cost	**2164.15**

MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd.
(A Govt. Of Maharashtra Undertaking)
CIN : U40109MH2005SGC153645

Office of the Director (Projects)
Maharashtra State Electricity Distribution Co. Ltd.
Prakashgad, Plot No. G-9, Bandra (E), Mumbai – 400 051
Tel : 26474507 (P), 26474211 (O) Fax : 26581465
Email : directorprojects@mahadiscom.in

After approval from MERC for the scheme, tenders under DDUGJY were floated on full turnkey basis in Part-I at Corporate office level (i.e. Supply, Erection, Testing & Commissioning of Substations & associated lines) & Part-II at Zone office level (i.e. Supply, Erection, Testing & Commissioning of Distribution Transformer & associated lines, RHH connections, Feeder separation work,) in phase wise manner.

Considering the various reasons for the delay, REC has given extension for original work completion period March-2019 to March-2020 & subsequently increased to March-2021.

Accordingly, the scheme is physically completed in March-21 & the financial closure of DDUGJY scheme is submitted to REC/MoP on dtd. 09.03.2022.

Asset of Rs. 2430.27 Crs is created after execution of DDUGJY scheme as on 31.03.2022 in Maharashtra.

The district wise Physical & Financial details of executed work under DDUGJY scheme is shown in the Annexure A & the abstract of the same is as below.

Amount in Rs. Crs.

Sanction Cost	Award Cost	Final project cost as per execution	Grant	Loan	Fund utilized
2164.15	2206.87	2176.86	1250.23	926.63	2176.86

Benefit of scheme after execution:

The DDUGJY Scheme was sanctioned in March -2016 and the scheme is physically completed on March 2021. The implementation of scheme resulted in reduction of utility AT & C loss is as below.

FY	16-17	17-18	18-19	19-20	20-21	21-22
Loss reduction Trajecory as per DDUGJY guidelines	16.45	15.45	15.00	14.5	14.25	14.00
Actual AT&C Losses	18.88	14.38	16.23	19.8	20.73	14.49

MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd.
(A Govt. Of Maharashtra Undertaking)
CIN : U40109MH2005SGC153645

Office of the Director (Projects)
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Prakashgad, Plot No. G-9, Bandra (E), Mumbai – 400 051
Tel : 26474507 (P), 26474211 (O) Fax : 26581465
Email : directorprojects@mahadiscom.in

Supply Hours & transformer failure

FY	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Supply hours	23.48	23.40	23.06	23.37	23.45	23.49	23.44
Transformer failure (%)	8.11	7.95	7.5	8.26	9.38	7.98	8.01

Submitted for kind information please.

Encl- Annexure A

Director (Projects)
MSEDCL

Copy s.w.r.t:
1. Hon.Principal secretary of Energy ,Mantralaya Mumbai
2. Hon.Chairman and Managing Director, MSEDCL,Mumbai

Copy To:
Superintending Engineer, TRC, MSEDCL,Mumbai

Progress of DDUGJY Scheme

Annexure A

Sr. No.	Circle	Financial Details		Physical Details										
		Total DPR Cost	Actual Execution Cost(Excl. PMA & Incl. taxes)	Sub-station	Additional PTF	Aug. of PTF	HT Line	SAGY Villages	Feeder separation	DTC	Aug of. DTC	LT Line	SDT	BPL
1	Ahmednagar	39.00	36.41	2	0	3	245.31	2	11	244	2	102.17	51	31690
2	Akola	49.78	42.14	5	4	4	228.70	1	15	150	0	20.05	0	7207
3	Amravati	73.83	82.94	11	6	0	560.06	12	20	299	5	65.27	25	6094
4	Aurangabad	153.66	146.32	19	11	3	1089.62	2	69	590	0	249.85	55	20755
5	Bhandara	25.05	32.31	5	3	0	198.54	1	5	90	0	69.27	0	4374
6	Beed	61.42	77.68	5	1	2	458.26	2	24	402	0	527.64	17	15831
7	Buldhana	42.71	58.75	8	5	0	326.30	1	15	159	2	56.56	14	13045
8	Chandrapur	111.03	98.61	10	3	0	764.73	1	26	300	3	74.06	25	17442
9	Dhule	44.03	51.40	9	3	0	358.31	1	15	178	13	28.34	36	10817
10	Gadchiroli	40.80	44.44	3	0	2	384.54	2	7	218	0	41.39	7	11709
11	Gondia	96.09	92.65	8	2	4	785.86	1	29	402	0	161.19	32	19350
12	Hingoli	40.81	45.77	8	2	1	271.26	0	12	111	0	192.50	33	8813
13	Jalgaon	71.63	74.01	6	2	6	605.05	2	58	270	0	65.09	6	6834
14	Jalna	124.02	118.08	16	0	0	1073.10	1	59	369	0	114.97	34	11965
15	Kolhapur	26.42	32.05	2	6	0	83.87	3	5	92	0	98.97	5	4819
16	Latur	65.93	73.37	6	4	7	525.62	1	31	314	0	251.61	32	19279
17	Nagpur	213.04	190.00	18	5	3	1275.49	4	43	829	15	120.52	17	1443
18	Nanded	80.50	89.34	12	5	1	536.56	2	21	317	0	273.47	3	16102
19	Nandurbar	40.27	42.16	4	0	1	395.11	1	57	230	0	87.99	7	5203
20	Nashik	39.54	39.77	3	0	0	320.14	1	33	48	0	10.57	43	33318
21	Osmanabad	56.34	56.35	9	2	0	494.20	1	30	134	0	65.31	41	9418
22	Prabhani	61.77	58.15	11	5	0	475.38	1	19	90	0	94.83	11	9637
23	Pune-1 (PRC)	53.04	57.34	4	5	3	160.96	3	0	155	21	56.52	2	1907
24	Pune-2 (Baramati)	12.30	13.07	1	3	2	60.54	8	0	20	0	41.78	0	10282
25	Raigad-1(Pen)	69.95	44.89	0	0	0	92.45	5	0	222	6	110.01	0	8984
26	Raigad-2 (Vashi)	59.08	44.98	2	0	0	64.37	0	0	62	26	110.92	0	646
27	Ratnagiri	56.59	66.05	2	0	3	263.86	3	0	113	26	159.52	0	2255
28	Sangli	41.16	37.09	3	2	1	144.68	1	13	188	0	252.58	3	762
29	Satara	14.21	20.78	0	4	0	68.08	2	0	36	0	141.08	14	9802
30	Sindhudurg	52.82	51.35	1	1	5	341.03	3	0	342	2	218.99	0	2200
31	Solapur	18.89	21.25	0	0	0	7.02	2	0	17	3	188.10	106	4471
32	Thane1 (Vasai)	61.49	53.86	4	1	1	173.57	6	0	77	4	57.95	0	2842
33	Thane 2 (Kalyan II)	20.57	21.13	2	0	0	45.80	0	0	55	0	47.58	0	1595
34	Thane 3 (Kalyan I)	16.68	14.09	0	0	0	17.00	0	0	104	0	46.00	0	30
35	Wardha	20.17	22.91	2	1	0	164.31	1	5	141	0	28.42	5	8263
36	Washim	33.84	42.73	3	0	2	228.67	1	11	210	0	153.72	2	7055
37	Yavatmal	75.69	82.64	6	8	2	767.78	1	25	307	0	86.57	69	18166
Total		**2164.15**	**2176.86**	**210**	**94**	**56**	**14056**	**79**	**658**	**7885**	**128**	**4471**	**695**	**364405**

MAHA VITARAN
Maharashtra State Electricity Distribution Co. Ltd.
A Govt. of Maharashtra Undertaking

Maharashtra State Electricity Distribution Co. Ltd.
IPDS Section "Prakashgad", 5th Floor,
Bandra (E), Mumbai 400 051.
Tel: (O) 26474211 Fax: (022) 26472868.
E-Mail: ceipds.msedcl@gmail.com
Website: www.mahadiscom.in

Ref. No. CE/Proj/66 kV Elimination SCH/ No 35127 **Date:** 21 DEC 2019

To
The Secretary,
Maharashtra Electricity Regulatory Commission,
13th Floor, Center no 1, World Trade Center,
Cuffe Parade, Colaba , Mumbai - 400005

Subject: Submission of the Cost Benefit Analysis of 66 kV Elimination Schemes.
Ref: MERC/Capex/2009-10/238 Dtd 10-03-2010

Preamble:

At present 66 KV system has become outdated and the 66 kV equipments and spares are not available for maintenance. Further 66 kV system is not in existence anywhere in India except Maharashtra State, particularly in Vidarbha region. In order to maintain the quality and reliability of supply and also to standardize the system voltages it is essential to convert 66 kV level into 33 kV level. Further it is need of the system.

