

MAHARASHRA STATE ELECTRICITY TRANSMISSION CO.LTD. CIN NO. U40109MH2005SGC153646

Office of The Executive Director

Maharashra State Load Dispatch Center,

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No.: ED/MSLDC/MSETCL/

NO 0 2 4 8 69,

Date: 03.12.2024

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

Sub.: Submission of Revised MSLDC Petition for MYT Tariff Determination for the Control Period of FY 2025-26 to FY 2029-30 including True up of FY 2022-23 and FY 2023-24 with provisional True up of FY 2024-25

Ref.: Technical Validation Session (TVS) held in the office of Hon'ble Commission on 27.11.2024

Sir.

MSLDC would humbly wish to submit Revised Petition for MYT Tariff Determination for the Control Period of FY 2025-26 to FY 2029-30 including True up of FY 2022-23 and FY 2023-24 with provisional True up of FY 2024-25 as per provisions of MERC MYT Regulations, 2019 and MERC MYT Regulations, 2024, as applicable. This Revised Petition is based on the discussion during TVS held on 27.11.2024. MSLDC humbly requests to consider this Revised Petition and record it for further processing.

Thanking You,

Yours's Faithfully,

Mr. Sharhank S.Jewalikar Executive Director MSLDC, Airoli

Enclosure: (1 Original) - Hard Copy

Copy submitted through mail w.r.to:-

- 1) The Chairman & Managing Director, MSETCL
- 2) The Director (Operations), MSETCL.
- 3) The Director (Finance), MSETCL

Copy to:-

1) The Chief Engineer, MSLDC, MSETCL

Sud



MSLDC Petition for MYT Tariff Determination for the Control Period of FY 2025-26 to FY 2029-30 including True up of FY 2022-23 and FY 2023-24 with provisional True up of FY 2024-25

Submitted to: Maharashtra Electricity Regulatory Commission, Mumbai

Submitted By

Maharashtra State Load Despatch Centre

(Maharashtra State Electricity Transmission Company Ltd.)

Airoli

ADV. RAJENDRAKUMAR L. WAGHMARE NOTARY GOVT. OF INDIA HAVI MUMBAI, DIET. THANE-400768

TRUE COP

Page 1 of 193

MSLDC MYT Petition for FY 2025-26 to FY 2029-30

SL No	Particulars	Page number		
1.	Covering letter	Attached separately		
2,	Form - II	5		
3.	Form – III	9		
4.	Affidavit	10		
5.	Main text of Petition	11 to 194		
6.	List of Annexure	Page 195		
7.	Annexure	Page 196 onwards		





Form II

[See Regulation 16]

BEFORE THE MAHARASHTRA ELECTRICITY REGULATORY COMMISSION, MUMBAI

Filling No.

Case No.

(To be filled by theOffice)

IN THE MATTER OF

Petition for Tariff / Fees and Charges Determination for the MYT Control Period of FY 2025-26 to FY 2029-

30 including True up of FY 2022-23 and FY 2023-24 with provisional True up of FY 2024-25

AND

IN THE MATTER OF

Maharashtra State Load Despatch Centre, Airoli

...Petitioner

MSEDCL

TPCL-D

AEML-D

BEST

Indian Railways (Deemed Distribution Licencees)

Mindspace Properties (Deemed Distribution Licencees)

Gigaplex Properties (Deemed Distribution Licences)

KRC Infratructure (Deemed Distribution Licencees)

Nidar Utilities

MADC

E ON Phase-1

E ON Phase-2

JNPT

Laxmipati Balaji

AEML SEEPZ Ltd

HADAPSAR SEZ

MANJARI SEZ

..Respondent



Fact of the case/Petition be stated in short:

The Hon'ble Commission, in exercise of the powers conferred by relevant clauses under Section 181 read with clause under Section 36, 39, 40, 41, 51, 62, 64, 65 and 86 of the EA, 2003, has published the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2024 (the MYT Regulations 2024) on 19th August 2024. The control period of the MYT Regulations 2024 is five years' period, with effect from April 1, 2025 to March 31, 2030.

In accordance with Regulations 5.1(a) MYT Regulations 2024, the MYT Petition should contain the following:

- Truing-up for FY 2022-23 and FY 2023-24 to be carried out under the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019;
- Provisional Truing-up for FY 2024-25 to be carried out under the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019;
- Aggregate Revenue Requirement for the next Control Period (FY 2025-2026 to FY 2029-2030);
- Revenue from the sale of power at existing Tariffs and charges and projected revenue gap for each year of the Control Period;
- v) Proposed category-wise Tariff or Fees & Charges for each year of the next Control Period under MYT Regulations, 2024.

In line with above provisions, the present petition is being filed before the Hon'ble Commission for:

- Approval of Truing-up for FY 2022-23 to FY 2023-24;
- Approval of Provisional Truing-up for FY 2024-25; and
- Approval of revised ARR forecast for FY 2025-26 to FY 2029-2030 and Determination of Fees and Charges for the same period.





Submission/Ground in support of the case:

In accordance with Regulations 5.1(a) MYT Regulations 2024, the present Petition contains the following:

- Truing-up for FY 2022-23 and FY 2023-24 to be carried out under the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019;
- Provisional Truing-up for FY 2024-25 to be carried out under the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019;
- Aggregate Revenue Requirement for the next Control Period (FY 2025-2026 to FY 2029-2030);
- Revenue from the sale of power at existing Tariffs and charges and projected revenue gap for each year of the Control Period;
- Proposed category-wise Tariff or Fees & Charges for each year of the next Control Period under MYT Regulations, 2024.

MSLDC respectfully prays the Hon'ble Commission to:

- Admit the MYT Petition in accordance with MERC MYT Regulations, 2024.
- Allow truing-up for FY 2022-23 to FY 2023-24 of Maharashtra State Load Despatch Centre (MSLDC) based on the Audited Accounts and Allocation Statement for the respective financial year, and according to the applicable provisions under MERC (Multi Year Tariff) Regulations, 2019.
- Allow and approve GFA and capitalization in true-up years as per audited account of the Petitioner as per detailed explanation submitted by the Petitioner.
- Allow Provisional true up for FY 2024-25 of MSLDC according to applicable provisions under MERC (Multi Year Tariff) Regulations, 2019.
- Approve O&M expenses as projected by the Petitioner for FY 2025-26 to FY 2029-30 during the next control period including impact of additional salary expenses due to introduction of new pay scale and wage revision arrear.
- Approve MSLDC Charges for FY 2025-26 to FY 2029-30 as per MERC MYT Regulations 2024 that would help in recovery of consolidated ARR for respective years of the Control Period.
- 7. Allow MSLDC to use the LDCD fund, ascreated by the Hon'ble Commission in earlier MYT



- Order and MTR order, for the purpose of financing the capitalization during FY 2022-23 onwards.
- Allow MSLDC to submit the details about Key Performance Parameters (KPI) of FY 2022-23 and FY 2023-24 during the regulatory proceeding of the present Petition. Further, it is requested to approve the additional RoE on the basis of the KPI data, to be submitted. The same KPI data may be used to approve the RoE (additional RoE) under present control period.
- Continue the various charges i.e., Short-term Open Access Application Processing Fees, Registration or Connection Fees, Scheduling Fees/Charges and Re-Scheduling Fees, Renewable Energy Certificate Processing Fees as approved by the Hon'ble Commission in MSLDC MTR Order in Case No. 233 of 2022.
- Approve the SLDC's request for relaxation of certain parameters as sought in the Petition, while approving this Petition.
- 11. Allow the Petitioner to file the mid-term review Petition with other licensees so that the last two years' fees and charges of present control period can be reviewed based on true-up of appropriate years. The same is requested under 'Regulation 149 Power to Relax' of MYT Regulations, 2024.
- Allow the Petitioner for further submission, addition and alteration to this petition as may be necessary from time to time.
- Grant an opportunity in person before Hon'ble Commission during the hearing on the above matter.
- 14. Condone any inadvertent omission/errors/short comings and permit the petitioner to add/change/modify/alter this filing and make future submissions as may be required at a future date.

Place: Airoli, Navi Mumbai

Date: 03/12/2024

Mr. Shishank S.Jewalikar Executive Director MSLDC, Airoli



Form III

[See Regulation 17]

BEFORE THE MAHARASHTRA REGULATORY COMMISSION, MUMBAL

Filling No.

Case No.

(To be filled by theOffice)

IN THE MATTER OF

Petition for Tariff/ Fees and Charges Determination for the MYT Control Period of FY 2025-26 to FY 2029-30 including True up of FY 2022-23 and FY 2023-24 with provisional True up of FY 2024-25

AND

IN THE MATTER OF

Maharashtra State Load Despatch Centre, Airoli

Petitioner

MSEDCL

TPCL-D

AEML-D

BEST

Indian Railways (Deemed Distribution Licensee)

Mind space Properties (Deemed Distribution Licensee)

Gigaplex Properties (Deemed Distribution Licensee)

KRC Infrastructure (Deemed Distribution Licensee)

Nidar Utilities

MADC

E ON Phase-1

E ON Phase-2

JNPT

Laxmipati Balaji

AEML SEEPZ Ltd

HADAPSAR SEZ

MANJARI SEZ

O PROVIDE GOVI

.....Respondent

Affidavit verifying the Petition/ reply/application

 Mr. Shashank S. Jewalikar, son of Shri Subhashrao Deshpande, aged 53 years residing at Airoli. Navi Mumbai do solemnly affirm and say as follows:

I am the petitioner/applicant/respondent etc., or I am a Director/Secretary/Partner/authorised representative of the petitioner/applicant/respondent in the above matter and am duly authorised and competent to make this affidavit.

The statements made in paragraphs of the petition/application/reply are true to my knowledge and belief and statements made in paragraphs 01 to 11 are based on information and I believe them to be true.

I say that there are no proceedings pending in any court of law/tribunal or arbitrator or any other authority, wherein the Petitioners are a party and where issues arising and/or reliefs sought are identical or similar to the issues arising in the matter pending before the Commission,

Solemnly affirm at Airoli, Navi Mumbai on this 03rd day of December, 2024 that the contents of the above affidavit are true to my knowledge, no part of it is false and nothing material has been concealed therefrom.

Identified before me

Place: Airoli, Navi Mumbai

Dated: 03rd December, 2024

Mr. Shashank S.Jewalikar Executive Director MSLDC, Airoli

Document Presented By Mr. INTE Amo

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MSLDC Petition for MYT Tariff Determination for the Control Period of FY 2025-26 to FY 2029-30 including True up of FY 2022-23 and FY 2023-24 with provisional True up of FY 2024-25

Submitted to

Maharashtra Electricity Regulatory Commission Mumbai

Submitted By

Maharashtra State Load Despatch Centre

(Maharashtra State Electricity Transmission Company Ltd.)

Airoli

December, 2024





Table of Contents

I. Bas	ckground	1
2. Ap	proach for the filing the MYT Petition	20
3. Tro	uing-up for FY 2022-23 and FY 2023-24	21
3.1.	Operation &Maintenance	2
3,2,	Interest on Working Capital.	20
3.3	RLDC Fees	30
3.4.	Capitalization	32
3.5.	Depreciation	44
3.6.	Interest &Financial Charges	40
3.7.	Return on Equity	47
3.8.	Income Tax	49
3.9.	Non-Tariff Income	50
3.10.	Income from Open Access Charges.	51
3.11.	Income from Monthly Operating Charges	52
3.12,	Summary of True-Up for FY 2022-23 and FY 2023-24.	52
3.13.	LDCD Fund	54
4. Pro	ovisional True-Up for FY 2024-25	56
4.1.	Operation & Maintenance Expenses.	57
4.2.	Interest on Working Capital	60
4.3.	RLDC Fees	61
4.4.	Capital Expenditure Plan and Capitalization	
4.5.	Depreciation	
4.6.		67
4.7.	Return on Equity	69
4.8.	Income Tax	71
4.9.	Non-Tariff Income	71
4.10.	Income from Open Access Charges	72
4.11.	Income from Monthly Operating Charges	73
4.12.	Summary of provisional True-Up for FY 2024-25	73

5	Ор	erational performance of SLDC during FY 2022-23 & FY 2023-24.	75
6.	CA	PEX and Capitalization Plan for MYT Period FY 2025-26 to FY 2029-30	8)
7.	AR	R forecast for FY 2025-26 to FY 2029-30	119
	7,1,	Operation & Maintenance Expenses	123
	7.2.	Interest on Working Capital	127
	7.3.	RLDC Fees	125
	7.4.	Capital Expenditure Plan and Capitalization	129
	7.5.	Depreciation	139
	7.6.	Interest &Financial Charges	142
	7.7.	Return on Equity	146
	7.8.	Income Tex	148
	7.9.	Non-Tariff Income	148
	7.10.	Income from Open Access Charges including scheduling	150
	7.11.	Summary of ARR for Control Period from FY 2025-26 to FY 2029-30	150
8.	Sha	ring of MSLDC Charges	152
9.	Fee	s to be charged by MSLDC	157
	9.1.	Registration or Connection Fees.	157
	9.2.	Scheduling and Re-Scheduling Fees.	157
	9.3.	Short Term Open Access Application Processing Fees	157
10	. Cor	npliance to Directives	159
	10.1.	Ring-fencing and Autonomy	159
	10.2.	Technology and Operational Systems Upgradation	162
	10.3.	Preparedness of SLDC in handling future challenges	180
	10.4.	Reactive Energy Charges	188
	10.5.	Submission of DPRs for new schemes and in-principle approved to lapsed schemes	190
1	. Pra	yers	191



List of Tables

Table 1: Operation and Maintenance Expenses for FY 2022-23 and FY 2023-24	22
Table 2 : Determination of escalation factors to derive normative O&M expenses	24
Table 3 : Sharing of Gains and Loss on account of O&M Expenses	25
Table 4 : SBI base rate (MCLR) prevailing during FY 2022-23 and FY 2023-24 and Interest rate considerate Working Capital	ered 27
Table 5: Interest on Working Capital for FY 2022-23 and FY 2023-24	28
Table 6: Sharing of gain / loss in case of Interest on Working Capital for FY 2022-23 and FY 2023-24	29
Table 7: Details of RLDC fees paid in FY 2022-23 and FY 2023-24	30
Table 8: RLDC Fees for FY 2022-23 and FY 2023-24	31
Table 9 : Actual Capitalization for FY 2022-23	32
Table 10 : Depreciation for FY 2022-23 and FY 2023-24	46
Table 11: Interest on normative Loan for FY 2022-23 and FY 2023-24	47
Table 12: Return on Equity for FY 2022-23 and FY 2023-24	48
Table 13: Non-Tariff Income for FY 2022-23 and FY 2023-24	50
Table 14: Income from Open Access charges for FY 2022-23 and FY 2023-24	51
Table 15: Income from Monthly Operating Charges for FY 22-23 and FY 2023-24	52
Table 16: Truing -Up for FY 2022-23 and FY 2023-24	53
Table 17 : LDCD fund for FY 2022-23 and FY 2023-24	54
Table 18 : O&M Expenses for FY 2024-25	60
Table 19 : Interest on Working Capital for FY 2024-25	60
Table 20 : RLDC Fee for FY 2024-25	62
Table 21 : Revised Capex and Capitalization for FY 2024-25	63
Table 22 : Depreciation for FY 2024-25	67
Table 22 : Depreciation for FY 2024-25 Table 23 : Interest on Loan for FY 2024-25	69
Table 24 : Return on Equity for FY 2024-25	70
Table 25 : Non-Tariff Income for FY 2024-25	72
Table 26 : Income from Open Access charges for FY 2024-25	73
Table 27 : Income from Monthly Operating Charges for FY 2024-25	73
Table 28 : Summary of Provisional True-up of FY 2024-25	73
Table 29: Operational performance of the MSLDC	75



Table 30 : ADMC for FY 2022-23 to FY 2023-24	79
Table 31: Projected Capitalization for FY 2025-26	83
Table 32: Projected Capitalization for FY 2026-27	86
Table 33: Projected Capitalization for FY 2027-28	88
Table 34: Projected Capitalization for FY 2028-29	90
Table 35: Projected Capitalization for FY 2029-30	92
Table 36: Projected Normative O&M Expenses for FY 2024-25	126
Table 37: Projected Normative O&M Expenses for FY 2025-26 to FY 2029-30	126
Table 38: Interest on Working Capital for FY 2025-26 to FY 2029-30	128
Table 39: RLDC Fees and Charges for FY 2025-26 and FY 2029-30	129
Table 40: Projected Capitalization for FY 2025-26 to FY 2029-30	130
Table 41: LDCD fund for FY 2025-26 and FY 2029-30	133
Table 42: Depreciation Estimated for FY 2025-26 to FY 2029-30	142
Table 43: Interest expenses for FY 2025-26 and FY 2029-30	145
Table 44: Return on Equity for FY 2025-26 and FY 2029-30	148
Table 45: Projected Non-Tariff Income for FY 2025-26 and FY 2029-30	149
Table 46: Income from Open Access Charges for FY 2025-25 and FY 2029-30	150
Table 47: Summary of Annual Fixed Charges for FY 2025-26 to FY 2029-30	150
Table 48: Sharing of TCR of past four years by system users	152
Table 49: Base TCR of past four years	153
Table 50: Projected base TCR for next control period	153
Table 51: Sharing of base TCR	154
Table 52: Sharing of MSLDC Charges projected for FY 2025-26 to FY 2029-30	155
Table 53: Proposed MSLDC Charges for FY 2025-26 to FY 2029-30	156
Table 54: Fees for FY 2025-26 to FY 2029-30	158





Abbreviation	Full Form
A&G	Administrative and General
ACI&P	Automation Communication Innovation and Protection
ACP	Aluminium Composite Panel
ADMC	Additional Deviation Management Charges
ADSM	Additional Deviation Charges
AFC	Annual Fixed Charges
ALDC	Area Load Dispatch Centre
AMC	Annual Maintenance Contract
AMR	Automated Meter Reading
ARR	Aggregate Revenue Requirement
ATC	Annual Transmission Capacity
AvC	Available Capacity
BMR	Bare Metal Recovery
BR	Board Resolution
CABIL	Capacity Building of Indian Load Dispatch Centers
CAMC	Comprehensive Annual Maintenance Contract
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CMD	Chairman and Managing Director
PI	Consumer Price Index
PI-IW	Consumer Price Index for Industrial Workers
CR. OP	control room operation
CSOC	Cyber Security Operation Centre
CSRP	Certified Subrogation Recovery Professional
CWIP	Capital Works In Progress
A	Deamess allowance
DDC	Direct Digital Controller
DLR	Dynamic Line Rating
DPR	Detailed Project Report
SM	Deviation Settlement Mechanism
A	Electricity Act
PABX	Electronic Private Automatic Branch Exchange
BSM	Final Balancing and Settlement Mechanism
CR	Fixed Cost Reconciliation
DR	Fixed Deposit Receipts
GAMS	General Algebraic Modeling System
-DAM	Green Day Ahead Market
)FA	Gross Fixed Asset
5-TAM	Green Term Ahead Market
ILC .	High Level Committee
HPX	Hindustan Power Ex-change



Abbreviation	Full Form
ICCP	Inter-Control Center Communications protocol
IEX	India Energy Exchange
IoWC	Interest on Working Capital
KPI	Key Performance Indicators
KRA	Key Result Area
LDC	Load Despatch Centre
LDCD	Load Despatch Centre Development
LOA	Letter of Award
LTS	Long Term Support
MCLR	Marginal Cost of Funds Based Landing Rate
MERC	Maharashtra Electricity Regulatory Commission
MOD	Ment Order Despatch
MOU	Memorandum of Understanding
MSEDCL	Maharashtra State Electricity Distribution Company Limited
MSETCL	Maharashtra State Electricity Transmission Company Limited
MSLDC	Maharashtra State Load Dispatch Centre
MTNL	Mahanagar Telephone Nigam Limited
MTR	Mid Term Review
MYT	Multi Year Tariff
O&M	Operations and Maintenance
OEM	Original equipment manufacturer
OPEX	Operational Expenditure
P&M	Plant and Machinery
PGCIL	Power Grid Corporation of India Limited
PIB	Press Information Bureau
PLCC	Power Line Carrier Communication
PMU	Project Management Unit
PNT	Phone-Line Network Transceiver
PO	Purchase Order
POSOCO	Power System Operation Corporation Limited
PPA	Power Purchase Agreement
PSS	Pooling Sub-Station
PSSE	Power System Simulator for Engineering
PX	Power Exchange India Ltd
QCA	Qualified Coordinating agency
R&M	Repairs and Maintenance
RE	Renewable Energy
REC	Rural Electrification Corporation
REDSM	Renewable Energy Deviation Settlement Mechanism
REMC	Renewable Energy Management Centre
RLDC	Regional Load Dispatch Centre
RoE	Return on Equity



Abbreviation	Full Form
RTM	Real Time Market
RTU	Remote Terminal Unit
SASRTU	Substation Automation System Remote Terminal Unit
SBI	State Bank of India
SCADA	Supervisory Control And Data Acquisition
SCED	Security Constrained Economic Despatch
SCUC	Security Constrained Unit Commitment
SITC	Supply, Installation, Testing & Commissioning
SLDC	State Load Despatch Centre
SOC	Security Operation Centre
SRM	Supplier Relationship Management
STOA	Short term open access
STU	State Transmission Utility
TB	Trial Balance
TCR	Transmission Capacity Right
ToR	Terms of Reference
TSUs	Technical Support Unit
UCR	Uncoursed random
UI	unscheduled interchange
ULDC	Unified Load despatch Center
URTDSM	Unified Real-time Dynamic State Measurements
VAPT	Vulnerability Assessment and Penetration Testing
VOIP	Voice over Internet Protocol
VPS	Virtual Private Server
VSE	Virtual State Entity
WAMS	Wide area measurement system
WASMP	Weighted Average System Marginal Price
WCRs	Work Completion Reports
WPI	Wholesale Price Index
WRLDC	Western Regional Load Despatch Center
WRPC	Western Region Power Committee





1. Background

Maharashtra State Load Despatch Centre (MSLDC) is the apex body for integrated operation of electricity grid in the State of Maharashtra and constituted under Section 31 of the Electricity Act (EA), 2003. MSLDC operates from two centers i.e. at Airoli and Ambazari (Nagpur) in Maharashtra and has an additional sub-LDC in Mumbai, which was shifted to MSLDC Control room at Airoli and being operated through separate desk.

The relevant provisions related to SLDC as mentioned in Section 31 of the EA 2003 are given below:

"(1) The State Government shall establish a Centre to be known as the State Load Despaich Centre for the purposes of exercising the powers and discharging the functions under this Part.

(2) The State Load Despatch Centre shall be operated by a Government company or any authority or corporation established or constituted by or under any State Act, as may be notified by the State Government.

Provided that until a Government company or any authority or corporation is notified by the State Government, the State Transmission Utility shall operate the State Load Despatch Centre: Provided further that no State Load Despatch Centre shall engage in the business of trading in electricity."

In accordance with the first proviso to Section 31(2) of the EA 2003, the Maharashtra State Electricity Transmission Company Limited (MSETCL), which is the State Transmission Utility (STU) in the State of Maharashtra, operates the MSLDC. As directed by Hon'ble Commission relevant steps have been taken for separation of MSLDC, the relevant details are provided in the Directive chapter.

Hon'ble Commission approved the 'Truing-Up of Budget of Cost of Operations for FY 2014-15 and provisional Truing-Up for FY 2015-16. Subsequently, the Aggregate Revenue Requirement (ARR) forecast and determination of Fees & Charges for FY 2016-17 to FY 2019-20 has been approved by MERC as per provisions under MYT Regulations 2015 in Case No 20 of 2016 in its order dated 22 July 2016. The truing –up of budget cost of operation for FY 2015-16 was approved under MERC MYT Regulations 2011. Further, 'Truing up of Aggregate Revenue Requirement (ARR) for FY 2016-17, Provisional Truing-Up of ARR for FY 2017-18 and ARR forecast and determination of Fees & Charges for FY 2018-19 & FY 2019-20', was approved by Hon'ble Commission as per provisions under MERC MYT Regulations 2015 in its order dated 12 September 2018 in Case No 171 of 2017.

Page 17 of 193

MSTDC MYT Petition for FY 2025-26 to FY 2029-30

'The Truing-up of the ARR for FY 2019-20 was carried out by the Hon'ble Commission as per MERC (Multi Year Tariff) Regulations ('the MYT Regulations'), 2015, while the Truing-Up for FY 2020-21 to FY 2021-22, Provisional Truing-up of ARR for FY 2022-23 and revised ARR forecast and determination of Fees and Charges for FY 2023-24 to FY 2024-25 was carried out under the MERC (Multi Year Tariff) Regulations ('the MYT Regulations') 2019 in the order dated 31st March 2023 in Case No 233 of 2022.

Now, for the next control period, Hon'ble Commission, in exercise of the powers conferred by relevant clauses under Section 181 read with clause under Section 36, 39, 40, 41, 51, 62, 64, 65 and 86 of the EA. 2003, has published the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2024 (the MYT Regulations 2024) on 19th August 2024. The control period of the MYT Regulations 2024 is five years' period, with effect from April 1, 2025 to March 31, 2030,

In accordance with Regulations 5.1(a) MYT Regulations 2024, the MYT Petition should contain the following:

- Truing-up for FY 2022-23 and FY 2023-24 to be carried out under the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019;
- Provisional Truing-up for FY 2024-25 to be carried out under the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019;
- iii) Aggregate Revenue Requirement for the next Control Period (FY 2025-2026 to FY 2029-2030);
- Revenue from the sale of power at existing Tariffs and charges and projected revenue gap for each year of the Control Period;
- Proposed category-wise Tariff or Fees & Charges for each year of the next Control Period under MYT Regulations, 2024.

In line with above provisions, the present petition is being filed before the Hon'ble Commission for:

- Approval of Truing-up for FY 2022-23 to FY 2023-24;
- Approval of Provisional Truing-up for FY 2024-25; and
- Approval of revised ARR forecast for FY 2025-26 to FY 2029-2030 and Determination of Fees and Charges for the same period.



Page 18 of 193

SLDC MYT Petition for FY 2025-25 to FY 2029-30

This Petition has been divided into following broad chapter / sections :

- Section 1 presents the background of filing the Petition.
- Section 2 elaborates the Approach.
- Section 3 deal with Truing-up for FY 2022-23 and FY 2023-24
- Section 4 presents the estimation of Provisional Truing-up for FY 2024-25.
- · Section 5 describes the key performance of MSLDC during true up years
- Section 6 describes the capital expenditure and capitalization proposed during the next control
 period
- Section 7 provides ARR forecast for FY 2025-26 to FY 2029-30.
- · Section 8 deals with sharing of MSLDC Charges for the same period.
- . Section 9 detailed out the MSLDC fees and charges proposed under this Petition.
- Section 10 presents the response of MSLDC on the 'Directives' given by Hon'ble Commission
 in its earlier orders.
- Section 11 presents the prayers made by the petitioner.



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2. Approach for the filing the MYT Petition

The present filing for the truing-up for FY 2022-23 and FY 2023-24 and provisional true up of FY 2024-25 is based on applicable provisions of the MERC (Multi Year Tariff) Regulations, 2019 (the MYT Regulations, 2019). The ARR forecast for the next control period (FY 2025-26 to FY 2029-30) is prepared on the basis of the provisions given in the MERC MYT Regulations, 2024. The truing-up for FY 2022-23 and FY 2023-24 is based on audited account of MSLDC of the said financial years and corresponding trial balance (TB). Actual gain/loss on account of controllable factor, as per provisions of the MYT Regulations, 2019, has been factored in appropriately while finalizing the true-up amount. The provisional truing-up is based on actual data available for April to September of FY 2024-25 and projected data for remaining period of the financial year.

For the purpose of forecasting the ARR components for five years viz from FY 2025-26 to FY 2029-30, the relevant provisions under the MYT Regulations, 2024 as well as the directives and approach considered by Hon'ble Commission in its earlier orders (MSLDC Order dated 31st March 2023 in Case No. 233 of 2022) was referred. Considering all the factors, the yearly Annual fixed charges for SLDC operations for the FY 2025-26 to FY 2029-30 has been projected in the petition. As per the direction of Hon'ble Commission the utilization of Load Despatch Centre (LDC) Development Fund (LDCD Fund) has been appropriately indicated in this Petition.

Further, the detailed format, as per the relevant MYT Regulations, for all the years (FY 2025-26 to FY 2029-30) including the provisional true up year FY 2024-25 and true up years FY 2022-23 & FY 2023-24 has been attached to the Petition as Annexure–1. Additionally, all computations (i.e. formats) are also presented in spreadsheet data formats stipulated by the Commission for submission of MTR Petition, which are separately submitted in a computer readable file along with this Petition. The detailed methodology adopted for the preparation of the present MTR Petition is elaborated in the subsequent sections.