Objectives

The objectives for elimination of 66/11 kV level from EHV sub-stations are as below

i) 66 kV system is now outdated. 66 kV Equipments and spare parts are not available.

ii) Standardization of system voltages.

iii) To ensure better quality and reliability of supply.

Brief description

The scheme has been prepared for three zones namely Amravati, Nagpur (Urban) and Nagpur. Total 25 numbers of 66/11 kV substations and 06 numbers of 66 kV HT consumers are covered in this scheme. To eliminate 66 kV level, the work such as additional 33/11 kV substations, additional 33/11 kV power transformers, replacement of 66/11 kV power transformers by 33/11 kV power transformers, laying of 33kV and 11 kV underground cables etc. is required. The total scope of work involved is given below

Sr. No.	Activity	Unit	Qty	Cost in Rs. Lakhs
1	33/11 kV 2x10 MVA outdoor S/S	No.	13	4251.00
2	33/11 kV 1x10 MVA outdoor S/S	No.	04	474.92
3	33/11 kV 2x5 MVA outdoor S/S	No.	09	2128.32
4	33/11 kV 1x5 MVA outdoor S/S	No.	03	301.14
5	33/11 kV Additional Power T/F 2x10 MVA	No.	02	486.92
6	33/11 kV Additional Power T/F 1x10 MVA	No.	02	237.42
7	110 Volt Battery set with charger	No.	03	6.15
8	33 kV O/H line on 11 Rmt. RSJ	kM	42	356.91
9	33 kV O/H line on 10 Rmt. RSJ	kM	140	962.77
10	33 kV, 300 Sq .mm. U/G cable	kM	114.4	3895.32
11	33 kV Bay	No.	46	628.06
12	11 kV outdoor switchgear	No.	02	149.96
13	11 kV Take off structure	No.	01	8.66
14	11 kV O/H line on 10 Rmt.RSJ (0.1Dog ACSR)	kM	19	114.82
15	11 kV O/H line on 9 Rmt.RSJ (0.1Dog ACSR)	kM	6	30.08
16	11 kV, 240 Sq. mm, XLPE U/G cable	kM	8.5	145.86
17	11 kV, 300 Sq. mm, XLPE U/G cable	kM	10.28	200.25
18	Land/ development /Civil works	No.	14	404.26

The total cost involved is **Rs. 14783 Lakhs**

Cost Benefit Analysis

No direct monetary benefits are envisaged. It is necessary to implement the scheme in order to standardize the system voltages and ensure better quality and reliability of supply as the 66 kV system has become outdated. At present 66 kV system is not in existence in India and the 66 kV equipments and spares are not available for maintenance. To maintain the supply it is essential to convert 66 kV level into 33 kV level and is need of the system.

Thanking You

Yours Sincerely,

Chief Engineer (Projects)
MSEDCL, Mumbai

MAHA VITARAN
Maharashtra State Electricity Distribution Co. Ltd.
A Govt. of Maharashtra Undertaking

Maharashtra State Electricity Distribution Co. Ltd.
IPDS Section "Prakashgad", 5th Floor,
Bandra (E), Mumbai 400 051.
Tel: (O) 26474211 Fax: (022) 26472868.
E-Mail: ceipds.msedcl@gmail.com
Website: www.mahadiscom.in

Ref. No. CE/IPDS/ No 33781 Date: 17 DEC 2019.

To

The Secretary,
Maharashtra Electricity Regulatory Commission,
13th Floor, Center no 1, World Trade Center,
Cuffe Parade, Colaba , Mumbai - 400005

Subject: -Submission of the Cost Benefit Analysis of IPDS Scheme

Sir,

The IPDS scheme is formulated for **urban areas (**Statutory Towns) having population more than 15000 only and is covering works relating to strengthening of sub-transmission & distribution network, including metering of feeders /distribution transformers / consumers and IT enablement of distribution sector.

The IPDS scheme is sanctioned by MoP for Rs 2300.43 Crs for 45 circles of MSEDCL. The scheme is under implementation and is targeted to be completed by March 2020. The actual cost benefit analysis will be submitted after completion of the scheme i.e. FY 2020-21.

Thanking You

Yours Sincerely,

Chief Engineer (Projects)
MSEDCL, Mumbai

Cost Benefit Analysis for FY 2017-18 and 2018-19

Name of the scheme	IPDS				Remark
MERC Scheme code					
MERC In-principle clearance ref no and date	MERC/CAPEX/20152016/1464 dtd 10.02.2016				
In Principle approved cost Rs Crs	2300.43				
Brief Scope of work	System strengethening New Sub-stations , Augmenttaion of Power Transformers , addl Power Transformers, New Distribution Transformers , Augmentation of Distribution transformers				
Objectives	1.24 X 7 Hrs Power supply for consumers. 2. Strengthening of electrical distribution network. 3. Reduction of AT&C Losses.				
Cumulative Capitalisation Rs Crs					
Year wise capitalisation Rs Crs	Financial Year		Capitalization (Amt. in Crs)		
	2015-16		0		
	2016-17		0		
Funding arrangement	Equity	Loan	Grant	Total	
		920.172	1380.258	2300.43	
Time Frame / phasing of expenditure	As approved by MERC		Actual		
	Year	Amt in Crs	year	Amt in Crs	
	2011-12		FY 2016-17	13.4	
	2012-13		FY 2017-18	224.74	
	2013-14		FY 2018-19	633.98	
			FY 2019-20 (till Oct 2019)	413.65	
	Total		**Total**	**1285.77**	
Scheme Completion date	**Mar-20**				
Benefits Achieved	The Scheme is under implementation and the benefits achieved can be calculated after completion of the scheme				

MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd.
(A Govt. of Maharashtra Undertaking
CIN= U40109MH2005SGC153645)

Office of the Chief Engineer (Infrastructure-Plan)
Maharashtra State Electricity Distribution Co. Ltd.
"Prakashgad", 5th Floor, Station Road, Bandra (E),Mumbai-400 051
Tel.: (P) 26477000 Extn. 2231, Fax : (022) 26478544

No. CE(Projects)/Infra-I/ MYT/ 35214

Date: 21/12/2019

To,
The Secretary,
Maharashtra Electricity Regulatory Commission,
13th Floor, Centre No.1, World Trade Centre,
Cuffe Parade, Colaba, Mumbai-400 005

Sub: Submission of Cost Benefit Analysis of Infra-I Scheme for FY 2017-18 & FY 2018-19

Preabmle - Maharashtra State Electricity Distribution Limited (Company) decided (April 2006) to implement infrastructure Plan-I (Infra Plan-I) with the objectives of bringing down the Aggregate Technical and Commercial (AT&C) losses, provide reliable and quality power supply, meeting the expected load growth etc. and there by improve the performance of the utility. The Company accordingly prepared the Detailed Project Reports (DPRs) in 2006-07 for 121 Divisions, totaling to Rs.10,785.57 crore. Maharashtra Electricity Regulatory Commission (MERC) in-principally approved (2007) the DPRs for Rs.9,013.96 crore. Government of Maharashtra (GoM) approved the scheme in September 2008.A total of 91 turnkey contracts across 121 Divisions were awarded between 2008 and 2011 in a phased manner. The scheme was executed mainly by engaging contractors on turnkey basis and departmentally (termed as Urgent Six Month (USM) works as well.