3. Truing-up for FY 2022-23 and FY 2023-24

MSLDC has prepared the true-up for FY 2022-23 and FY 2023-24 as per provisions given in Multi Year Tariff Regulation (MYT Regulations), 2019. The approach followed by the Petitioner for truing-up of above mentioned two financial years is as per provisions given under MYT regulations, 2019. These true-up details are based on the Audited Accounts and Allocation Statement for FY 2022-23 and FY 2023-24, that have been finalized & attached to the Petition as Annexure- 2. MSLDC, therefore, seeks true up of all components for FY 2022-23 and FY 2023-42 as per the Audited Accounts and principles laid down in the MYT Regulations, 2019. Further, all computations are also presented in spreadsheet data formats stipulated by the Commission for submission of MYT Petition, which are separately submitted in a computer readable file along with this Petition. The formats have also been attached to the Petition as Annexure- 1. MSLDC has provided detailed rationale for truing up of FY 2022-23 and FY 2023-24 and key issues in the subsequent paragraphs

3.1. Operation & Maintenance

In accordance with the MYT Regulations, 2019 the Operations and Maintenance (O&M) Expenses includes expenditure on manpower, repairs, spares, consumables, insurance and overheads. Broadly, O&M Expenses consist of following expenditure heads:

- a) Employees Expenses
- b) Administration and General Expenses
- c) Repairs and Maintenance Expenses

Based on the Audited Accounts prepared by MSLDC for FY 2022-23 and FY 2023-24, the O&M expenses are Rs. 3680.99 Lakh and Rs.3837.60 Lakh, respectively. The actual Operations and Maintenance expenses are marginally differed from approved O&M expenses approved by the Commission in Case No. 233 of 2022.

MSLDC submits that in the Training Expenses as reflected in audited accounts under Employees Expenses are now included in the A&G Expenses. To that extent, variation appears in claimed and Audited figures of Employees expenses as well as A&G expenses.

It is to be noted that the number of employees was around 112 in FY 2022-23 and 109 in FY 2023-24 and the employee expenses for the FYs were also similar, without any great divergence. It is to be noted that the employee expenses were based on revised pay scale which was implemented from



8

October 2019 and applicable for FY2022-23 and FY 2023-24, ...

The petitioner submits that the A&G expenses increased, due to increase in (i) electricity charges, (ii) upkeep of office, (iii) security charges, (iv) Vehicle running expenses and (v) outsource personnel salary. However, A&G expenses were reduced in FY 2023-24 in comparison to FY 2022-23 in case of legal charge and audit fee, water charges, purchased related Advertisement expenses, vehicle hiring expenses, In Trial Balance (TB) and MYT format given in Annexure I, above mentioned expenditure related details are provided.

The R&M expenses as per the audited statement have been claimed in truing up purpose. The R&M expenses on account of plant and machinery and office equipment were increased in FY2023-24 in comparison with FY 2022-23.

The details of the actual Operation and Maintenance expenses incurred by MSLDC for FY 2022-23 and FY 2023-24 against approved by the Hon'ble Commission (as given in Case No. 233 of 2022) are shown in the Table below:

Table 1: Operation and Maintenance Expenses for FY 2022-23 and FY 2023-24

(Rs. Lakh)

Sr. No	Particulars	Approved in Case No. 233 of 2022*	Actual FY 22-23	Approve d in Case No. 233 of 2022*	Actual FY 23-24
A	Normative O&M expenses	3190.72		3322.18	
В	Additional O&M expenses	34,25		188.91	
1	Employees Expenses		2308.47		2422.05
2	Administration and General Expenses		1123.35		1106.13
3.	Repairs and Maintenance Expenses		249.17		309.42
	d Operation and Maintenance enses	3224.97	3680.99	3,511.09	3837.60

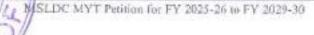
^{*}including estimated impact of wage revision on base employee expenses;

Sharing of gain and loss on account of O&M expenses

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019, under Regulation 11, specifies as under for sharing of gain / loss of controllable factors:

"Il Mechanism for sharing of gains or losses on account of controllable factors

11.1 The approved appreciate gain to the Generating Company or Licensee or MSLDC on



Page 22 of 193

account of controllable factors shall be dealt with in the following manner:

- (a)Two-third of the amount of such gain shall be passed on as a rebate in Tariff......
- (b) The balance amount of such gain shall be retailed by the Generating Company or Licensee or MSLDC.
- 11.2 The approved aggregate loss to the Generating Company or Licensee or MSLDC on account of controllable factors shall be dealt with in the following manner:
- (a) One-third of the amount of such loss may be passed on as an additional charge in Tariff......
- (b) The balance amount of such loss shall be absorbed by the Generating Company or Licensee. or MSLDC."

Further, as per Regulation 9.2 of the MYT Regulations, 2019, variation in O&M expenses corresponding to approved value are categorized as controllable expenses.

For true-up and sharing, the relevant clause of MERC MYT Regulations 2019 is given below:

"96.3 At the time of true-up for each Year of this Control Period, the Operation and Maintenance expenses shall be derived on the basis of the Final Trued-up Operation and Maintenance expenses after adding/deducting the sharing of efficiency gains/losses, for the year ending March 31, 2020, excluding abnormal expenses, if any, subject to prudence check by the Commission, and shall be considered as the Base Year Operation and Maintenance expenses:

Provided that the Operation and Maintenance expenses for each subsequent year shall be determined by escalating these Base Year expenses of FY 2019-20 by an inflation factor with 20% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 80% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past five financial years as per the Labour Bureau, Government of India, as reduced by an efficiency factor of 1% or as may be stipulated by the Commission from time to time, to arrive at the permissible Operation and Maintenance expenses for each year of the Control Period:

Provided further that, in the Truing-up of the O&M expenses for any particular year of the Control Period, an inflation factor with 20% weightage to the average yearly inflation derived based on the morality Wholesale Price Index of the respective past five financial years.

Page 23 of 193

(including the year of Truing-up) and 80% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past five financial years (including the year of Truing-up), as reduced by an efficiency factor of 1% or as may be stipulated by the Commission from time to time, shall be applied to arrive at the permissible Operation and Maintenance Expenses for that year.

The impact of Wage Revision, if any, may be considered at the time of true-up for any Year, based on documentary evidence and justification to be submitted by the Petitioner:

Provided that if actual employee expenses are higher than normative expenses on this account, then no sharing of efficiency losses shall be done to that extent:

Provided further that efficiency gains shall not be allowed by deducting the impact of Wage Revision and comparison of such reduced value with normative value.

96.5 Provisioning of wage revision expenses shall not be considered as actual expenses at the time of true-up, and only expenses as actually incurred shall be considered."

Following the provisions given in the MYT Regulations, the Petitioner considers the O&M expenses approved for FY 2021-22 as normative expenses after sharing of gain and loss, but excluding wage revision arrear(as approved in Table 16 of Case No 233 of 2022). The normative expenses have been escalated with relevant WPI and CPI data for finding out the normative expenses for FY 22-23 and FY 23-24, which has been compared with actual for determining the sharing of gain / loss. In consideration with the provisions about escalation factor given in MYT Regulations, 2019, the Petitioner has considered the past data of WPI and CPI and derived the escalation factors which are used to determine normative O&M expenses for FY 2022-23 and FY 2023-24. The details of escalation factors are given below.

Table 2 : Determination of escalation factors to derive normative O&M expenses for FY 2022-23 and FY 2023-24

Year	WPI	WPI inflation	CPI	CPI inflation
2018-19	119.8	4.26%	299.92	5.45%
2019-20	121.8	1.67%	322.5	7.53%
2020-21	123.4	1.31%	338.69	5.02%
2021-22	139.4	12.97%	356.06	5.13%
2022-23	152.5	9,40%	377.6256	6.06%
2023-24	15140	Y -0.75%	397.2096	5.19%
FY 2022-23	0 000	hu to		

Page 24 of 193

MSLDC/MYT Petition for FY 2025-26 to FY 2029-30

Year	WPI	WPI inflation	CPI	CPI inflation
Average from FY 2018- 19 to FY 2022-23		5.92%		5.84%
Weightage		20%		80%
Escalation Factor				5.85%
Escalation Factor for FY 2022-23 after efficiency factor				4.85%
FY 2023-24				
Average from FY 2019- 20 to FY 2023-24		4.93%		5.78%
Weightage		20%		80%
Escalation Factor				5.61%
Escalation Factor for FY 2023-24 after efficiency factor				4.61%

Note: Source of WPI: (Index files for WPI series (BASE: 2011-12)) https://eaindustry.nic.in/download_data_1112.asp Source of CPI: (Centre index) - https://labourbureau.gov.in/centre-index

Following the above principle and escalation factor derived above, the impact of sharing of gains/loss has been considered for O&M expenses for FY 2022-23 and FY 2023-24 and the same is presented in the following table.

Table 3 : Sharing of Gains and Loss on account of O&M Expenses for FY 2022-23 and FY 2023-24

(Rs. Lakh)

		(Rs. Laki
Normative O&M calculation	FY 22-23	FY 23-24
Net Entitlement of MSLDC for previous year	3064.45	3369.13
Escalation Factor after deducting efficiency factor 1%	4.85%	4.61%
Normative O&M Expenses	3213.19	3524.52
Actual expenses	3680,99	3837.60
Sharing Gain and (Losses)	-467.80	-313,09
2/3rd Efficiency Gain or 1/3rd Efficiency Loss sharing	-155.93	-104.36
Net Entitlement after sharing	3369.13	3628,88

MSLDC humbly requests the Una ble Commission to approve Operation and Maintenance expenses as given above.

Page 25 of 193

MST-DC MYT Petition for FY 2025-26 to FY 2029-30

3.2. Interest on Working Capital

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019 under Regulation 32.5 specifies as under:

"32.5 MSLDC

The working capital requirement of the MSLDC shall cover:

- (1) Operation and maintenance expenses for one month;
- (ii) One and a half months equivalent of the expected revenue from levy of Annual Fixed Charges approved by the Commission for ensuing year/s:

Provided further that for the purpose of Truing-up for any year, the working capital requirement shall be re-computed on the basis of the values of revised normative Operation & Mointenance expenses and actual Revenue from sale of electricity excluding incentive, if any, and other components of working capital approved by the Commission in the Truing-up before sharing of gains and losses;

(b) Rate of interest on working capital shall be on normative basis and shall be equal to the Base Rate as on the date on which the Petition for determination of Fees and Charges is filed, plus 150 basis points:

Provided that for the purpose of Truing-up for any year, interest on working capital shall be allowed at a rate equal to the weighted average Base Rate prevailing during the concerned Year plus 150 basis point."

Further, Regulation 2.1 (11) of MERC MYT Regulations 2019 mentioned that the Base Rate would be one-year marginal cost of funds – based lending rate (MCLR) as declared by the State Bank of India from time to time.

The petitioner has considered the aforementioned methodology specified in the MYT Regulations, 2019 for calculation of interest on working capital (IoWC). MSLDC has computed IoWC, by considering one month's normative Operation and Maintenance expenses and 1.5 months' receivables. For computing receivables, MSLDC has considered the actual revenue earned. The revised normative O&M expenses as decived by the Petitioner, prior to sharing of gains/losses and the actual Revenue recovered by MSCDC, have been considered by the Petitioner for computing the IoWC. Further, MSLDC submits that there is to actual loan borrowed for meeting its working capital



Page 26 of 193

requirements.

Regarding interest rate, MSLDC has considered the interest rate equivalent to 150 basis point margin over the State Bank of India (SBI) MCLR prevailed during FY 2022-23 and FY 2023-24. The Petitioner has derived the weighted average MCLR (one-year period) for FY 2022-23 and FY 2023-24 based on actual MCLR prevailing during the year. The applicable interest rate for working capital calculation is explained below.

Table 4: SBI base rate (MCLR) prevailing during FY 2022-23 and FY 2023-24 and Interest rate considered for Working Capital

Start	End	Rate
1.4.22	.14.4.22	7.00%
15.4.22	14.5.22	7.10%
15,5.22	14.6.22	7.20%
15,6.22	14.7.22	7.40%
15.7.22	14.8.22	7.50%
15.8.22	14.9.22	7.70%
15.9.22	14.10.22	7.70%
15.10.22	14.11.22	7.95%
15.11.22	14.12.22	8.05%
15.12.22	14.1.23	8,30%
15.1.23	14.2.23	8.40%
15.2.23	14.3.23	8.50%
15.3.23	31.3.23	8.50%
Weighted Average for FY 2022-23	334331633	7.79%
Interest rate on Working Capital for FY 2022-23		9.29%
1,4,23	14.4.23	8.50%
15.4.23	14.5.23	8.50%
15.5.23	14.6.23	8.50%
15.6.23	14.7.23	8.50%
15.7.23	14.8.23	8.55%
15.8.23	14.9.23	8.55%
15.9.23	14.10.23	8.55%
15.10.23	14.11.23	8.55%
15.11.23	14.12.23	8.55%
15.12.23	14.1.24	8.65%
15.1.24	14.2.24	8.65%
15.2.24	14.3.24	8.65%

Page 27 of 93

MSLDC MYT Petition for FY 2025-26 to FY 2029-30

Start	End	Rate
15.3.24	31.3.24	8,65%
Weighted Average for FY 2023-24		8.56%
Interest rate on Working Capital for FY 2023-24		10.06%

The IoWC considered by MSLDC and approved for FY 2022-23 and FY 2023-24 are shown in the table below:

Table 5: Interest on Working Capital for FY 2022-23 and FY 2023-24

(Rs. Lakh)

Particulars	Approved for FY 2022- 23	Actual for FY 2022-23	Approved for FY 2023- 24	Actual for FY 2023-24
Interest on Working Capital	66.50	(normative)	63.99	68.20 (normative)

Sharing of gain and loss on account of IoWC

It is respectfully submitted that the IoWC shall be payable on normative basis notwithstanding that MSLDC has not taken any working capital loan from any outside agency. Further, the Hon'ble Commission opined the following in Case No. 233 of 2022 in this regard:

"MSLDC has submitted that it has not taken any actual working capital loans. Accordingly, the entire normative IoWC computed on Truing up of ARR for FY 2019-20 shall be considered as an efficiency gain and shared with the consumers in accordance with Regulation 11 of MYT Regulations, 2015."

Also it is important to refer, the Regulation 32.6 of the MYT Regulations, 2019, which reads as follows:

"32.6 For the purpose of Truing-up for each year, the variation between the normative interest on working capital computed at the time of Truing-up and the actual interest on working capital incurred by the Generating Company or Licensee or MSLDC, substantiated by documentary evidence, shall be considered as an efficiency gain or efficiency loss, as the case may be, on account of controllable factors, and shared between it and the respective Beneficiaryies or consumer as the case may be, in occordance with Regulation 11:"

Page 28 of 193

ISLDC MYT Petition for FY 2025-26 to FY 2029-30



According to the above provisions entire normative IoWC is considered as an efficiency gain by the Petitioner and shared the same with the consumer as per Regulation 11 of MYT Regulations, 2019 Therefore, two-third of IoWC is proposed to be shared as efficiency gain, and remining is claimed by the Petitioner as shown in table below. The detailed computation of normative interest on working capital has been given in the Form 6 of Petition Formats.

Table 6: Sharing of gain / loss in case of Interest on Working Capital for FY 2022-23 and FY 2023-24

(Rs. Lakh)

Particular	Approved in MTR order	Claimed (Rs lakh)	Efficiency gain (Rs lakh)	Managar Control Control Service Control Contro	Net entitlement (Rs lakh)
FY 2022-23					
Operations and Maintenance Expenses for one month	268.75	267.77			
One and a half month equivalent of expected revenue from levy of Annual Fixed Charges	434.95	431.80			
Total working capital requirement	703.69	699.57			
Interest Rate	9.45%	9.29%			
Interest on Working Capital	66.50	65.02			
Interest on Working Capital FY 2022-23	66.50	65.02	65.02	43.35	21.79
FY 2023-24					
Operations and Maintenance Expenses for one month	292.59	293.71			
One and a half month equivalent of expected revenue from levy of Annual Fixed Charges	384.56	383.94			
Total working capital requirement	677.15	677.65			
Interest Rate	9.45%	10.06%			
Interest on Working Capital	63.99	68.20			
Interest on Working Capital FY 2023-24	P-92	68.20	68.20	45.47	22.73

Page 29 of 193

MSLDC MYT Petition for FY 2025-26 to FY 2029-30

3.3. RLDC Fees

The RLDC Fees for the FY 2022-23 and FY 2023-24 as per the Audited Accounts are Rs. 829.15 Lakh 1129.32 Lakh respectively. The same is payment related to RLDC Fees only. The Petitioner has considered the RLDC payment as reflected under Fees and Subscription in the Trial Balance (considered under A&G expenses). RLDC fees were deducted from Fees and Subscription G/L under A&G and remaining is considered as Fees and Subscription under A&G expenses (as given in Format 2.3).

The details, as per entries made in TB, for FY 2022-23 and FY 2023-24, are given below.

Table 7: Details of RLDC fees paid in FY 2022-23 and FY 2023-24

(Rs.)

Posting Date	Amount in LC	Particulars			
8/17/2022	8,530,154.00	RLDC FEES FEB 22 TO APRIL 22			
10/3/2022	17,673,933.00	RLDC FEES & CHARGES MAY 22 TO JULY 22			
11/4/2022	822,632.00	WRLDC FEES & CHARGES FY 21-22			
12/12/2022	5,549,112.00	RLDC FEES OF SEP 22 PAID			
12/12/2022	5,653,456.00	RLDC FEES OF AUG 22 PAID			
1/10/2023	5,541,232.00	WRLDC FEES & CHARG OCT 22			
2/1/2023	5,570,908.00	RLDC FEES CHARGES NOV 22			
2/1/2023	2,079,113.00	STM 1 LINK WRPC & BHUJ TO WRLDC TO MSEDCL*			
2/3/2023	1,099,836.00	REIMB TO STM 1 & BHUJ WRLDC TO MSEDCL*			
3/15/2023	5,567,140.00	REIMBUS TO MSEDCL DEC 22 WRLDC FEES & CHARGES			
3/31/2023	5,510,273.00	MSEDCL REIMB TO WRLDC FEES JAN 2023 TO MSEDCL			
3/31/2023	5,513,611.00	WRLDC FEES PROVISION FEB 2023			
3/31/2023	13,803,665.00	WRLDC FEES PROVISION MARCH 23			
	82,915,065.00				

Note: *As per the decision taken in 91" commercial committee meeting dated 10/07/2024 SLDC had paid above charges to MSEDCL, the charges were paid for the work carried out by PGCIL for establishing a communication link for western region beneficiaries. These charges will be recovered by MSLDC and accordingly entries will be made in the accounts and will be submitted to the Commission in subsequent graff filing.

Page 30 of 193

MSLEC MYT Petition for FY 2025-26 to FY 2029-30

Posting Date	Amount in LC	Text
4/1/2023	-19,317,276.00	REVERSAL OF PRO MAR 23 RLDC FEES FEB & MAR 23
5/3/2023	5,513,611.00	RLDC FEES MSEDCL FEB 2023
5/29/2023	13,803,665.00	WRLDC FEES MARCH 2023 MSEDCL
6/22/2023	8,661,938.00	REIMBUR TO MSEDCLPLI FOR FY 20-21
7/6/2023	11,465,833.00	MSEDCL WRLDC FEES &CHARGES PLI 21-22
8/3/2023	6,984,429.00	WRLDC FESS CHAR APRIL 2023
9/6/2023	5,967,605.00	RLDC FEES CHARGES MSEDCL MAY 2023
10/6/2023	6,923,599.00	WRLDC FEES CHAR JUNE 2023
10/10/2023	7,093,244.00	WRLDC FEES MSEDCL JULY 23
11/20/2023	7,231,345.00	WLRDC FEES CHA AUG 2023
11/20/2023	128,750.00	FEES CHARGES FERV 22-23
12/21/2023	6,022,663.00	REIMB TO MSEDCL FEES SEPT 2023
2/5/2024	7,278,184.00	MSEDCL RLDC FEES OCT 2023
2/9/2024	200,000.00	WRLDC BAL AMT PAID OCT 23
3/1/2024	6,992,908.00	REIMB TO WRLDC FEES CHAR FOR THE M/O NOV 2023
3/5/2024	6,188,109.00	WRLDC FEES DEC 2023
3/5/2024	2,200,252.00	WRLDC FES&CHAR PLI FY 22-23 ADUJ 21-22
3/31/2024	10.000,000.00	PROVISION OF MAR 2024 WRLDE FEES
3/31/2024	6,188,109.00	PROVISION OF MAR 2024 WRLDE FEES
3/31/2024	6,217,154,00	PROVISION OF MAR 2024 WRLDE FEES
3/31/2024	6,188,109.00	wrongly debited to 440100 instead of GL 440010
	112,932,231.00	

It is to be noted that as reflected in the above table SLDC had paid performance linked incentive (PLI) to RLDC during FY2023-24 for FY2020-21 and FY 2021-22 and FY 2022-23. The payment towards PLI is the main reason for increased RLDC charges during FY2023-24. The actual payment made against the approved charges, as determined by the Hon'ble Commission in Case No. 233 of 2022 is given below:

Table 8: RLDC Fees for FY 2022-23 and FY 2023-24

(Rs. Lakhs)

Page 31 of 193

SEDC MYT Petinon for FY 2025-26 to FY 2029-30

Particulars	Approved in Case No. 233 of 2022	Actual	True- Up Requirement
FY 2022-23	651.52	829.15	177.63
FY 2023-24	684.10	1129.32	445.22

The petitioner requests the Hon'ble Commission to approve RLDC Fees claimed for FY 2022-23 and FY 2023-24 on actual basis. The details of RLDC Fees are also provided in Form F7of Petition Formats.

3.4. Capitalization

The Hon'ble Commission approved capitalization of Rs. 837.1 Lakh for FY 2022-23 and Rs. 2952.8 Lakh for FY 2023-24 in Case No. 233 of 2022. However, upon completion of the respective financial years, the actual capitalization was lower than approved amount. The breakup of actual capitalization as DPR and Non-DPR schemes is as shown in the Table below:

Table 9 : Actual Capitalization for FY 2022-23

(Rs.)

I III III III III III III III III III		4 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2	11000-0000	()
Asset Description	OP. Balance	Capex	Capitalizatio n	Cl. Balance
RTU & DC for ALDC Ambuzari	72,623.76	0.00	-72,623.76	0.00
SLDC - SITC of 80 RTU	816.843.29	0.00	0.00	816,843.20
SITC of Elect, wiring and A/C Equipmets	12,894.36	0.00	0.00	12,894.36
70 SAS/RTUs Integration	0.00	4,602,000.00	-4,602,000.00	0.00
Web based soft, for proc. STOA applicating	0.01	00.0	0.00	0.01
H/w & S/w at Control Centre	0.00	2,478,000.00	-2,478,000.00	0.00
Renovation of UCR wall with fence ntSLDC	0.02	0.00	0.90	0.02
Watchman cabin at SLDC Main gate	0.16	0.00	0.00	0.16
SITC of 3 DCs	3,097,500.00	0.00	0.00	3,097,500.00
SITC of auto, FSS & MS at ALDC, Ambazari	11,094,021.00	4,847,135.56	-15,941,156.51	0.05
SITC 2nos elevators at MSLDC Airoli	2,290,798.41	1,527,200.14	-3,817,998.54	0.01
SITC of New 240 Line Digital EPABX m/c	0.00	629,849.78	-629,849.78	0.00
Vehicle Parking Shed for SLDC	0.00	519,792.18	0.00	519,792.18
Proc. of DG Set with DDC in new SLDC Bld	0.00	6,260,646,04	0.00	6,250,646.04
Civil Works of New SLDC Building Airoli	AIT	1,555,553.11	-1,555,553,08	0.03
Civil UPVC vertical fins for venticate	(0.00 dg/m) 4	04,642.78	~794,642.78	0.00

Page 32 of 193

MSLDC/MYT Petition for FY 2025-26 to FY 2029-30

VDU and furniture for Cyber SOC	0:00	595,387,83	-593,387.83	0.00
SITC of Vdeo Wall for SOC at SLDC Airoli	0.00	2,499,440.00	0.00	2,499,440.00
SITC of VC System at Control Room, SLDC	0.00	2,234,624.01	-2,234,624.01	0.00
SITC of Bokp Appline with S/w & Tape Libr	0.00	9,920,000:00	-9,920,000,00	0.00
Extension of W.O. auto, PSS & MS at ALDC	0,00	6,479,744.62	0.00	6,479,744.62
Proc of Client & Serve AntiVirus License	0.00	1,201,000.11	-1,201,000.10	0.01
Change Request DSM Software	0.00	8,399,999.92	0.00	8,399,999.92
	17,384,680,92	54,453,016.08	-43,750,836.39	28,086,860.61
GA			-77000.02	
GA			-698938,32	
GA			-124119.48	
Subscription PSSE Software License			-4944695.6	
GA			-3641390.32	
GA			-334420.26	
GA			-949884.6	
		General asset	-10770448.6	
		Total	-54,521,284.99	
		Total	Say 545.21 Lakh	

Actual Capitalization for FY 2023-24

(Rs. Lakhs)

Asset Description	OP. Balance	Capex	Capitalizati on	Cl. Balance
SLDC - SITC of 80 RTU	816,843.20	0.00	0,00	816,843,20
SITC of Elect, wiring and A/C Equipments	12,894.36	0.00	0.00	12,894.36
70 SAS/RTUs Integration	0.00	7,080,000.00	-7,080,000.00	0.00
Web based soft for proc. STOA applicate	0.01	0.00	0.00	0.01
Renovation of UCR wall with fence atSLDC	0.02	0.00	0.00	0.02
Watchman cabin at SLDC Main gate	0.16	41,019.05	0.00	41,019.21
STIC of 3 DCs	3,097,500.00	0.00	0.00	3,097,500.00
SITC of auto. FSS & MS at ALDC, Ambazari	0.05	0.00	0.00	0.05
SITC 2nos elevators at MSLDC Airoli	0.01	0.00	0.00	10.0
Vehicle Parking Shed for SLDC	519,792.18	831,811,93	0.00	1,351,604,11
Proc. of DG Set with DDC in new SLDC Bld	6,2683646,04Y	O-HO	0.00	6,260,646,04

Page 33 of 193

MSLDC MYT Pylition for FY 2025-26 to FY 2029-30



Civil Works of New SLDC Building Airoli	0.03	0.00	0.00	0.03
SITC of Vdeo Wall for SOC at SLDC Airoli	2,499,440.00	177,000.00	0.00	2,676,440.00
Extension of W.O. auto, FSS & MS at ALDC	6,479,744.62	246,030.00	-6,725,774.62	0.00
Proc of Client & Servi AntiVirus License	0.01	0.00	0.00	0.01
Change Request DSM Software	8,399,999.92	0.00	-8,399,999.92	0.00
SIC of LED video wall with early & cal	0.00	4,899,800.00	-4,899,800.00	0.00
CIVIL Waterproof & struct strength SLDC	0.00	3,808,189.12	0.00	3,808,189.12
Fire Hydrant System Works	0.00	1,283,975.70	-1,283,975.70	0.00
RFID based auto boom barrier with camera	0.00	1,624,388.00	-1,624,388.00	0.00
SITC OF 20 DC @SLDC & Contingencies	0.00	9,407,553.86	0.00	9,407,553.86
SITC OF 20 DC @ALDC & Contingencies	0.00	9,199,180.81	0.00	9,199,180.81
	28,086,860.61	38,598,948.47	-30,013,938.24	36,671,870.84
GA			-286858	
GA		1	-124,360.20	
GA			-99,580.20	
GA			-478245.04	
			-38763	
			-788047.92	
		General asset total	-1815854.36	
		Total	-31,829,792.60	
		Total	Say 318.29 Lakh	

Brief information on Scheme / project capitalized during FY 2022-23 & FY 2023-24

PSSE system study software (2nd keys): (FY: 2022-23)

Scheme details: MSLDC is using PSS/E Software licenses for carrying out various System Studies. The total no. of PSS/E licenses available are 2 Nos (1 No each at MSLDC, Airoli & ALDC, Ambazari). The PSS/E Software is provided by M/s. Siemens Ltd. and is used all over the Country so that one common database shall be available all over the Country. Around 133 Nos. of licenses are

Page 34 of 193

MSLAC MYT Petition for FY 2025-26 to FY 2029-30



in use at various SLDCs, RLDCs & STUs. Due to increased complexity of the Transmission network, large No. of Load Flow studies are to be carried out on daily basis before approval of Planned & forced outages. While submission of any outage proposal for 765 kV or 400 kV network element to WRLDC for approval it is mandatory to submit contingency plan along with contingency analysis. All the outages on 765 kV & 400 kV level and up to 220 kV level (in rest of Maharashtra) are approved by MSLDC, Airoli and outages below 400 kV level in VKM area are approved by ALDC, Ambazari. As per the recommendations from the High-Level Committee report in the matter of Grid disturbance occurred on 12.10.2020 in MMR & Mumbai, SLDC has been mandated to carry out review of existing LTS schemes and Mumbai Islanding Schemes through simulations. All such reviews are to be carried out at regular intervals on yearly basis. Also, the protocol for Demand Curtailment in MMR & Mumbai area is to be reviewed periodically through simulations. Further, HLC report has recommended to study the "Security Constrained Economic Despatch" (SCED) and "Security Constrained Unit Commitment" (SCUC) for Mumbai embedded Generation. PSS/E Software is having in-built feature for carrying out such studies. After the Grid disturbance occurred on 12.10.2020, all the major outages & long outages are approved only after carrying out Load Flow & Contingency Studies. Based on the load flow studies, the contingency plans are prepared and put forth for implementation at Control Room under emergencies.