The cost benefit analysis of Infra-I Scheme for the year FY 2017-18 & 2018-19 is as follows -

Name of Scheme	**Infra-I**			
MERC In-Principle Clearance Reference No. & Date	Sr. No.	In-Principle Approval Reference	Date	Approved Cost in Crs
	1	MERC/L.No. 1325 Dt. 09/07/2009	09.07.2009	9334.58
In-Principle Approved Cost Rs. Cr.	9334.58			
Brief Scope of Work	Various capital works such as Erection, Testing & Commissioning of New substations, switching station, Augmentation of Power Transformers, Additional power transformers, Distribution Transformers, Aug. of DTC and its associated lines and works			
Objectives	i. Up-gradation of existing system ii. Meeting Load Growth iii. Providing reliable & quality supply iv. Releasing of New Connections R, C, I as well as Ag pumps v. Reduction in DTC Failure Rates vi. Reducing distribution loss			
Cummulative Capitalization Rs. Cr.	12969.28			
Year wise Capitalization Rs. Cr.	**Financial Year**		**Capatilization (Amt. Rs. Cr.)**	
	2017-18		127.02	
	2018-19		3.55	
Funding arrangement	**Equity**	**Loan**	**Grant**	**Total**
	20%	80%	NA	100%
	2157.63	9810.27	0.00	11967.90
Time frame/phasing of expenditure	As Approved by MERC		Actual	
	Year	**Amount (Rs. Cr.)**	**Year**	**Amount (Rs.**
	2017-18	0	**2017-18**	125.2
	2018-19	0.00	**2018-19**	0
Scheme completion date	The scheme is financially closed in 2017.			

Benefits achieved

1. Reduction in Distribution Transformer Failure Rate –

The Distribution transformer failure rate for FY 2013-14 is 9.18%

Year	% DTC Failure Rate	Variation of DTC Failure Rate w.r.t FY 2013-14
2017-18	7.50%	Reduced by 1.68%
2018-19	7.30%	Reduced by 1.88%

2. Releasing of New Connections –

The New connections released during FY 2017-18 are 1141614 Nos. having total load of 2114192 KW & The New connections released during FY 2018-19 are 1556566 Nos. having total load of 2364908 KW

3. Increase in Power Handling Capacity –

The Total Input Power for FY 2013-14 is 110458 MUs

Year	Total Input Power in MU's	Variation of Input Power w.r.t FY 2013-14
2017-18	123872	Increased by 12.14%
2018-19	132441	Increased by 19.90%

4. Distribution Losses –

The Distribution Losses for FY 2013-14 is 14.00 %

Year	% Distribution Loss	Variation of Distribution loss w.r.t FY 2013-14
2017-18	13.90%	Decreased by 0.10%
2018-19	13.63%	Decreased by 0.37%

Chief Engineer (Projects)
M.S.E.D.C.L, Mumbai

Copy s.w.rs. to -

1. The Director (Projects), MSEDCL, Mumbai
2. The Executive Director - IV (Projects), MSEDCL, Mumbai

Copy to - 1. The Superintending Engineer(TRC), MSEDCL, Mumbai

MAHA VITARAN
Maharashtra State Electricity Distribution Co. Ltd.
A Govt. of Maharashtra Undertaking

Maharashtra State Electricity Distribution Co. Ltd.
IPDS Section "Prakashgad", 5th Floor,
Bandra (E), Mumbai 400 051.
Tel: (O) 26474211 Fax: (022) 26472868.
E-Mail: ceipds.msedcl@gmail.com
Website: www.mahadiscom.in

Ref. No. CE/IPDS/ No 34062 **Date:** 10 DEC 2019

To

The Secretary,
Maharashtra Electricity Regulatory Commission,
13th Floor, Center no 1, World Trade Center,
Cuffe Parade, Colaba , Mumbai - 400005

Subject: -Submission of the Cost Benefit Analysis of APDRP Phase –II Scheme

Sir,

The APDRP phase –II scheme was formulated for 11 towns for up gradation of transmission and distribution system, improving the reliability of existing distribution system and to reduce T&D losses . The cost was Rs 237.53 Crs.

The scheme was implemented in Akola, Bhandara , Buldhana, Dombivali, Khamgaon , Malkapur, Mulund, Bhandup, Shegaon, Thane, Ulhasnagar and Yavatmal towns . The scheme is closed in March-2009.

The detailed cost benefit analysis is enclosed as per Annexure A

Thanking You

Yours Sincerely,

Chief Engineer (Projects)
MSEDCL, Mumbai

APDRP Phase II : Cost Benefit Analysis for FY 2009-10

Sr.No.	R-APDRP Towns	Project cost	Billing Eff. of Base lines	Inf for the period 2009-10					
				Billing Eff. for 09-10	Total inputs for 09-10	Increase in billing eff.	Total units saved (MUs)	ARR in Rs	Total cost saved considering Rs.ARR/Unit
1	Akola	11.99	59.47	60.76	235	1.29	3.04	4.67	14,186,894
2	Bhandara	0.68	55.47	62.87	39	7.40	2.90	5.80	16,822,972
3	Buldhana	2.40	53.26	58.26	32	5.00	1.60	3.88	6,208,869
4	Khamgaon	2.50	61.26	70.32	78	9.06	7.04	4.75	33,421,256
5	Malkapur	2.23	70.22	71.40	28	1.18	0.33	4.47	1,467,015
6	Shegaon	1.93	85.73	70.36	21	-15.37	-3.30	4.54	-15,005,413
7	Yeotmal	2.69	62.21	61.14	164	-1.07	-1.76	6.18	-10,864,956
8	Thane	126.87	66.21	71.48	535	5.27	28.19	5.89	166,065,458
9	Mulund Bhandup	72.50	81.61	83.98	914	2.37	21.66	6.54	141,668,172
10	Ulhasnagar	6.59	53.69	61.21	519	7.52	39.03	5.63	219,732,144
11	Dombivli	7.15	70.19	74.94	396	4.75	18.81	5.98	112,483,800
Total		**237.54**			**2961**				**686,186,211**
							Total benefit : Rs		**68.62 Crs**

Cost Benefit Analysis for FY 2017-18 and 2018-19

Name of the scheme	**APDRP Phase II (11 towns)**				Remark
MERC Scheme code					
MERC In-principle clearance ref no and date	MERC/CAP/DPR/12/09/1006 dtd 26.05.2009				
In Principle approved cost Rs Crs	237.53				
Brief Scope of work	System strengethening and upgradation of the sub-transmission and distribution system				
Objectives	1. Strengthening of the existing distribution system 2. Improving reliability of existing distribution system 3. Reduction of AT&C Losses.				
Cumulative Capitalisation Rs Crs					
Year wise capitalisation Rs Crs	Financial Year		Capitalization (Amt. in Crs)		
	2015-16		0		
	2016-17		0		
Funding arrangement	Equity / Grant	Loan	Grant (25%)	Total	
	59.38	178.15			
Time Frame / phasing of expenditure	As approved by MERC		Actual		
	Year	Amt in Crs	year	Amt in Crs	
	2007-08	118.76	2007-08	55.66	
	2008-09	118.77	2008-09	129.88	
	Total	**237.53**	**Total**	**185.54**	
Scheme Completion date	**Mar-09**				
Benefits Achieved	Distribution loss saving is envisaged which translate into saving of Rs 15.50 Crs.				

MAHAVITARAN
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Maharashtra State Electricity Distribution Co. Ltd.
"Prakashgad", 5th Floor, Station Road, Bandra (E),Mumbai-400 051
Tel.: (O) 022- 26474211 Ext.2205,
Email: ceprojects.msedcl@yahoo.com

No. CE(Projects)/Infra-II/ MYT/ 34769 **Date: 17.12.2019**

To,
The Secretary,
Maharashtra Electricity Regulatory Commission,
13th Floor, Centre No.1, World Trade Centre,
Cuffe Parade, Colaba, Mumbai-400 005

Sub:- The cost benefit analysis of Infra-II scheme for year FY 2017-18 & 2018-19.

Preabmle - Infrastructure Plan Part II i.e Infra-II scheme is basically formulated for various Capital works for releasing New connections during the period between FY 2012-13 and FY 2014-15. This New Infrastructure Plan scheme proposal have been selected for 3 years plan and care has been taken to ensure that the expected load Growth up to 2014-15 has been considered. Accordingly MSEDCL has prepared DPRs for 131 Dn. Infra Section has submitted the scheme of Infrastructure Plan Part – II and approved by the Board of Directors vide BR No: 53 dated 07.03.2012 for various capital works such as New substations, switching station, Augmentation of Power Transformers, additional power transformers, Distribution Transformers, associated lines and works etc. Further, for 7 Nos. of towns which were not included under RAPDRP –B Scheme, the Board of Directors, vide BR No. 161 Dt. 23/09/2013, have accorded approval for execution of Infra-II Town Scheme.

The cost benefit analysis of Infra-II Scheme for the year FY 2017-18 & 2018-19 is as follows -

Name of Scheme	**Infra-II**		
MERC In-Principle Clearance Reference No. & Date	Sr. No.	In-Principle Approval Reference	Date
	1	MERC/Capex/2012-13/02654	15.02.2013
	2	MERC/Capex/20142015/0021	27.03.2014
	3	MERC/Desk-III/Capex/20122013/02351	15.01.2013
	4	MERC/Desk-III/Capex/20132014/02193	11.02.2014
	5	MERC/Desk-III/Capex/2012-13/02487	29.01.2013
	6	MERC/Desk-III/Capex/2012-2013/2648	15.02.2012
	7	MERC/DESK III/CAPEX/20132014/01823	20.12.2013
	8	MERC/Desk-III/Capex/2013-2014/1491	30.10.2013
	9	MERC/Desk-III/Capex/2013-2014/1492	30.10.2013
	10	MERC/Desk-III/Capex/2013-2014/2322	11.01.2013
	11	MERC/Desk-III/Capex/2012-2013/2693	22.02.2013
	12	MERC/Capex/2013-2014/00473	23.05.2013
	13	MERC/Capex/2013-2014/02488	29.01.2013
	14	MERC/Capex/2013-2014/00860	12.07.2013
	15	MERC/Capex/2013-2014/472	23.05.2013
	16	MERC/Capex/2012-2013/607	07.06.2013
	17	MERC/CAPEX/20122013/1362	04.10.2013
	18	MERC/Capex/2013-2014/939	24.07.2013
	19	MERC/Capex/2013-2014/00259	29.04.2013
	20	MERC/Capex/2013-2014/00260	29.04.2013
	21	MERC/Capex/2013-2014/861	12.07.2013
	22	MERC/CAPEX/20132014/1363	04.10.2013
	23	MERC/Desk III/CAPEX/967	17.09.2014
	24	MERC/Desk III/CAPEX/878	20.08.2014
	25	MERC/Desk III/CAPEX/34	16.10.2014
	26	MERC/Desk III/CAPEX/1887	31.12.2013
	27	MERC/Desk III/CAPEX/2014-15/20	27.03.2014
	28	MERC/Desk III/CAPEX/1888	31.12.2013
	29	MERC/Desk III/CAPEX/2013-14/351	20.05.2014
	30	MERC/Desk III/CAPEX/2189	11.02.2014
	31	MERC/Desk III/CAPEX/968	17.09.2014
	32	MERC/Desk III/CAPEX/2013-14/1884	31.12.2013
	33	MERC/Desk III/CAPEX/2013-14/1935	08.01.2014
	34	MERC/Desk III/CAPEX/2192	11.02.2014
	35	MERC/Desk III/CAPEX/2013-14/1934	08.01.2014
	36	MERC/Desk III/CAPEX/350	20.05.2014
	37	MERC/Desk III/CAPEX/2303	03.03.2014
	38	MERC/Desk III/CAPEX/2013-14/2003	17.01.2014
	39	MERC/Desk III/CAPEX/2013-14/2002	17.01.2014
	40	MERC/Desk III/CAPEX/2013-14/2000	17.01.2014
	41	MERC/Desk III/CAPEX/2178	07.02.2014
	42	MERC/Desk III/CAPEX/2190	11.02.2014
	43	MERC/Desk III/CAPEX/2191	11.02.2014
	44	MERC/Desk III/CAPEX/2302	03.03.2014
	45	MERC/Desk III/CAPEX/1886	30.12.2013
	46	MERC/Desk III/CAPEX/1883	30.12.2013
	47	MERC/Desk III/CAPEX/1885	30.12.2013
	48	MERC/Desk III/CAPEX/2013-14/138	21.04.2014
	49	MERC/Desk III/CAPEX/2013-14/139	21.04.2014

	50	MERC/Desk III/CAPEX/2013-14/365	21.04.2014
	51	MERC/Desk III/CAPEX/2013-14/1751	12.12.2013
	52	MERC/Desk III/CAPEX/2013-14/1752	12.12.2013
	53	MERC/Desk III/CAPEX/2013-14/2179	07.02.2014
	54	MERC/Desk III/CAPEX/795	31.07.2014
	55	MERC/Desk III/CAPEX/794	31.07.2014
	56	MERC/Desk III/CAPEX/140	21.04.2014
	57	MERC/Desk III/CAPEX/2014-15/376	21.05.2014
	58	MERC/Desk III/CAPEX/2014-15/375	21.05.2014
	59	MERC/Desk III/CAPEX/2014-15/377	21.05.2014

In-Principle Approved Cost Rs. Cr.	8304.32
Brief Scope of Work	Various capital works such as Erection, Testing & Commissioning of New substations, switching station, Augmentation of Power Transformers, Additional power transformers, Distribution Transformers, Aug. of DTC and its associated lines and works
Objectives	i. Up-gradation of existing system ii. Meeting Load Growth iii. Providing reliable & quality supply iv. Releasing of New Connections R, C, I as well as Ag pumps v. Reduction in DTC Failure Rates vi. Reducing distribution loss
Cummulative Capitalization Rs. Crs. (18-19)	7639.25 (Capitalization upto 2016-17 is Rs. 4246.34 Crs)

Year wise Capitalization Rs. Cr.

Financial Year	**Capatilization (Amt. Rs. Cr.)**
2017-18	1562.91
2018-19	1830

Funding arrangement

Equity	**Loan**	**Grant**	**Total**
20%	80%	NA	100%
1660.86	6643.46	0.00	8304.32

Time frame/phasing of expenditure

As Approved by MERC		**Actual**	
Year	**Amount (Rs. Cr.)**	**Year**	**Amount (Rs. Cr.)**
2017-18	0.00	**2017-18**	741.73
2018-19	0.00	**2018-19**	765.08

Scheme completion date: Completed in March 2019

Benefits achieved

1. Reduction in Distribution Transformer Failure Rate –
The Distribution transformer failure rate for FY 2013-14 is 9.18%

Year	% DTC Failure Rate	Variation of DTC Failure Rate w.r.t FY 2013-14
2017-18	7.50%	Reduced by 1.68%
2018-19	7.30%	Reduced by 1.88%

2. Releasing of New Connections –

The New connections released during FY 2017-18 are 1141614 Nos. having total load of 2114192 KW & The New connections released during FY 2018-19 are 1556566 Nos. having total load of 2364908 KW

3. Increase in Power Handling Capacity –
The Total Input Power for FY 2013-14 is 110458 MUs

Year	Total Input Power in MU's	Variation of Input Power w.r.t FY 2013-14
2017-18	123872	Increased by 12.14%
2018-19	132441	Increased by 19.90%

4. Distribution Losses –
The Distribution Losses for FY 2013-14 is 14.00 %

Year	% Distribution Loss	Variation of Distribution loss w.r.t FY 2013-14
2017-18	13.90%	Decreased by 0.10%
2018-19	13.63%	Decreased by 0.37%

Chief Engineer (Projects)
M.S.E.D.C.L, Mumbai

Copy s.w.rs. to -

1. The Director (Projects), MSEDCL, Mumbai
2. The Executive Director -IV (Projects), MSEDCL, Mumbai

Copy to - 1. The Superintending Engineer(TRC), MSEDCL, Mumbai

MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd.
(A Govt. Of Maharashtra Undertaking)
CIN : U40109MH2005SGC153645

Office of the Director (Projects)
Maharashtra State Electricity Distribution Co. Ltd.
Prakashgad, Plot No. G-9, Bandra (E), Mumbai – 400 051
Tel : 26474507 (P), 26474211 (O) Fax : 26581465
Email : directorprojects@mahadiscom.in

Ref. No. Director (Projects)/ No 26987 DFA

Date 13 OCT 2022

To,
The Secretary,
Maharashtra Electricity Regulatory Commission
13 th floor , Centre no 1,
World trade Centre
Cuffe parade, Colaba
Mumbai 400005.