Presently, only one PSS/E Software license is available at MSLDC Airoli which is not sufficient as only one engineer can carry out study at a time. The detailed Studies & contingency analysis is a time-consuming task and hence, results in to delay in carrying out other studies. At present, Control Room Engineers are not having any software to take real time decision on any outages/contingent situations. They have to consult General shift engineers/Executive for study through existing 1 No. of PSS/E software. As well, the officer who is looking after the planned outages for Yearly/Monthly/3 day advance/OCC approved outages/Post OCC outages/Forced outages is having huge load of work (around 10 Nos. of outages per day & average 316 Nos. of Outages per month, wherein System study & contingency plans are required) and hence requires independent PSS/E license. Hence, the scheme has been proposed to procure additional 2 Nos. of Licenses for carrying out studies.

Justification of change of Scheme Cost and delay in Scheme implementation: While submission of ARR petition of MSLDC, the cost considered was Rs. 40 Lakh which was tentative. Due to COVID-19 pandemic, this activity was not possible to initiate. Further, budgetary offer was called from the PSSE Software vendor. The proposal for administration approval was prepared on 15.12.2021 and approval was received on 16.22.2022. After receipt of approval, the LoA was issued to the vendor on

Page 35 of 193

18.02.2022 and on 18.08.2022, the PSSE Software License has been delivered by the vendor.
The Scheme was completed and capitalized on 14-09-2022.

 State specific customization in REMC software and allied additional requirement of hardware through change order: (FY: 2022-23)

Scheme details: The commercial use of the REMC Scheduling and forecasting Software has been started from Jan'2020. The software is in use for 1 year successfully. The Work order for establishment of REMC in various RE rich States was issued by PGCIL. Being common software for all the States, the basic architecture of the Software was common for all the States. Before utilizing the software at MSLDC, State specific changes were carried out in accordance with the provisions of the existing Regulations. However, some of the changes require changes in basic architecture. As these changes were not hampering the implementation of the Regulations, utilization of the REMC & urgency of implementation of the F&S Regulations in the State, these issues were not taken up. Apart from such issues, with the extensive use of software, some of the issues have been observed which needs to be resolved for further improvement.

Scope of work along with benefit is as below:

A. Flexibility in Inter-State transactions:

- In the existing architecture of REMC Software provision for modelling multiple contracts i.e.
 Intra & Inter State contracts is available, however, no separate Available Capacity (AvC) for the both the type of contracts is available.
- The methodology for calculation of Deviation Charges in case of Intra & Inter-State transactions is different. Hence, for calculation of the Deviation charges, separate AvC for Intra & Inter State contract is mandatory.
- Hence, it is necessary to get separate AvC for both the type of contracts. With this development, flexibility of mapping Intra & Inter State contracts can be achieved.

B. Introduction of Green Term Ahead Market (G-TAM) & Real Time Market (RTM)

- Hon'ble CERC vide order dated 17.08.2020 in the Petition No. 25/MP/2019, in respect of introduction of Green Term Ahead Market (G-TAM), has accorded approval for RE transactions through India energy Exchange (IEX)/ Power Exchange India Ltd (PX).
- In accordance with the said order, RE Generators can sale power outside the State through IEX/PX. Such transactions shall be permitted in Day Ahead & Real Time basis. As the REMC Software was designed a commissioned before the introduction of the said G-TAM Order, no

Page 36 of 193



any provision has been made in this respect.

 Hence, in order to resolve this issue and keep the software capable with said Order, some modifications & additions in the Software are required.

C. PSS-wise Contract Management

- It is a standard practice that PPAs or Open Access are for individual turbine of Solar PV modules. Hence, for a single PSS, there are large No. of PPAs/OA. Also, the period of PPA/OA is different for each individual Turbine/Solar PV in a single PSS.
- For Discom-wise scheduling, total capacity contracted by the respective Discom under a PSS
 needs to be consolidated. As there are large No. of individual PPAs/OA with different periods,
 information is to be collected & updated for each Turbine/Solar PV.
- There are around 4831 No of individual Wind Turbines & Solar PV Modules connected to various 119 No. of PSS. Hence, 4831 No. of contracts needs to be maintained.
- Presently, all the activities involved in modelling of Discom-wise & PSS-wise contracts are carried out manually in excel sheets. In order to enable Day ahead scheduling for the 1st day of the month, all the activities are required to be completed on the 2nd last day of the month. Based on the regulatory changes, the list of contracts is updated by Discoms even on the last day of the month & in many cases, the information is updated even after commencement of the new month.
- Hence, the scheme has been proposed to develop a Web-based tool in REMC Scheduling Software through which Discoms can update only required fields. All the activities such as consolidation & notifying discrepancies will be done by the Software. After resolving discrepancies, the System will generate PSS-wise & Discom-wise contracts which can be automodelled in the Software. The list of non-contracted Generators can be auto mailed to the Discoms for disconnection to avoid un-scheduled injection.

Justification of change of Scheme Cost and delay in Scheme implementation: REMC System was commissioned at MSLDC on 01.01.2020. Hence, while considering budget provision for REMC customization the cost of Rs. 40.0 Lakh was roughly considered in year 2020-21. While estimating the cost, no detailed requirements for changes required to be made in the System were available, as the system was newly commissioned. Also, the MERC (Forecasting, Scheduling and Deviation Settlement for Solar & Wind Generation) Regulations, 2018 were commercially implemented w.e.f. 06.01.2020. As the System was newly commissioned, it was not possible to identify the modifications



required immediately, as such requirements can be identified only after gaining experience after usage. Further, as per CERC Order dated 17-01-2021 in the matter of the petition No. 146/MP/2021, the power exchanges developed the procedure and mechanism for Green Day Ahead Market (G-DAM) & Green Term Ahead Market (G-TAM) and launched by IEX on 22-10-2021. As this was not covered in the existing scope of work of REMC System, this was a new requirement.

Hence, after detailed study & usage of the REMC System and as per new regulatory changes, MSLDC identified the exact changes/modifications required in the existing System and on dated 08.06.2021, requested the vendor to provide budgetary offer under "Change request" clause. Accordingly, after assessing the impact of changes & discussions with MSLDC, the vendor submitted offer on 03.09.2021 which was subsequently revised and final offer was received on 03.12.2021. The final cost for REMC modifications has arrived to Rs. 70.80 Lakhs (including 18 % GST). Further, on dated 18.02.2022, MSLDC has issued LoA to the vendor and the work of development of the architecture for modification of existing System is underway. The work is expected to be completed by December' 2022. However, due to complex logics and testing in the live system, there were limitations for deployment in time, which resulted in to delay in the completion of the scheme.

The work is completed on 08-08-2024 and the capitalization is carried out on 15-10-2024.

* Procurement of 4 Nos. of PSSE Software Licenses: (FY: 2024-25)

MSLDC is responsible for secure & reliable grid operations in real time. Maharashtra is the only State in the country having highest state-owned installed capacity, transmission system & to fulfill this function simulation studies are to be carried out as the State grid is very complex.

PSSE, or Power System Simulator for Engineering, is a widely used software tool developed by Siemens for modeling, analyzing, and simulating power systems. It is particularly popular among utility companies, consultants, and researchers for various applications. Here are some key features and uses of PSSE:

- Load Flow Analysis: PSSE allows users to perform load flow studies to analyse power flow in the network under various operating conditions.
- Dynamic Simulation: The software can simulate dynamic behaviour of power systems, including transient stability analysis, to assess how systems respond to disturbances over time.
- Contingency Analysis. Users can evaluate the impact of potential outages or failures in
 the system to ensure remarkably and identify vulnerabilities.

Page 38 of 193

- Short Circuit Analysis: PSSE can perform short circuit studies to determine fault currents and the potential impacts on equipment.
- Renewable Integration: The software supports the modelling of renewable energy sources, helping to analyse their impact on grid stability and performance.
- Optimal Power Flow (OPF): PSSE can be used to optimize generation dispatch and minimize costs while meeting system constraints.
- Data Visualization: It provides various tools for visualizing power system data, making it easier to interpret results and communicate findings.
- Interfacing with Other Tools: PSSE can integrate with other software and tools, allowing for more comprehensive analyses and workflows.

MSLDC is having 3 Nos. of such licenses. However, considering complex network, requirement of computation of year ahead TTC-ATC in accordance with the IEGC-2023, requirement of continual review of LTS & islanding schemes, monitoring compliances for RE plants in accordance with the CEA regulations, etc, MSLDC has issued LoA on 30-08-2024 for purchase of additional 4 Nos. of PSSE software Licenses with the scheme cost of Rs.0.99 Cr. Accordingly, the vendor has delivered licenses on 20-09-2024. With the new licenses, MSLDC has started computation of year-ahead TTC/ATC for the State. Also, the Inter-Connection Studies on six-monthly basis is also carried out. Both these activities are carried out on monthly basis.

The activities of scheme closure and capitalization is in progress and the scheme will be capitalized in FY: 2024-25.

2 Nos. Elevator (FY 2022-23)

It is important to mention here that these lifts are assembled lifts and not of reputed OEM make lifts like OTIS, Thyssenkrupp, kone, Schindler. The lifts were assembled with various parts of different manufacturer. The order value of the said contract was Rs.42 Lakhs only.

These lifts were frequently used by Executive Director, CGM(F&A), Chief Engineer, SE, EE, other officers & VIP'S for going to various floors' of SLDC office. After some time Outsource and hiring staff was recruited for various works. Also, REMC staff was posted at SLDC for various works. Due to this additional staff, Loading and run-time of both the lifts kept increasing gradually which resulted in failure of various spare of the lifts. As the lifts are assembled one, when one part fails and need replacement then we have to replace other parts also to match it with other system and programming. In October-18, Drive Encoder a major part oblift no.1 became faulty and replaced in Oct-2018. Same

Page 39 of 193

thing happened with the lift no.2 in Oct-2020 and its Drive Encoder replaced in emergency before Hon. Energy Minister visit. These lifts also have one peculiar problem of frequently tripping on overheating. The overheating is caused due to the openly installed drive motors on top floor. There is no separate lift room provided for the drive unit and drive controller. As the drive motor is installed openly, it is continuously exposed to sunlight. Also, the heat from the glass capsule makes the drive motor hotter. Due to this overheating, the drive motors get tripped suddenly and we need to remove stuck up people from the lift almost daily. Even if the drive motor is covered, the heat in the capsule of four floors trips the drive motor.

EPABX 240 LINES

As this EPABX System has already completed 12 years of service till date, it is giving frequent problems in service. The major problem with this EPABX System is that this model of Crystal is discontinued long ago hence its spares are not available anywhere in market. Repairing of the spare is done but does not guarantee smooth functioning of the EPABX System for long time. Also, it has only 160 ports installed capacity which cannot be extended to accommodate new intercom numbers. Due to agoing of cables, phone lines are frequently getting break which result in interruption of intercom services. Moreover, programming of the EPABX System is giving frequent problem due to old software present in the system. Presently, the EPABX System is installed in Old SLDC Building and all the intercom lines are laid through cable trench which is now covered with concrete road. Due to this, any fault in cable cannot be identified & rectified. The cable needs to be replaced only and to be laid in nala besides the road. If the proposal is approved, the new EPABX System will be installed at New Building on Battery Set No.-2 Room on 1st Floor.

Hence, this matter was discussed with the Higher Authorities and it has been decided to replace the old EPABX System with the new EPABX System along with its accessories.

Considering the importance of work as per above facts &to carry out the said work.

2 Nos. civil Work at new SLDC building

- 1. Maintenance shift room to be converted into 2 Nos of Cabins for.
- CCTV Room to be converted into two separate rooms viz. CCTV room & Shift room.
- 3. Parking area hall to be removated seating arrangement and partition for URTDSM LT ACDB & UPS.

Page 40 of 193

- 4. Partition to be provided in EE cabin at 2nd Floor.
- 5. False ceiling work of ED Cabin for sound proofing.
 - Foundation strengthening of DG set of Fire Hydrant System.

RF ID based Boom Barrier (FY 2023-24)

The joint security survey of MSLDC Building and its premises carried out by Navi Mumbai Police Commissionerate, Central Intelligence Bureau and State Intelligence Bureau on dt. 25.11.2022 and its Audit Report submitted by Rabaic Police Station on Dt. 12.01.2023, it is mandatory to install RFID based automatic boom barrier system at the entrance gate of MSLDC, Airoli.

- Boom barrier at the entrance gate is faulty and need to be repaired at the earliest. (Point No. 1
 of the report)
- Cameras for face reading of drivers and number reading of the vehicles entering premises need to be installed at the main gate. (Point No. 2 of the report)
- The above mentioned boom barrier system needs to be RFID based needs to be installed at the main gate. (Point No. 18 of the report)

The matter was discussed with the higher authorities and as per the directives of the higher authorities, it is decided to go installation of RFID based automatic boom barrier system alongwith face and number reading camera at the entrance gate at MSLDC, Airoli,

Fire Hydrant System

Fire Safety Audit of New SLDC Building is carried out on 13th March 2021 based on National Building Code of India 2016 Regulations and Maharashtra Fire Prevention & Life Safety Measures Act 2006. The Fire & Life Safety Audit Report was submitted by M/s Riaan Fire Safety Solution on dt. 27-03-2021. As per the Fire Audit Report, it is mandatory to comply on following points of Fire Hydrant System and availability of spare/emergency material at SLDC, Airoli.

- Isolation valves to be provided for Hydrant and sprinkler at various location.
- 2) Replacement of sprinklers and providing butterfly valves at various location.

3) Providing sprinkler drain lone for each floor.



CAMP Petition for FY 2025-26 to FY 2029-30

- Integration of flow switches with Fire alarm system
- Removal of existing conventional MCP (Manual Call Point) and replacing with addressable MCP (Manual Call Point).
- Providing & Fixing Automatic Fir/Smoke Dampers at various locations.
- 7) Supply of spare sprinklers 10 Nos
- Supply of Fireman Axe of 11 kV Insulation rating 1 No.
- 9) Supply of Aluminum fold-able Stretcher 2 Nos.
- 10) Supply of staircase Evacuation Chair 1 No.
- 11) Supply of Wheel Chair 1 No.
- 12) Fire rated door for 120 mins

Considering the urgency of work as per above facts & to carry out the said work.

Client & Server Antivirus Software License

Cyber security is one of the most prominent challenges faced by the power sector nowadays. This office is taking various measures for ensuring the Cyber Security. As a part of these measures, it is necessary to procure the advanced Antivirus Software which can handle the advanced cyber security threats efficiently. Accordingly, this office has gone through the reputed antivirus software. This antivirus is having the advanced features such as, Threat Detection & Prevention Features, Network Protection Features, Malware Protection (AV) Features, Automatic Investigation Features, Device Control Features, Threat Remediation Features etc.