Sub:- Implementation of Integrated Power Development Scheme (IPDS) by MSEDCL & appraisal thereof -

Ref :-. MERC/Capex/20152016/ 1464 dtd. 10.02.2016.

Preamble:-

Govt. of India has sanctioned Integrated Power Development Scheme (IPDS) for 45 circles under MSEDCL amounting to Rs.2300.43 Crs.in March -2016

The objectives of scheme was as below

i. Strengthening of sub-transmission and distribution network

ii. Metering.

iii. IT enablement of distribution sector

Accordingly, Maharashtra State Electricity Regulatory Commission (MERC) has accorded In principal approval to the Circle wise DPRs for IPDS Scheme on date 10.02.2016 for Rs 2300.43 Crs .

After approval from MERC for the scheme, tenders under IPDS were floated on full turnkey basis in Part-I at Corporate office level (i.e. Supply, Erection, Testing & Commissioning of Substations & associated lines) & Part-II at Zone office level (i.e. Supply, Erection, Testing & Commissioning of Distribution Transformer & associated lines, RHH connections, Feeder separation work,) in phase wise manner.

As per the targets set by PFC, the nodal agency, 22 circles were physically completed by March -2019. & remaining 23 circles by March 21 As such the scheme is physically completed by March 2021

MAHAVITARAN
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(A Govt. Of Maharashtra Undertaking)
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Maharashtra State Electricity Distribution Co. Ltd.
Prakashgad, Plot No. G-9, Bandra (E), Mumbai – 400 051
Tel : 26474507 (P), 26474211 (O) Fax : 26581465
Email : directorprojects@mahadiscom.in

The delay in completion is due to following reasons

- RI permission issues
- Non-availability of land for substations,
- Heavy rains had caused floods in major parts of Maharashtra, thus affecting the progress of the project
- Lock down imposed by Government of India due to Outbreak of COVID -19,

Considering the above reasons PFC has given extension for original work completion period from March-2019 to March-2020 & subsequently increased to March-2021.
The IPDS scheme is financially closed in March -2022.

Scheme coverage & physical progress:

The progress of major work carried out under IPDS Scheme is as below-

Sr. No.	Milestone Name	Unit	Sanction Quantity	Completed Quantity	Remark
1	33/11 KV S/stn NEW	No	126	120	Due to non availability of land and other permission issues 6 nos of substations were descoped
2	33/11 KV Additional Transformer	No	27	32	Work executed as per site conditions
3	33/11 KV Transformer Capacity Enhancement	No	59	68	Work executed as per site conditions
5	Aerial Bunched Cable	Km	2794	2356	
6	HT + LT Line (OH & UG)	Km	14514	7621	RI Permission issue for UG cable LT line is reduced due to reduce in scope of New DTCs Work executed as per site conditions hence final executed quantity is less
7	New DTC	No	5647	5033	Due to row issue, scope is reduced
8	Capacity Enhancement of DTC	No	3400	4119	Augmentation is increased due to non-availability of new locations at load centre
10	Metering	No	616973	519388	As per site requirement

MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd.
(A Govt. Of Maharashtra Undertaking)
CIN : U40109MH2005SGC153645

Office of the Director (Projects)
Maharashtra State Electricity Distribution Co. Ltd.
Prakashgad, Plot No. G-9, Bandra (E), Mumbai – 400 051
Tel : 26474507 (P), 26474211 (O) Fax : 26581465
Email : directorprojects@mahadiscom.in

The Circle wise details of executed work under IPDS scheme is enclosed as Annexure A.

The financial details on execution of the scheme is as below:

Sr No	Particulars	Sanctioned cost	As per final Execution cost	Amount utilized
1	Grant (60%)	1380	1351	1321
2	Utility Contribution (10%)	230	225	225
3	Counterpart Loan (30%)	690	675	675
4	Additional Loan			30
Total		**2300**	**2251**	**2251**

(% implementation ---98% of the sanctioned cost)

Asset Capitalization :- Rs. 2419.396 Crs. as on March 2022 (actual expenditure+ admistrative charges)

Loss trajectory & achievement thereof :-

The IPDS Scheme was sanctioned in March -2016 and the scheme is physically completed as on March 2021.The implementation of scheme resulted in loss reduction of utility is as below

FY	16-17	17-18	18-19	19-20	20-21	21-22
Loss reduction Trajectory as per IPDS guidelines	16.45	15.45	15.00	14.5	14.25	14.00
Actual AT&C Losses	18.88	14.38	16.23	19.8	20.73	14.49

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Email : directorprojects@mahadiscom.in

Supply Hours & transformer failure

FY	17-18	18-19	19-20	20-21	21-22
Supply hours (urban)	23.55	23.55	23.51	23.56	23.56
Transformer failure	7.5	8.26	9.38	7.98	8.01

Encl:- Annexure A

Submitted for information & appraisal please.

Director (Projects)
MSEDCL

Copy s.w.r.t:

1. Hon. Principal secretary of Energy, Mantralaya Mumbai
2. Hon. Chairman and Managing Director, MSEDCL,Mumbai

ISSUED ON
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SIG
17.10.2022

Annexure A

Physical and Financial Progress of IPDS

Sr No	Circle	LOA Cost (Rs In Crs)	Total Executed cost (Rs In Crs)	New Substation	Augmentation of Power	Additional of Power Transforme	New DTC	DTC Augmentation	AB Cable	HT + LT Line (UG & OH)
				Comm/Comm	Comm/Comm	Comm/Comm	Comm/Comm	Comm/Comm	Comm/Comm	Comm/Comm
1	Yavatmal	12.36	13.44	2	0	0	57	10	16	48
2	Amravati	121.94	120.75	7	5	0	201	102	114	410
3	Chandrapur	63.81	56.39	7	0	0	127	83	22	145
4	Gadchiroli	31.86	29.56	3	0	1	56	62	19	93
5	Akola	20.54	18.20	2	0	0	43	20	6	47
6	Buldhana	19.87	17.18	3	0	0	42	11	14	43
7	Washim	14.74	11.76	1	0	0	68	22	9	40
8	Nagpur R	112.69	127.93	1	5	0	133	18	20	560
9	Nagpur U	132.59	338.18	4	0	1	126	214	48	804
10	Nagpur DF	57.36		3	0	3	190	99	98	331
11	Wardha	37.13	40.13	3	2	4	82	43	25	99
12	Bhandara	20.37	15.29	1	0	0	68	52	10	58
13	Gondia	32.63	32.62	3	3	3	73	74	22	86
14	Hingoli	28.08	26.06	2	0	0	80	53	52	139
15	Nanded	91.05	77.59	4	4	2	197	68	178	328
16	Parbhani	67.65	53.48	5	2	3	103	133	105	141
17	Beed	47.46	37.72	0	8	1	244	163	84	160
18	Latur	59.42	57.44	1	4	0	205	130	42	245
19	Osmanabad	68.55	42.96	7	2	0	147	135	47	284
20	Aurangabad U	105.67	92.45	5	7	2	242	306	174	193
21	Aurangabad R	33.83	23.85	1	0	0	135	86	91	103
22	Jalna	36.45	31.47	3	2	1	86	56	129	96
26	Satara	26.07	23.71	1	1	0	42	95	0	59
27	Baramati	27.96	23.01	0	0	1	38	22	5	148
28	Solapur	27.17	22.64	0	0	2	150	108	35	99
29	Pune R	9.78	5.39	0	0	0	21	10	0	24

Sr No	Circle	LOA Cost (Rs In Crs)	Total Executed cost (Rs In Crs)	New Substation	Augmentation of Power	Additional of Power Transforme	New DTC	DTC Augmentation	AB Cable	HT + LT Line (UG & OH)
				Comm/Comm	Comm/Comm	Comm/Comm	Comm/Comm	Comm/Comm	Comm/Comm	Comm/Comm
30	Rastapeth	70.53	75.88	6	0	0	71	13	1	161
31	Ganeshkhind	39.40	44.63	3	0	0	94	0	0	137
32	Kolhapur	67.70	43.86	2	0	0	79	169	17	196
33	Sangli	27.99	20.53	0	3	0	88	144	3	70
34	Ratnagiri	36.39	34.10	0	1	1	79	119	51	234
35	Sindhudurg	46.28	29.66	1	0	0	34	30	37	113
23	Jalgaon	95.40	85.36	7	6	2	328	216	235	221
24	Nandurbar	37.04	35.17	3	2	1	130	163	35	128
25	Dhule	64.32	50.45	4	1	1	250	208	123	125
36	Vasai	75.83	102.81	4	0	0	153	96	47	308
37	Palghar	10.48	10.13	1	0	0	2	17	5	22
38	Kalyan II	49.86	27.29	3	0	0	39	60	18	105
39	Kalyan I	65.61	56.04	1	0	0	63	179	46	124
40	Bhiwandi DF	29.95	23.61	0	0	0	50	109	0	35
41	Pen	21.89	14.31	0	0	0	39	25	3	76
42	Vashi	20.80	17.22	0	0	0	8	27	0	57
43	Thane U	54.43	51.50	2	0	0	112	12	0	89
44	Ahmednagar	86.91	97.19	7	8	2	218	157	236	340
45	Malegaon	50.44	47.41	4	0	1	154	131	121	120
46	Nashik U	42.76	44.96	3	2	0	86	69	15	176
	Total	2301.02	2251.31	120	68	32	5033	4119	2356	7621

RAPDRP Part B : Cost Benefit Analysis for FY 2021-22

Sr.No.	R-APDRP Towns	Project cost	Billing Eff. of Base lines	Inf for the period 2021-22		2021-22			
				Billing Eff. for 18-19	Total inputs for 18-19 (Mus)	Increase in billing eff.	Total units saved (MUs)	ARR in Rs (Gross Revenue / total Input)	Total cost saved (Rs Lakhs)
1	ACHALPUR	23.17	57.04	54.76	81.55	-2.28	-1.86	4.71	-87.57
2	AHMADPUR	13.34	43.55	43.10	35.34	-0.45	-0.16	3.63	-5.80
3	AHMEDNAGAR	55.90	73.13	82.24	629.58	9.11	57.34	7.90	4532.56
4	AKKALKOT	4.12	70.99	79.43	19.06	8.44	1.61	6.89	110.76
5	AKOLA	107.65	76.08	64.70	357.62	-11.38	-40.68	7.01	-2851.47
6	AKOT	6.45	57.96	82.28	55.41	24.32	13.47	9.39	1265.74
7	AMALNER	6.81	78.02	75.46	49.63	-2.56	-1.27	7.02	-89.02
8	AMBEJOGAI	8.40	54.34	77.01	41.54	22.67	9.42	8.78	826.72
9	AMRAVATI	40.23	81.73	71.30	483.28	-10.43	-50.41	6.98	-3519.87
10	ANJANGAON	5.19	57.14	56.94	25.50	-0.20	-0.05	5.65	-2.87
11	ARVI	1.73	80.65	91.13	19.72	10.48	2.07	8.75	180.93
12	ASHTA	17.60	79.70	97.46	47.59	17.76	8.45	7.51	634.61
13	AUSA	4.97	74.34	72.63	19.55	-1.71	-0.34	7.58	-25.39
14	BALAPUR	1.00	55.79	63.83	14.21	8.04	1.14	5.43	61.99
15	BALLARPUR	1.70	81.38	92.08	53.15	10.70	5.69	9.37	532.91
16	BARAMATI	49.60	82.88	83.70	53.01	0.82	0.43	8.77	37.97
17	BARSHI	8.02	81.40	86.33	73.10	4.93	3.60	8.23	296.42
18	BASMATH	6.47	57.08	46.43	57.27	-10.65	-6.10	4.05	-247.07
19	BEED	56.23	56.92	50.25	159.17	-6.67	-10.61	4.47	-473.95
20	BHADRAWATI	3.04	86.10	87.37	46.41	1.27	0.59	6.99	41.31
21	BHANDARA	5.74	74.71	82.54	64.68	7.83	5.06	9.79	495.79
22	BHUSAWAL	24.91	56.82	52.48	137.76	-4.34	-5.98	4.99	-298.67
23	BRAHMAPURI	2.40	72.79	81.78	23.38	8.99	2.10	8.80	184.93
24	BULDHANA	10.38	88.64	64.58	57.70	-24.06	-13.89	6.07	-842.50
25	CHALISGAON	10.20	68.05	61.30	45.09	-6.75	-3.04	6.90	-209.80
26	CHANDRAPUR	23.01	86.03	93.24	625.63	7.21	45.08	8.28	3733.64
27	CHIKHLI	8.87	69.33	43.88	36.21	-25.45	-9.22	4.67	-430.64
28	CHIPLUN	22.81	79.67	79.12	73.70	-0.55	-0.41	10.35	-42.12
29	CHOPDA	6.96	68.37	60.93	43.31	-7.44	-3.22	6.91	-222.78
30	DAHANU	15.95	80.60	76.11	27.50	-4.49	-1.24	11.32	-139.83
31	DARYAPUR	7.41	60.33	73.82	27.69	13.49	3.73	6.38	238.16
32	DAUND	10.71	70.56	100.00	31.90	29.44	9.39	10.92	1025.54
33	DEGLUR	8.17	66.94	92.85	20.71	25.91	5.37	8.43	452.40
34	DEOLALI	10.25	85.24	87.05	59.86	1.81	1.08	9.54	103.39
35	DHARANGAON	2.95	60.49	74.11	20.51	13.62	2.79	4.18	116.72
36	DHULE	26.09	69.32	85.92	285.69	16.60	47.43	8.06	3824.65
37	DIGRAS	3.48	63.29	67.74	21.05	4.45	0.94	5.85	54.84
38	DONDAICHA	7.52	73.93	93.19	14.10	19.26	2.72	8.16	221.50
39	ERANDOL	2.53	60.15	61.07	21.99	0.92	0.20	5.60	11.34
40	GADCHIROLI	8.99	81.61	84.20	35.26	2.59	0.91	8.81	80.60
41	GANGAKHED	5.23	65.38	78.59	21.86	13.21	2.89	6.94	200.34
42	GONDIA	38.55	70.79	75.17	86.84	4.38	3.80	8.45	321.17
43	GREATER MUMBAI	1114.42	82.79	100.00	5211.97	17.21	897.02	10.83	97148.25
44	HINGANGHAT	7.42	81.24	84.84	81.51	3.60	2.93	7.48	219.35
45	HINGOLI	6.22	49.06	63.38	45.52	14.32	6.52	8.07	525.83
46	ICHALKARANJI	79.37	87.41	36.19	3159.75	-51.22	-1618.30	3.35	-54141.99
47	IGATPURI	5.13	69.02	81.40	23.82	12.38	2.95	9.17	270.43
48	JAISINGPUR	7.14	85.49	91.56	70.23	6.07	4.26	8.60	366.49
49	JALNA	87.62	53.58	62.86	132.11	9.28	12.26	6.08	745.44
50	JINTUR	4.56	46.89	45.72	31.41	-1.17	-0.37	2.89	-10.64
51	KAMPTEE	9.03	53.02	72.44	85.19	19.42	16.54	8.58	1419.80
52	KANNAD	11.03	40.97	42.25	25.30	1.28	0.32	4.02	12.99
53	KARAD	5.95	79.76	85.76	39.32	6.00	2.36	9.29	219.24
54	KARANJA	7.60	79.94	59.53	50.83	-20.41	-10.37	8.77	-910.03
55	KATOL	4.44	79.78	79.03	21.75	-0.75	-0.16	8.61	-14.07
56	KHAMGAON	7.04	77.33	83.42	103.02	6.09	6.27	9.09	570.33
57	KHOPOLI	20.50	82.40	100.00	203.19	17.60	35.75	9.61	3434.66
58	KOPARGAON	8.06	83.60	85.57	42.75	1.97	0.84	8.39	70.47
59	LATUR	48.84	78.85	84.19	261.61	5.34	13.96	9.34	1304.81
60	LONAVALA	20.88	80.71	89.46	90.51	8.75	7.92	11.71	927.86
61	MAJALGAON	2.62	82.44	29.50	37.97	-52.94	-20.10	2.90	-583.93
62	MALEGAON	21.72	44.42	100.00	234.51	55.58	130.34	6.52	8495.62