SITC of Backup Appliance with Software and Tape Library

Considering the criticality of applications hosted at SLDC data Center, online automated backup & restoration system is essential to prevent from any data loss. Accordingly, For automatic Backup of all the application hosted at SLDC data Center, servers and Desktop PC's at the MSLDC Airoli to overcome any disaster, New Backup Appliance with Software & Tape Library was procured. Data stored on Backup appliance are getting backed up on the Tape Library also. Tapes are being moved to ALDC Ambazari at periodic interval. In case of any disaster occurs to the Backup Appliance, Data can be recovered through Tapes D.

Page 42 of 193

SITC of Video Wall Display Unit for SOC

Open Source SOC has been established at MSLDC Airoli by configuring open source StEM. C-SOC is being operated on 24 x 7 basis. For the purpose of centralized monitoring of logs and events collected from MSLDC and ALDC on StEM, SOC team is using the Video Wall Display Unit in SOC Room at SLDC Airoli.

SLDC – SITC of 80 RTU:

This scheme has helped the system operators to take real time quick and efficient grid management decisions due to availability of real time data by integration of Field RTU installed at Sub-Station in SCADA System at SLDC, Kalwa and ALDC, Ambazari.

SLDC – SITC of 70 RTU:

This scheme has helped the system operators to take real time quick and efficient grid management decisions due to availability of real time data by integration of Field RTU installed at Sub-Station in SCADA System at SLDC, Kalwa and ALDC, Ambazari.

SLDC - SITC of 80 RTU:

This scheme has helped the system operators to take real time quick and efficient grid management decisions due to availability of real time data by integration of Field RTU installed at Sub-Station in SCADA System at SLDC, Kalwa and ALDC, Ambazari.

SLDC - SITC of 70 RTU:

This scheme has helped the system operators to take real time quick and efficient grid management decisions due to availability of real time data by integration of Field RTU installed at Sub-Station in SCADA System at SLDC, Kalwa and ALDC, Ambazari.

SLDC – SITC of 27 RTU:

This scheme has helped the system operators to take real time quick and efficient grid management decisions due to availability of real time data by integration of Field RTU installed at Sub-Station in SCADA System at SLDC, Kalwa and ALDC, Ambazari.

SITC of LED Video Wall Display in Control Room:

Benefits of LED Video Wall Display in Control Room for that wonitoring for System Operators are as below, viz.

- It helps to increase overall efficiency of System Operators due to availability of continuous display on screen.
- . It helps in taking correct preventive action dating contingency condition involved in the

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grid.

- It helps to minimize the penalty to Utility due to proper monitoring of DSM mechanism.
- It helps to increase in the overall operational efficiency of state load dispatch centre in grid operations and economic load dispatching.

Integration of 20 DC in the existing SCADA in SLDC, Kalwa and ALDC, Ambazari

ACI&P has installed 20 DC for acquisition of real time SCADA data of Maharashtra power system at SLDC, Kalwa and ALDC, Ambazari. 10 DCs are installed at SLDC, Kalwa and 10 redundant DCs configured for the same set of data are installed at ALDC, Ambazari. As per requirement of ACI&P, present architecture of 13 DC integration is replaced with new configuration of 20 DC integration. The 10 nos. of DCs are integrated in SCADA system at SLDC, Kalwa and 10 nos. of DCs are integrated at ALDC, Ambazari. This scheme helps in increasing the redundancy in communication links and availability of redundant data to the system operator for monitoring of the real time grid operation at SLDC, Kalwa and ALDC, Ambazari.

3.5. Depreciation

The Hon'ble Commission in its order in Case No. 233 of 2022 opined the following regarding claim of depreciation, during the fourth control period.

For FY 2022-23:

"The addition to GFA for FY 2022-23 is not considered for computation of depreciation as the capitalization during FY 2022-23 is considered to be funded from LDCD Fund."

For FY 2023-24:

"The Commission has allowed LDCD fund to be used for funding capitalisation for the 4th Control Period and is sufficient to meet capitalisation approved for FY 2023-24 and FY 2024-25. Accordingly, the Commission has not considered any addition to GFA to the extent of utilization of LDCD fund for these years. In case, MSLDC incurs funds in excess of LDCD fund balance, the same shall be assumed to be funded through debt and equity and hence would be eligible to claim depreciation, interest on loan and RoE on truing-up subject to prudence check."

MSLDC humbly submits that the MSLDC prepares the present Patition following the directives of

Page 44 of 193

Hon'ble Commission with respect of utilization of LDCD fund and hence funding for capitalization during FY 2022-23 and FY 2023-24 has considered from the proceeds accumulated in LDCD (Load Despatch Center Development) fund created by the Hon'ble Commission.

Therefore, instead of considering actual depreciation as reflected in its Annual account, MSLDC has considered depreciation for FY 2022-23 and FY 2023-24 as per amount approved by the Hon'ble Commission in its order in Case No 233 of 2022. The reason for considering the depreciation amount as approved by the Hon'ble Commission is in its order in Case No 233 of 2022, the Hon'ble Commission had directed the Petitioner to consider approved GFA values in future Petition. The relevant part from the said order is reproduced below:

"3.9.10 The Commission has examined this issue and is of the opinion that MSLDC, in its Tariff Petitions, has to consider the opening values of GFAs which have been approved by the Commission in the past Orders. Submitting the Petition with opening values (GFA, Normative Louns, equity, etc.) different from those approved by the Commission in the earlier Orders leads to misrepresentation of the values in front of the stakeholders and hence needs to be avoided. Further, the Commission in the present Order has not considered MSLDC's request regarding approval of the past disallowed capitalisation which is the key reason for the difference in the opening values. Accordingly, MSLDC, in the next Petition, should use only the opening values as approved by the Commission in the present Petition.

3.9.11 Accordingly, the Commission has considered the closing GFA for FY 2018-19 approved in the MYT Order in Case No. 291 of 2019 which is considered as the opening GFA for FY 2019-20. The addition to GFA is considered based on the approved Capitalization and utilisation of LDCD fund."

As the Petitioner has to follow the GFA amount as approved in Case No 233 of 2022, and the capitalization had been made from LDCD fund for which no depreciation is allowed, the Petitioner has considered the approved depreciation for FY 2022-23 and FY 2023-24 under True up of the said years.

Against the approved depreciation of Rs. 115.60 Lakh (FY 2022-23) and Rs. 115.51 Lakh (FY 2023-24), MSLDC claims the depreciation for truing up as Rs. 115.60 Lakh and Rs. 115.51 Lakh, for FY 2022-23 and FY 2023-24, respectively. The details are given below.

Page 45 of 193

Table 10: Depreciation for FY 2022-23 and FY 2023-24

(Rs. Lakh)

	FY 2022-23			FY 2023-24		
Particulars	Approved	Actual	True- Up	Approved	Actual	True-Up
Depreciation	115.60	115.60	0	115.51	115.51	0

MSLDC humbly requests the Hon'ble Commission to allow the depreciation as claimed above. The details of the Depreciation for FY 2022-23 and FY 2023-24 are provided in Form F-4 of the Petition Formats, submitted along with this filling.

3.6. Interest & Financial Charges

The interest on the existing actual loan for MSLDC has been repaid and hence, no actual loan is considered. From FY 2019-20 onwards, all loans are normative loan only.

For the purpose of estimation of Interest Cost corresponding to new loans for new Capital Expenditure Schemes, as per MYT Regulations 2019, the loan component can be based on normative debt-equity ratio of 70:30. However, as explained above, the capitalization from FY 2022-23 onwards is funded through LDCD fund and hence, no new additional normative loan has been considered.

As explained above in the depreciation section, the GFA as approved by the Commission in Case No 233 of 2022 has been considered by the Petitioner as starting GFA for FY 2022-23 and therefore the approved amount of opening normative loan (derived based on approved GFA) would be opening normative loan for FY 2022-23 under Trueing up of FY 2022-23. As capitalization is funded from LDCD fund, there is no addition in loan amount during FY2022-23 and FY 2023-24, which is as per approach followed by the Commission in its order in Case No 233 of 2022.

Further, MSLDC has considered the interest rate as submitted MSETCL, having actual data from MSETCL. The depreciation, calculated above, is considered as loan repayment as per MYT regulations, 2019.

The detailed calculation for the Interest on Normstive Loan for FY 2022-23 and FY 2023-24 is shown below:



Page 46 of 193



Table 11: Interest on normative Loan for FY 2022-23 and FY 2023-24

(Rs. Lakhs)

				(PCS: L/BKHS)
Particulars	Approv ed in (Case No 233 of 2022)	Actual FY 22-23	Approve d in (Case No 233 of 2022)	Actual FY 23-24
Opening Balance of Net Normative Loan	730,92	730.92	615.32	615.32
Less: Reduction of Normative Loan due to retirement or replacement of assets	0	0	0	0
Addition of Normative Loan due to capitalization during the year	0	0	0	0.
Repayment of Normative loan during the year	115,60	115.60	115.51	115.51
Closing Balance of Net Normative Loan	615.32	615.32	499.82	499.81
Average Balance of Net Normative Loan	673.12	673.12	557.57	557.565
Weighted average Rate of Interest on actual Loans (%)	8.93	9.05	8.93	9.36
Interest Expenses	60.11	60.92	49.79	52.19
Total Interest & Financing Charges	60.11	60.92	49.79	52.19

MSLDC humbly requests the Hon'ble Commission to approve above expenses towards Interest on Loan. The details of the interest of normative loan have been provided in Form F-5 of Petition Formats.

3.7. Return on Equity

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019 under Regulation 29 specifies as under:

"29 Return on Equity

29.1 Return on Equity for the Generating Company, Transmission Licensee, Distribution Wires Business and MSLDC shall be allowed on the equity capital determined in accordance with Regulation 27 for the assets put to use, at the rate of up to 15.5 per cent per annum in Indian Rupee terms, and for the Retail Supply Business, Return on Equity shall be allowed on the amount of equity capital determined in accordance with Regulation 27 at the rate of up to 17.5 per cent per annum in Indian Rupee terms:

Provided that Return on Equity shall be allowed in two parts viz. Base Return on Equity, and Additional Return on Equity Uniked to actual performance:

Provided further that Additional Return on Equity shall be allowed at time of truing up for

LDC MYT Petition for FY 2025-26 to FY 2029-30

Page 47 of 193

respective year based on actual performance, after prudence check of the Commission: "

MSLDC would like to reproduce the observations made by the Hon'ble Commission to Return on Equity for True up of FY 2020-21 and FY 2021-22 in Case No 233 of 2022 as given below.

"3.11.13 In view of the above, the Commission is presently not allowing MSLDC to recover the additional RoE in absence of any framework to assess the performance. MSLDC is directed to resubmit its proposal within three months from the issue of this Order with a detailed proposal including similar framework operational in other parts of the country. MSLDC should also study the recommendations given in various reports issued by entities like the Forum of Regulators, etc. The framework should also outline how the data would be collated against the proposed parameters and process to be followed for validation of the performance data including timely compliances of Orders issued by the Commission. The framework will be applicable on a prospective basis only".

It has been observed by the Petitioner that under MYT Regulation, 2024, the Hon'ble Commission has specified the mechanism/ format for verifying performance of SLDC/STU. Based on the mechanism for monitoring the performance as specified in MYT Regulation, 2024, the Petitioner has submitted its performance in selected KPI during FY 2022-23 and FY 2023-24 for consideration of Hon'ble Commission. Accordingly, the Petition request the Hon'ble Commission to grant the additional RoE as requested by the Petitioner during FY 2022-23 and FY 2023-24.

Further, as explained earlier, no additional equity has been considered as funding for capitalization is considered from LDC development fund. The opening equity for FY 2022-23 is considered as per the approved value of closing equity for FY 2021-22 in the order in Case No 233 of 2022. The Return on Equity for FY 2022-23 and FY 2023-24 is shown in Table below:

Table 12: Return on Equity for FY 2022-23 and FY 2023-24

	Actual	FY
9	23-24	
)		
ε.		

(Rs. Lakhs)

Particulars AR V	Approved in (Case No 233 of 2022)	Actual FY 22-23	Approved in (Case No 233 of 2022)	Actual F 23-24
Regulatory Equity at the beginning	1 67.45	1267.45	1,267.45	1267.45



Particulars	Approved in (Case No 233 of 2022)	Actual FY 22-23	Approved in (Case No 233 of 2022)	Actual FY 23-24
Equity portion of capitalization during the year	0	0	0	0
Reduction in Equity Capital on account of retirement / replacement of assets	0	0	0	0
Regulatory Equity at the end of the year	1267.45	1267.45	1,267.45	1267.45
Return on Equity Computation				
Return on Regulatory Equity at the beginning of the year (base RoE + Additional RoE)	177.44	191.13 (@14%) 1.08%)	177.44	191.26 (@14%+1.09 %)
Return on Regulatory Equity addition during the year	0	0	0	0
Total Return on Equity	177.44	191.13	177.44	191.26

MSLDC humbly requests the Hon'ble Commission to approve the above expenses towards Return on Equity. The finalization of revenue gap/ surplus for True up of FY 2022-23 and FY 2023-24 may include the impact of additional RoE. The details of the Return on Equity for FY 2022-23 and FY 2023-24 have been provided in Form F- 9 of MYT Formats.

3.8. Income Tax

It is respectfully submitted that MSLDC has no separate corporate existence i.e., it is not a separate Company and is being operated by the Government Company, i.e., MSETCL. It is also submitted that the Government Company i.e., MSETCL, is also being regulated by this Hon'ble Commission. Further, MSLDC respectfully submits that the expenditure/income pertaining to SLDC activities is accounted separately in line with the Hon'ble Commission directives, for the purpose of regulatory reporting.

It is respectfully submitted that there is neither separate filing of Income Tax Returns in respect of MSLDC nor allocation/claim of Income Tax towards MSLDC by MSETCL. However, in future if such allocation/claims are formulated, MSLDC shall be able to claim in future period in accordance with provisions outlined under MERC MYT Regulations over the control period. MSLDC humbly request the Commission to kindly grant theat to submit the relevant details, if required. In view of above, MSLDC has not claimed income Tax.

Page 49 of 193

3.9. Non-Turiff Income

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019 under Regulation 98 specifies as under:

"98.1 The amount of Non-Tariff Income relating to the MSLDC as approved by the Commission shall be deducted from the Aggregate Revenue Requirement in determining the Fees and Charges of the MSLDC:

Provided that the MSLDC shall submit full details of its forecast of Non-Tariff Income to the Commission in such form as may be stipulated by the Commission.

- 98.2 The Non-Tariff Income shall include:
 - a) Income from sale of scrap;
 - b) Income from investments;
 - c) Interest income on advances to suppliers/contractors;
 - d) Income from rental from staff quarters;
 - e) Income from sale of tender documents;
 - f) Any other Non-Tariff Income:

Provided that the interest earned from investments made out of Return on Equity of the MSLDC shall not be included in Non-Tariff Income."

MSLDC submits that the interest income is not considered as non-tariff income as discussed in earlier orders of the Hon'ble Commission. The same approach has been followed in present Petition and MSLDC has not considered income from fixed deposits (as reflected in audited account) towards non-tariff income. Further, the Hon'ble Commission had instructed to include the interest earned from LDCD fund under non-tariff income. The Petitioner has considered the interest from LDCD fund under non-tariff income for FY2022-23 and FY 2023-24. The details of LDCD fund and details of such interest income is given at the end of this section. MSLDC humbly requests Hon'ble Commission to allow Non-Tariff Income as proposed by MSLDC. The details of the Non-Tariff Income are provided below and given in Form F-10 of MYT Formats.

Table 13: Non-Tariff Income for FY 2022-23 and FY 2023-24

(Rs. Lakh)

	FY 2022-23	FY 2023-24			
Particulars	Approved Actual	True-Up Requirement	Approved in	Actual	True-Up Requirement

Page 50 of 193



	233 of 2022)			in (Case No 233 of 2022)		
Non-Tariff Income	376.61	526.07	149.46	297.94	722.53	424.59

3.10. Income from Open Access Charges

As per the provisions given under the Multi Year Tariff Regulation 2019, MSLDC submits that the actual income from Open Access Charges including Rescheduling Charges is Rs. 1262.36 Lakh for FY2022-23 and Rs. 1736.91 Lakh for FY 2023-24.

Table 14: Income from Open Access charges for FY 2022-23 and FY 2023-24

(Rs. Lakh)

	FY 2022-23			FY 2023-24			
Particulars	Approved in (Case No 233 of 2022)	Actual	True-Up Requirement			True-Up Requirement	
Income from open access charges including re- scheduling charges	1	1262.36	58.95	1,227.48	581.98	-645.50	

The Petitioner submits that in the FBSM framework (up to 10 October 2021), Rescheduling charges were calculated for the station as a whole during revisions for the same period /block. But in the DSM regime (from 11 October 2021), Rescheduling charges @ Rs. 2250 per unit per revision are calculated unit wise and block wise. In FBSM, Discoms paid to generators as per actual generation; whereas, in DSM, payment is as per schedule. However, in DSM regime, 14 Discoms plus 72 generators / sellers are paying scheduling/ re-scheduling charges. Further, in DSM, first time generators are involved in deviation ambit. So, to minimize the deviation charges generators are keen to revise their schedules as close as to their actual generation. Hence, number of revisions are more in DSM and that is reflected in income from re-scheduling charges. It is to be noted that the income from re-scheduling charges has increased considerably in FY 2022-23. The re-scheduling charges from FY 2023-24 onwards were reduced as mentioned in the order in Case No 233 of 2022. Due to reduction of charges, actual re-scheduling income reduced in FY 2023-24 in comparison to FY 2022-23. The relevant part of the order is reproduced below.

"2.2.22 In view of this, the Commission is of the view that it would be appropriate to reduce the rescheduling charges from its present level considering that the revisions in schedules

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undertaken by the state entities helps MSLDC in deviation management and automation of scheduling/rescheduling services at MSLDC. Considering the suggestions of the Distribution Licensees, the Commission thinks it fit to rationalize and reduce the rescheduling charges to a level lower than 50% of the present level for the time being. Accordingly, it is directed that the rescheduling charges shall be Rs. 1000/- per revision in schedule after finalization of the schedule on day-ahead basis and MSLDC (if felt necessary for any pressing reason) may make its detailed submission in next MYT Petition, if any change is required in these charges."

MSLDC humbly requests the Hon'ble Commission to approve Income from Open Access charges based on actual Audited Accounts. The details of the Income from Open access are provided in Form F-11 of Petition Formats.

3.11. Income from Monthly Operating Charges

MSLDC has received actual income from Monthly Operating Charges of Rs. 3459.71 for FY 2022-23 and Rs. 3076.61Lakh for FY 2023-24. MSLDC submits that Monthly Operating Charges for these years have been collected as per norms approved by the Hon'ble Commission in its order in Case No. 233 of 2022. The details are given below.

Table 15: Income from Monthly Operating Charges for FY 22-23 and FY 2023-24
(Rs. Lakh)

Particulars	FY 2022-23		FY 2023-24			
	Approved in (Case No 233 of 2022)	CONTRACTOR OF THE PROPERTY OF	True-Up Requirement	Approved in (Case No 233 of 2022)	90500000	True-Up Requirement
Income from Monthly Operating charges	3,479.56	3454.41	- 25.15	3076,50	3071.52	-4.98

3.12. Summary of True-Up for FY 2022-23 and FY 2023-24

In the Hon'ble Commission's Order, in Case No.233 of 2022, the ARR forecast for FY 2022-23 and FY 2023-24 was Rs 3479.56 Lakh and Rs, 3076.50 Lakh, respectively. Based on the above discussion, the head wise actual expenditure against actual receipts and surplus/ shortfall is summarized in the table below:

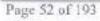


Table 16: Truing -Up for FY 2022-23 and FY 2023-24

(Rs. Lakh)

FY 2022-23

Sr N o.	Particulars	Approved	Actual	Deviation	Net Entitleme nt after sharing of gains/(loss es)
1	Operation & Maintenance Expenses	3,224.97	3680.99	456.02	3369.13*
2	RLDC Fees and WRPC Charges	651.52	829.15	177.63	829.15
3	Depreciation Expenses	115.60	115.60	0	115.60
4	Interest on Loan Capital	-60.11	60.92	0	60.92
5	Interest on Working Capital	66.50	65,02	-1.48	21,67
6	Reactive Energy Charges paid to Generators/TSUs	0	0	0	0.00
7	Income Tax	-0	0	0	0.00
8	Total Revenue Expenditure	4,118.70	4751.68	632.17	4396,47
9	Return on Equity Capital	177.44	191.13	13.69	191.13
10	Total Expenditure for MSLDC	4,296.14	4942.81	645.87	4587.60
11	Less: Non-Tariff Income	376.61	526.07	149.48	526.07
12	Less: Income from Open Access charges	1203.41	1262,36	58.95	1262.36
	Less: Income from Rescheduling Charges	0	2279.23	2279.23	2279.23
13	Annual Fixed Charges for MSLDC	2,716.12	875.16	-1841.79	519.95
14	Revenue	3479.56	3454.41	-25.15	3454.41
15	Revenue Gap/(Surplus)	-763.45	-2579.24	-1815.79	-2934.46

FY 2023-24

Sr. No	Particulars	Approved	Actual	Deviation	Net Entitleme nt after sharing of gains/(loss es)
1_	Operation & Maintenance Expenses	3511.09	3837.60	326.51	3628.88*

Page 53 of 193

MSLDC MYT Petition for FY 2025-26 to FY 2029-30

8

Sr. No	Particulars	Approved	Actual	Deviation	Net Entitleme nt after sharing of gains/(loss es)
2	RLDC Fees and WRPC Charges	684.10	1129.32	445.22	1129.32
3	Depreciation Expenses	115.51	115.51	0	115.51
4	Interest on Loan Capital	49.79	52.19	2.40	52.19
5	Interest on Working Capital	63.99	68.20	4.21	22.73
6	Reactive Energy Charges paid to Generators/TSUs	0		0.00	0.00
7	Income Tax	0		0.00	0.00
8	Total Revenue Expenditure	4424.48	5202.83	778.35	4948.64
9	Return on Equity Capital	177.44	191,26	13.82	191.26
10	Total Expenditure for MSLDC	4601.92	5394.09	792.17	5139.89
11	Less: Non-Tariff Income	297.94	722.53	424.59	722.53
12	Less: Income from Open Access charges	1227.48	581.98	-645.50	581.98
	Less: Income from Rescheduling Charges	0	1154.93	1154.93	1154.93
13	Annual Fixed Charges for MSLDC	3076.50	2934.64	-141.86	2680.45
14	Revenue	3076.50	3071.52	-4.98	3071.52
15	Revenue Gap/(Surplus)	0	-136.87	-136.87	-391.07

^{*} after considering sharing of gain / losses as already explained in the relevant part in this chapter.

Thus, on final truing up for FY 2022-23 and FY 2023-24, there is surplus of Rs. 2935.29 Lakh and Rs. 393.60 Lakh, respectively, treatment of which has been discussed as given below.

3.13. LDCD Fund

The surplus, after considering net entitlement, is transferred to LDCD fund and interest income from LDCD fund is considered as non-tariff income. The details under true-up are given below.

Table 17: LDCD fund for FY 2022-23 and FY 2023-24

(Rs. Lakh)

Page 54 of 193

Particulars	Amount allocated to the LDCD fund FY 2022-23	
LDCD fund at the starting of year	6750.87 (as approved for FY 21-22 end of the year amount)	9140.95
Revenue Gap / (Surplus) of the Year as submitted in the present Petition	2934.46	391.07
Utilisation of LDCD Fund	545.21	318.30
LDCD fund at the end of year	9140.12	9212.88
Average LDCD fund	7945,49	9176.50
Interest rate	5.70%	6.65%
Income earned on LDCD fund – transferred to non-tariff income	452.85	610.30

The Petitioner has calculated the interest income on the basis of average LDCD fund during the corresponding year, as per approach already adopted by the Hon'ble Commission. The same amount is already considered as non-tariff income by the Petitioner. For calculating the interest income, interest rate on the basis of weighted average of interest rate available for various fixed deposits schemes of SLDC, has been considered. The Hon'ble Commission is humbly requested to approve the details regarding LDCD fund, as submitted above.





4. Provisional True-Up for FY 2024-25

The Hon'ble Commission has notified the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019 (MYT Regulations, 2019) which is applicable for the control period comprising five Years from April 1, 2020 to March 31, 2025. Subsequently, the Hon'ble Commission has notified Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2024 (MYT Regulations, 2024).

Regulation 5.1 of MYT Regulations, 2024 has given the details of multi-year framework including requirement of provisional True up for FY 2024-25. The relevant provisions are given below.

"5.1 The Petitions to be filed in the Control Period under these Regulations are as under: a)
Multi-Year Tariff Petition, which is complete in all aspects as per these Regulations, shall be
filed by November 1, 2024 by Generating Companies, Transmission Licensees, ESSD,
MSLDC and STU, and by November 30, 2024, by Distribution Licensees, comprising:
i. Truing-up for FY 2022-23 and FY 2023-24 to be carried out under the Maharashtra
Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019:
Provided that the Commission may, if it considers appropriate, carry out the Truing-up for
years prior to FY 2022-23 under the Maharashtra Electricity Regulatory Commission (Multi
Year Tariff) Regulations, 2019, along with the Truing-up for FY 2022-23, in case such Truing
up is yet to be completed;

- ii. Provisional Truing-up for FY 2024-25 to be carried out under the Maharushtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019;
- iii. Aggregate Revenue Requirement for each year of the Control Period under these Regulations;
- iv. Revenue from the sale of power at existing Tariffs and charges and projected revenue gap for each year of the Control Period under these Regulations;
- v. Proposed category-wise Tariff or Fees & Charges for each year of the Control Period under these Regulations; "

Following the above provision regarding provisional true-up, the present chapter comprises provisional True up of FY 2024-25 as per MYT Regulation, 2019. Part I of MYT Regulations, 2019 has detailed out the provisional related to Annual Fixed Charges (AFC) and Fees and charges of

Page 56 of 193



MSLDC. Regulation 95 provides the methodology to be followed for determination of Annual Fixed Charges (AFC) for MSLDC. The provisions are given below:

"95 Annual Fixed Charges for MSLDC

The Annual Fixed Charges to be levied by the MSLDC shall provide for the recovery of the Aggregate Revenue Requirement of the MSLDC for the respective Year of the Control Period, as reduced by the amount of Non-Tariff Income as approved by the Commission and comprising the following:

- (a) Operation and Maintenance expenses;
- (b) Regional Load Despatch Centre (RLDC) Fees and Western Region Power Committee (WRPC) Charges;
- (c) Depreciation;
- (d) Interest on Loan Capital;
- (e) Interest on working capital
- (f) Return on Equity Capital;
- (g) Income Tax:

minus:

- (h) Income from Open Access charges;
- (i) Non-Tariff income:

Provided that Depreciation, Interest on Loan, and Return on Equity for the MSLDC shall be allowed in accordance with the provisions specified in Part D of these Regulations:

Following the above principle, MSLDC has prepared the AFC related to provisional true-up of FY 2024-25 and the details of each component of AFC / Aggregate Revenue Requirement is given below.

4.1. Operation & Maintenance Expenses

The provision for projected O&M expenses over the control period is given in Regulation 96 of MYT Regulation, 2019. The same is reproduced below.

"96.2 The Operation and Maintenance expenses shall be derived on the basis of the average of the Trued-up Operation and Maintenance expenses after adding deducting the share of efficiency gains/losses, for the three Years ending March 31, 2019, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission:

Page 57 of 193

Provided that the average of such Operation and Maintenance expenses shall be considered as Operation and Maintenance expenses for the Year ended March 31, 2018, and shall be escalated at the respective escalation rate for FY 2018-19 and FY 2019-20, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2020; Provided further that the escalation rate for FY 2018-19 and FY 2019-20 shall be computed by considering 20% weightage to the average yearly inflation derived based on the monthly Whalesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 80% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past five financial years as per the Labour Bureau, Government of India. 96.3 At the time of true-up for each Year of this Control Period, the Operation and Maintenance expenses shall be derived on the basis of the Final Trued-up Operation and Maintenance expenses after adding/deducting the sharing of efficiency gains/losses, for the year ending March 31, 2020, excluding abnormal expenses, if any, subject to prudence check by the Commission, and shall be considered as the Base Year Operation and Maintenance expenses:

Provided that the Operation and Maintenance expenses for each subsequent year shall be determined by escalating these Base Year expenses of FY 2019-20 by an inflation factor with 20% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 80% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past five financial years as per the Labour Bureau, Government of India, as reduced by an efficiency factor of 1% or as may be stipulated by the Commission from time to time, to arrive at the permissible Operation and Maintenance expenses for each year of the Control Period:

Provided further that, in the Truing-up of the O&M expenses for any particular year of the Control Period, an inflation factor with 20% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 80% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past five financial years as per the Labour Bureau, Government of India, as reduced by an efficiency factor of 1% or as may be stipulated by the Commission from time

Page 58 of 193

to time, shall be applied to arrive at the permissible Operation and Maintenance expenses for that year.