Sr.No.	R-APDRP Towns	Project cost	Billing Eff. of Base lines	Inf for the period 2021-22		2021-22			
				Billing Eff. for 18-19	Total inputs for 18-19 (Mus)	Increase in billing eff.	Total units saved (MUs)	ARR in Rs (Gross Revenue / total Input)	Total cost saved (Rs Lakhs)
63	MALKAPUR	8.97	81.28	92.34	38.90	11.06	4.30	10.94	470.71
64	MANMAD	9.15	53.57	74.09	47.86	20.52	9.82	6.93	680.49
65	MEHKAR	3.71	55.98	88.92	16.42	32.94	5.41	10.19	551.40
66	MORSHI	4.20	70.31	71.57	18.29	1.26	0.23	6.69	15.47
67	MURTIJAPUR	6.30	75.92	71.88	32.22	-4.04	-1.30	6.68	-86.88
68	NALASOPARA	27.00	88.43	92.06	347.35	3.63	12.62	9.27	1169.70
69	NANDED	30.13	61.31	58.29	522.76	-3.02	-15.81	6.86	-1083.72
70	NANDURA	2.66	76.48	37.30	20.51	-39.18	-8.04	3.63	-291.49
71	NANDURBAR	10.28	78.10	67.20	73.90	-10.90	-8.06	6.55	-528.08
72	NILANGA	4.49	66.13	67.85	20.78	1.72	0.36	6.27	22.35
73	OSMANABAD	11.83	85.49	77.76	68.47	-7.73	-5.29	6.86	-363.26
74	PACHORA	14.09	71.86	71.95	38.71	0.09	0.03	7.17	2.40
75	PAITHAN	5.51	75.93	51.80	16.93	-24.13	-4.09	4.44	-181.23
76	PALGHAR	5.98	84.62	100.00	107.58	15.38	16.54	9.61	1590.48
77	PANDHARPUR	30.00	87.39	88.73	52.51	1.34	0.70	8.05	56.53
78	PARBHANI	24.75	58.98	65.73	164.21	6.75	11.09	7.36	816.67
79	PARLI	9.20	77.14	42.55	75.12	-34.59	-25.98	4.37	-1135.52
80	PAROLA	3.49	74.28	65.56	22.68	-8.72	-1.98	6.39	-126.40
81	PATHRI	3.65	51.07	55.41	24.40	4.34	1.06	2.55	26.95
82	PEN	9.24	83.81	70.56	38.52	-13.25	-5.10	7.64	-389.93
83	PHALTAN	2.58	79.45	83.84	28.34	4.39	1.25	8.18	101.80
84	PULGAON	2.14	73.41	88.23	25.31	14.82	3.75	9.64	361.68
85	PURNA	4.96	54.72	59.83	13.07	5.11	0.67	5.65	37.75
86	PUSAD	13.84	57.84	89.46	32.83	31.62	10.38	8.44	876.05
87	RATNAGIRI	17.24	83.50	87.32	147.84	3.82	5.64	8.59	484.66
88	SAILU	5.78	73.74	67.28	47.50	-6.46	-3.07	6.08	-186.54
89	SANGAMNER	9.29	79.85	64.96	74.11	-14.89	-11.03	5.92	-653.73
90	SANGLI	32.98	71.72	90.68	513.64	18.96	97.38	8.58	8352.33
91	SATANA	5.78	68.96	68.42	19.98	-0.54	-0.11	6.28	-6.74
92	SATARA	8.00	78.01	88.41	346.81	10.40	36.07	9.34	3368.96
93	SHAHADA	7.80	49.83	64.97	37.40	15.14	5.66	9.44	534.27
94	SHEGAON	4.18	79.91	91.97	33.11	12.06	3.99	10.91	435.67
95	SHIRPUR	6.51	67.49	70.28	41.25	2.79	1.15	7.12	82.02
96	SILLOD	11.85	44.55	76.26	29.36	31.71	9.31	5.38	500.76
97	SOLAPUR	106.57	79.39	87.41	499.33	8.02	40.07	8.56	3429.11
98	TALEGAON	25.10	82.38	79.25	73.38	-3.13	-2.30	7.58	-174.04
99	TASGAON	3.95	79.01	86.82	23.75	7.81	1.85	7.87	145.87
100	TULJAPUR	5.37	77.45	100.00	11.43	22.55	2.58	8.34	214.86
101	TUMSAR	5.58	83.23	80.48	22.23	-2.75	-0.61	8.19	-50.07
102	UDGIR	13.60	76.13	80.53	64.01	4.40	2.81	6.56	184.58
103	UMARGA	2.00	57.03	1.44	610.74	-55.59	-339.54	0.11	-379.16
104	UMARKHED	3.68	63.79	47.37	29.30	-16.42	-4.81	5.33	-256.54
105	UMRED	5.56	77.59	96.08	22.97	18.49	4.25	9.64	409.34
106	URAN-ISLAMPUR	25.88	76.40	94.36	62.36	17.96	11.20	8.92	999.43
107	VAIJAPUR	3.96	57.28	54.21	21.95	-3.07	-0.67	4.90	-33.04
108	VASAI	32.88	86.56	43.49	207.74	-43.07	-89.48	4.57	-4093.18
109	VIRAR	59.15	84.89	48.59	545.03	-36.30	-197.82	5.03	-9950.02
110	VITA	6.91	76.29	73.17	35.74	-3.12	-1.11	5.75	-64.07
111	WADGAON	7.00	84.93	68.28	66.01	-16.65	-10.99	10.70	-1176.29
112	WAI	3.79	80.83	91.14	98.81	10.31	10.19	8.16	831.33
113	WANI	13.70	72.51	80.36	61.80	7.85	4.85	7.96	386.19
114	WARDHA	25.67	76.33	92.37	75.23	16.04	12.07	9.77	1179.03
115	WARORA	2.59	76.92	83.50	37.33	6.58	2.46	8.10	199.09
116	WARUD	3.75	65.50	76.05	25.14	10.55	2.65	8.23	218.13
117	WASHIM	7.72	56.27	76.87	42.28	20.60	8.71	6.71	584.73
118	YAVATMAL	25.02	63.04	79.20	197.13	16.16	31.87	12.28	3913.35
119	YAWAL	4.44	61.92	59.66	15.27	-2.26	-0.35	5.59	-19.32
120	YEOLA	6.68	68.13	86.05	21.79	17.92	3.91	8.17	319.01
Total		**2922.43**			**20065.80**				**82492.39**
								Total benefit : Rs	**824.92** Crs

ANNEXURE-1_CBA 5 Lakh APCC Solar

Pump Capacity HP	Average Power Purchase cost Rs/Unit	MERC rate		Cross Subsidy		GOM subsidy		Consumer Pay rate		Average Cost of Supply Rs/Unit	FAC Rs./Unit
		DC Rs./HP/Month	EC+WC Rs /Unit	DC Rs./HP/Month	FAC+EC+WC Rs /Unit	DC Rs./HP/Month	EC+WC Rs /Unit	DC Rs./HP/Month	EC+WC Rs /Unit		
3	5.68	47	4.17	0	4.09	15	2.03	32	2.14	8.46	0.2
5	5.68	47	4.17	0	4.09	15	1.73	32	2.44	8.46	0.2
7.5	5.68	47	4.17	0	4.09	15	1.73	32	2.44	8.46	0.2

Pump Capacity HP	Pump Qty. (Nos.)	Avg. Units Generated per Solar Pump Kwh/Month	Total Solar Units Generated by solar pump Kwh/Year (Units)	T&D Loss Units @15% Kwh/Year (Units)	Actual Units Required after adding Loss Units/Year (Units)	Power Purchse Cost for Units Generated by solar pump/Year @ Rs.5.68/Kwh (Rs.)	Power Purchse Cost for T&D Loss Units/Year @ Rs.5.68/Kwh (Rs.)	Power Purchse Cost considering Loss Units/Year @ Rs.5.68/Kwh (Rs.)	Saving in Cross Subsidy/Year @ Rs.3.65/Kwh (Rs.)	Saving in Farmer Energy Bill as per MERC Rate per year (Rs.)*	Saving in Govt. Subsidy/Year (Rs.)**	Saving in Farmer Energy Bill as per Pay Rate per year (Rs.)***	REC cost saving for RPO @ Rs. 1 Per Unit (Rs.)
3	700000	329.5	2767800000	488435294	3256235294	15721104000	2774312471	18495416471	11320302000	13279686000	5996634000	7283052000	2767800000
5	200000	549.1	1317840000	232560000	1550400000	7485331200	1320940800	8806272000	5389965600	6322960800	2459863200	3863097600	1317840000
7.5	100000	823.75	988500000	174441176	1162941176	5614680000	990825882	6605505882	4042965000	4742745000	1845105000	2897640000	988500000
Total	**1000000**		**5074140000**	**895436471**	**5969576471**	**28821115200**	**5086079153**	**33907194353**	**20753232600**	**24345391800**	**10301602200**	**14043789600**	**5074140000**

Pump Capacity HP	Pump Qty. (Nos.)	Avg. Units Generated per Solar Pump Kwh/Month	Total Solar Units Generated by solar pump Kwh/Year (MUs)	T&D Loss Units @15% Kwh/Year (MUs)	Actual Units Required after adding Loss Units/Year (MUs)	Power Purchse Cost for Units Generated by solar pump/Year @ Rs.5.68/Kwh (Rs.)	Power Purchse Cost for T&D Loss Units/Year @ Rs.5.68/Kwh (Rs.)	Power Purchse Cost considering Loss Units/Year @ Rs.5.68/Kwh (Rs.)	Saving in Cross Subsidy/Year @ Rs.3.65/Kwh (Rs. Cr.)	Saving in Farmer Energy Bill as per MERC Rate per year (Rs. Cr.)*	Saving in Govt. Subsidy/Year (Rs. Cr.)**	Saving in Farmer Energy Bill as per Pay Rate per year (Rs. Cr.)***	REC cost saving for RPO @ Rs. 1 Per Unit (Rs. Cr.)
3	700000	329.5	2767.80	488.44	3256.24	1572.11	277.43	1849.54	1132.03	1327.97	599.66	728.31	276.78
5	200000	549.1	1317.84	232.56	1550.40	748.53	132.09	880.63	539.00	632.30	245.99	386.31	131.78
7.5	100000	823.75	988.50	174.44	1162.94	561.47	99.08	660.55	404.30	474.27	184.51	289.76	98.85
Total	**1000000**		**5074.14**	**895.44**	**5969.58**	**2882.11**	**508.61**	**3390.72**	**2075.32**	**2434.54**	**1030.16**	**1404.38**	**507.41**

* As per MERC Rate, EC+WC @ Rs. 4.17/unit for 3 HP, 5 HP & 7.5 HP. DC rate for all pumps @ Rs. 47/HP/Month. FOCA @ Rs. 0.2/unit
** Govt Subsidy Rate, EC+WC @ Rs. 2.03/unit for 3 HP and Rs. 1.73/unit for 5 HP & 7.5 HP. DC rate for all pumps @ Rs. 15/HP/Month.
*** As per Consumer Rate, EC+WC @ Rs. 2.14/unit for 3 HP and Rs. 2.44/unit for 5 HP & 7.5 HP. DC rate for all pumps @ Rs. 32/HP/Month. FOCA @ Rs. 0.2/unit

Pump Capacity HP	Average Power Purchase cost Rs/Unit	MERC rate		Cross Subsidy		GOM subsidy		Consumer Pay rate		Average Cost of Supply Rs/Unit	FAC Rs./Unit
		DC Rs./HP/Month	EC+WC Rs /Unit	DC Rs./HP/Month	FAC+EC+WC Rs /Unit	DC Rs./HP/Month	EC+WC Rs /Unit	DC Rs./HP/Month	EC+WC Rs /Unit		
3	5.68	47	4.17	0	4.09	15	2.03	32	2.14	8.46	0.2
5	5.68	47	4.17	0	4.09	15	1.73	32	2.44	8.46	0.2
7.5	5.68	47	4.17	0	4.09	15	1.73	32	2.44	8.46	0.2

Pump Capacity HP	Pump Qty. (Nos.)	Avg. Units Generated per Solar Pump Kwh/Month	Total Solar Units Generated by solar pump Kwh/Year (Units)	T&D Loss Units @15% Kwh/Year (Units)	Actual Units Required after adding Loss Units/Year (Units)	Power Purchse Cost for Units Generated by solar pump/Year @ Rs.5.68/Kwh (Rs.)	Power Purchse Cost for T&D Loss Units/Year @ Rs.5.68/Kwh (Rs.)	Power Purchse Cost considering Loss Units/Year @ Rs.5.68/Kwh (Rs.)	Saving in Cross Subsidy/Year @ Rs.3.65/Kwh (Rs.)	Saving in Farmer Energy Bill as per MERC Rate per year (Rs.)*	Saving in Govt. Subsidy/Year (Rs.)**	Saving in Farmer Energy Bill as per Pay Rate per year (Rs.)***	REC cost saving for RPO @ Rs. 1 Per Unit (Rs.)
3	177239	329.5	700803801.4	123671259	824475061	3980565592	702452752	4683018344	2866287548	3362401341	1518340886	1844060455	700803801.4
5	100594	549.1	662831060	116970187	779801247	3764880421	664390663	4429271083	2710979036	3180245561	1237231934	1943013626	662831060
7.5	27658	823.75	273401729.1	48247364	321649093	1552921821	274045027	1826966849	1118213072	1311759923	510323619	801436304	273401729.1
Total	**305491**		**1637036591**	**288888810**	**1925925401**	**9298367834**	**1640888441**	**10939256276**	**6695479655**	**7854406824**	**3265896439**	**4588510385**	**1637036591**

Pump Capacity HP	Pump Qty. (Nos.)	Avg. Units Generated per Solar Pump Kwh/Month	Total Solar Units Generated by solar pump Kwh/Year (MUs)	T&D Loss Units @15% Kwh/Year (MUs)	Actual Units Required after adding Loss Units/Year (MUs)	Power Purchse Cost for Units Generated by solar pump/Year @ Rs.5.68/Kwh (Rs.)	Power Purchse Cost for T&D Loss Units/Year @ Rs.5.68/Kwh (Rs.)	Power Purchse Cost considering Loss Units/Year @ Rs.5.68/Kwh (Rs.)	Saving in Cross Subsidy/Year @ Rs.3.65/Kwh (Rs. Cr.)	Saving in Farmer Energy Bill as per MERC Rate per year (Rs. Cr.)*	Saving in Govt. Subsidy/Year (Rs. Cr.)**	Saving in Farmer Energy Bill as per Pay Rate per year (Rs. Cr.)***	REC cost saving for RPO @ Rs. 1 Per Unit (Rs. Cr.)
3	177239	329.5	700.80	123.67	824.48	398.06	70.25	468.30	286.63	336.24	151.83	184.41	70.08
5	100594	549.1	662.83	116.97	779.80	376.49	66.44	442.93	271.10	318.02	123.72	194.30	66.28
7.5	27658	823.75	273.40	48.25	321.65	155.29	27.40	182.70	111.82	131.18	51.03	80.14	27.34
Total	**305491**		**1637.04**	**288.89**	**1925.93**	**929.84**	**164.09**	**1093.93**	**669.55**	**785.44**	**326.59**	**458.85**	**163.70**

* As per MERC Rate, EC+WC @ Rs. 4.17/unit for 3 HP, 5 HP & 7.5 HP. DC rate for all pumps @ Rs. 47/HP/Month. FOCA @ Rs. 0.2/unit
** Govt Subsidy Rate, EC+WC @ Rs. 2.03/unit for 3 HP and Rs. 1.73/unit for 5 HP & 7.5 HP. DC rate for all pumps @ Rs. 15/HP/Month.
*** As per Consumer Rate, EC+WC @ Rs. 2.14/unit for 3 HP and Rs. 2.44/unit for 5 HP & 7.5 HP. DC rate for all pumps @ Rs. 32/HP/Month. FOCA @ Rs. 0.2/unit