The Petitioner has noted the provisions as mentioned above regarding O&M expenses. To determine the normative O&M expenses for FY 2024-25, the Petitioner has considered the trued-up O&M expenses for FY 2023-24 after sharing of gain and loss, as presented in this petition, which is as per methodology prescribed in MYT Regulations, 2019 (as given in the True up chapter). Further, the Petitioner has considered the escalation factor as 4.61 %, which is considered for FY 2023-24 (details are provided in true up chapter and considering CPI and WPI data as per methodology given in the MYT Regulations, 2019). The normative expenses for FY 2024-25 is projected as Rs 3796.25 Lakhs. Further, the Petitioner submits that a new pay scale (after wage revision) has been introduced from the month of August 2024 for SLDC. Therefore, during FY 2024-25, employee expenses would be with new pay scale for August 2024 - March 2025 period. The Petitioner has considered the impact of wage revision for remaining 6 months period during FY 2024-25 (Oct 2024 - March 2025), The Petitioner has estimated that per month impact due to wage revision (i.e. increase in employee expenses due to wage revision) as Rs 11.6 Lakhs (derived based on pre-wage revision and post-wage revision salary expenses), which means additional expenditure of Rs 69.61 Lakhs in remaining sixmonth period. Also, the Petitioner has provisionally calculated the impact of wage revision arrears, which is around Rs 650 Lakhs. The wage revision arrears have to be paid in three installments and two installments will be paid during FY 2024-25. The estimated expenditure during FY 2024-25 for wage revision arrears is Rs 340.38 Lakhs. The Petitioner proposes total O&M expenses as Rs 4206.25 Lakhs during FY 2024-25 (normative O&M expenses plus additional salary expenses due to wage revision plus two installments of wage revision arrears).

The Operation and Maintenance (O&M) expenses approved by the Hon'ble Commission for FY 2024-25 in Case No. 233 of 2022 and the expenses projected by MSLDC are summarized in Table

as below:



Table 18: O&M Expenses for FY 2024-25

(Rs Lakh)

Sr. No. Particulars	Particulars	FY 2024-25			
	Approved in (Case No 233 of 2022)	April - March (Estimated)	Provisional True- Up Requirement		
1.	Normative O&M Expenses	3,459.06	3796.25		
2.	Additional O&M Expenses	132.53			
3.	Total O&M Expenses	3,591.59	4206.25 (including additional salary expenses due to wage revision plus two instalments of wage revision arrears)	614.66	

The details of working for O&M expenses are given in MYT format (form F2, and F2.1). MSLDC requests the Hon'ble Commission to approve the above O&M expenses for FY 2024-25.

4.2. Interest on Working Capital

The methodology specified in the MERC MYT Regulations, 2019 has been considered for calculation of interest on working capital for FY 2024-25. It is respectfully submitted that the interest on working capital shall be payable on normative basis notwithstanding that MSLDC has not taken any working capital lean from any outside agency. The same approach was approved by Hon'ble Commission in its earlier orders. For FY 2024-25, SBI base rate (MCLR) prevailing as on the date of filing the petition (8.95% applicable for October 2024) with 150 basis point has been considered as interest rate on working capital.

Table 19: Interest on Working Capital for FY 2024-25

(Rs. Lakh)

Sr.		FY 2024-25		
No.	Particulars	Approved in (Case No 233 of 2022)	Estimated	Prov True Up Requirements
1.	Operations and Maintenance Expenses for one ponth	299.30	350.52	1

Page 60 of 193

Sr.	555 500 m	FY 2024-25		
No.	Particulars	Approved in (Case No 233 of 2022)	Estimated	Prov True Up Requirements
2.	One and a half month equivalent of expected revenue from levy of Annual Fixed Charges	412.72	412.72	To the second
3.	Working Capital Requirement	712.02	763.24	51.22
4.	Rate of Interest (% p.a.) - SBI Base Rate (MCLR) plus 150 basis points	9.45%	10.45%	
5.	Interest on Working Capital	67.29	79.76	12.47

4.3. RLDC Fees

RLDC Fees and Charges for FY 2024-25 has to be decided as per Central Electricity Regulatory Commission (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2024. However, the same was not decided yet by CERC. It is to be noted that as per present mechanism, MSEDCL has been paying the bill to WRLDC and MSLDC is reimbursing the same to MSEDCL. The Petitioner has considered the present monthly bill of WRLDC. Considering the monthly expenses for April – June 2024 period, the Petitioner has assumed Rs 62.17 Lakhs as monthly expenses in these regard for FY 2024-25. It has been noticed by the Petitioner that WRLDC charges has been reduced recently if compare the WRLDC charges with carlier period. The Petitioner observed that this is due to a recent order of CERC dated 30.11.2023 on the issue of "Removal of Difficulties for Recovery of Fee and Charges of Load Despatch Centre (LDC) charges in pursuance of the provisions of the Central Electricity Regulatory Commission (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2019." The CERC has opined the following about the recovery of RLDC charges after enactment of General Network Access (GNA), Regulations (Petition No. 17/SM/2023).

"8. Considering the difficulties raised by Grid-India in the computation of monthly LDC charges under the RLDC Fee & Charges Regulations after implementation of the GNA Regulations, in the exercise of our powers under Regulation 40 of the RLDC Fee & Charges Regulations, we hereby direct that LDC charges for distribution licensees, buyers and sellers shall be calculated on the basis of their GNA quantum under clauses



(b) and (c) of Regulation 30 and Regulation 31 of the RLDC Fee and Charges Regulations. The calculation of LDC charges for inter-State transmission licensees and generating stations shall continue to be carried out in terms of clauses (a) and (b) of Regulation 30 of the RLDC Fee and Charges Regulations."

Further, it has been observed in FY 2023-24 other than monthly RLDC charges, the Petitioner has to pay performance linked incentive (PLI) to WRLDC. The Petitioner has assumed that during FY 2024-25, Rs 120 Lakhs would be PLI expenses, considering the past data of PLI available for FY 2023-24, Considering the above, the projected RLDC fees for FY 2024-25 is Rs 866.04 Lakhs. The details are given below.

Table 20: RLDC Fee for FY 2024-25

(Rs. Lakh)

Particulars	Approved in (Case No 233 of 2022)	Estimated	Provisional True Up Requirements
RLDC Fees	718.30	866,04 (RLDC fees of 746.04 plus PLI incentive of 120.00)	147.74

Accordingly, MSLDC requests the Hon'ble Commission to approve RLDC Fees and WRPC Charges for FY 2024-25. The details of RLDC Fees and WPRC Charges are also provided in Form F-7 of Petition Formats.

4.4. Capital Expenditure Plan and Capitalization.

The Hon'ble Commission in Case No.233 of 2022 has approved capitalization amount of Rs. 2566.90 Lakh for FY 2024-25. MSLDC has now revised its capitalization estimates for FY 2024-25 considering capitalization anticipated of various existing as well as new schemes during the year. Accordingly, for the purpose of provisional traing up of FY 2024-25, MLSDC proposes a revised estimate for capitalization to the tune of Rs. 1,623.94 Lakh.

Capital Expenditure and Capitalization towards DPR and Non DPR schemes are presented in the

table below.



Table 21: Revised Capex and Capitalization for FY 2024-25

(Rs. Lakh)

Project Code	Capital expenditure	Capitalisation
a) DPR Schemes		
DSM (Change request)	56.00	56.00
Renovation and modernization of existing SCADA at SLDC and ALDC	2600	0
Class I type staff quarter and guest house and recreation hall and gymnasium		
Replacement of existing VPS at ALDC		
Change Request for modification in DSM software		
Change Request for modification in RE-DSM software	26	26
Upgradation of the Oracle Database Software from Standard Edition to the Enterprise Edition used for the DSM Software. (For DC-DR Active-Active Solution)		985
Development of new FBSM software	116	
Additional: Construction of compound wall from main entrance gate (NH-6) to colony gate L= 326RMT X 2= 652RMT (Note submitted vide no SE/ALDC/NGP/Tech/416 Dt 05.10.2023) at ALDC		100
b) Non-DPR Schemes	N 1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Life extension of Krishna and Kaveri building	40	40
Structural strengthening of new MSLDC building	95	0
Energy efficient building upgradation and solar lighting		
Staff recreation and rejuvenation activity	20	20
Hardware for reserve and ancillary services software (GAMS software)	25	25
Development of load forecasting software		
IT infrastructure (Firewall, 2 No of FTP, Switches) at ALDC	7.94	7.94
SITC of desktop and Router at ALDC	3.07	3.07
SITC of desktop and Laptops at ALDC	15.14	15.14
Renv & Moden of Conference Hall at ALDC	24.01	24.01
S/I/T/C for 2 nos, of CISCO routers and switches for SCADA MPLS		
Building renovation and modernisation/life extension of building at ALDC	50	50
Furniture for office and equipment at ALDC *	10	10

Page 63 of 193



Project Code	Capital expenditure	Capitalisation
Building renovation and modernisation/life extension of building		
Furniture for office and equipment		
A/C Plant		
UPS system		
ALDC Mise expenses - life extension of building, Testing equipment, furniture	23	23
Purchase of 4 Nos. of PSSE Software Licenses at MSLDC, Airoli	99.02	99.02
Incidental SCADA expenses at ALDC	10	10
IT Infrasctructure Development (Firewall, Router, Switches, Server, Desktop/Laptop/Printer) at ALDC	15	15
Rooftop solar scheme at ALDC	1.40	
General Asset: SLDC	33.63	33.63
General Asset: ALDC	10.33	10.33
State specific customization in REMC software and allied additional requirement of hardware through change order		70.8
Total	4536.1678	1,623.94

A brief description of individual project/scheme planned during FY 2024-25 along with the purpose/objective and intended benefit from the scheme has been covered in the chapter on Capex and Capitalization Plan. The petitioner humbly requests the Hon'ble Commission to approve the Capital Expenditure and Capitalization for FY 2024-25.

Capitalization of non-DPR schemes over the Control Period

As regards capitalization towards non-DPR schemes, the Hon'ble Commission has specified the following in its earlier order, which are given below:

"5.5.10 Thus, the capitalization proposed by MSLDC for Non-DPR schemes would normally be considered only after DPRs are submitted with the required details. However, in line with the approach considered in the past MTR order in Case No. 171 of 2017 of the Commission, and as stated earlier in Paras 3.7.8 and 4.5.7 of this Order, considering that these schemes relate to the daily operations of MSLDC, and that the operations of MSLDC are not adversely affected and it is equipped to undertake necessary capital expenditure to meet the operational and technological challenges, the Commission is inclined to consider the request of MSLDC to approve the Capitalization proposed towards non-DPR is hence and not apply the criteria

0

of a 20% ceiling of approved capitalization of DPR schemes.

5.5.11 MSLDC has also proposed capitalization of schemes for DPR's which are yet to be approved by the Commission. As per the Regulation 24.6, the Commission may approve additional amount of 20% of the capital expenditure approved for that year.

24.6 The Commission may approve, for each year of the Control Period, an additional amount equivalent to 20% of the total capital expenditure approved for that year, towards planned or unplanned capital expenditure that is yet to be approved by the Commission.

5.5.12 However, the Commission is wary of the fact that if approved capital expenditure is 'Zero' for any particular year, the additional amount to be approved is also 'Zero' including for non-DPR schemes. To avoid such a scenario, MSLDC should have submitted the proposed DPR's for in-principle approval of the Commission well in time. However, as mentioned above, it is also necessary to incur capital expenditure for effective running of the operations and accordingly the Commission has to strike the balance between approval of capital expenditure, capex proposals to be submitted and its impact on tariff.

MSLDC would like to again humbly submit here that a significant portion of schemes capitalized within MSLDC are of low value schemes (less than Rs. 100 Lakhs), and includes capitalization of items procured on a continuous basis. Thus, considering the varied and intermittent nature of asset addition of lower value, it is difficult to prepare a DPR for the same. In view of the above, and based on the details of various projects submitted above, the Petitioner humbly requests the Hon'ble Commission to allow the capitalization proposed towards non-DPR scheme as claimed in the present Petition and without applying the criteria of 20% in case of MSLDC, as per approval given in Case No 233 of 2022.

MSLDC humbly requests the Honble Commission to approve the revised Capital Expenditure and Capitalization submitted above for FY 2024-25. Solvected by the Commission and based on the situation of LDCD fund, funds for Eapitalization for LDCD is proposed to be used from LDCD.



fund only.

4.5. Depreciation

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019, under Regulation 28, specifies as under regarding depreciation:

- "28.1 The Generating Company, Licensee, and MSLDC shall be permitted to recover depreciation on the value of fixed assets used in their respective Businesses, computed in the following manner:
- (a) The approved original cost of the fixed assets shall be the value base for calculation of depreciation:

Provided that the depreciation shall be allowed on the entire capitalized amount of the new assets after reducing the approved original cost of the retired or replaced or de-capitalized assets.

(b) Depreciation shall be computed annually based on the straight line method at the rates specified in the Annexure I to these Regulations:

Provided that the Generating Company or Licensee or MSLDC shall ensure that once the individual asset is depreciated to the extent of seventy percent, remaining depreciable value as on 31 March of the year closing shall be spread over the balance Useful Life of the asset including the Extended Life, as provided in this Regulation:

Provided further that the Generating Company or Licensee or SLDC shall submit all such details or documentary evidence as may be required, to substantiate the above claims.

(c) The salvage value of the asset shall be considered at 10 per cent of the allowable capital cost and depreciation shall be allowed upto a maximum of ninety per cent of the allowable capital cost of the asset:

Provided that the Generating Company or Licensee or SLDC shall submit, certification from the Statutory Auditor for the capping of depreciation at ninety per cent of the allowable capital cost of the asset:

Provided further that the salvage value of Information Technology equipment and computer software shall be considered at 0 per cent of the allowable capital cost.

28.2 Land other than the land held under lease and the land for reservoir in case of hydel Generating Station shall not be a perfectable assertant as cost shall be excluded from the

Page 66 of 193

MSLITE MYT Porting for FY 2025-26 to FY 2029-30

capital cost while computing depreciable value of the assets.

In case of existing assets, the balance depreciable value as on April 1, 2020, shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to March 31, 2020, from the gross depreciable value of the assets:

Provided that depreciation shall be chargeable from the first year of commercial operation.

28.4 In case of projected commercial operation of the assets for part of the year, depreciation shall be computed based on the average of opening and closing value of assets.

28.5 Depreciation shall be re-computed for assets capitalized at the time of Truing-up along with the Mid-term Review or at the end of the Control Period, based on documentary evidence of assets capitalized by the Petitioner, subject to the prudence check of the Commission, such that the depreciation is allowed proportionately from the date of capitalization."

MSLDC submits that the capitalization during FY 2024-25 is assumed to be funded from LDCD fund; hence, the depreciation of asset capitalized during FY 2024-25 has not been considered under depreciation. Depreciation for FY 2024-25 has been projected considering the gross fixed asset amount on asset addition up to FY 2017-18, which are from non-LDCD fund, as already explained in the previous section. As there is no addition of asset from non-LDCD fund and depreciation is already allowed by the Hon'ble Commission for FY 2024-25 on the approved GFA, the approved amount of depreciation is considered by the Petitioner for FY 2024-25 under provisional true-up. The projected Depreciation for FY 2024-25 is Rs. 114.13 Lakh as against the Commission's approved

depreciation of Rs. 114.13 Lakh, as given in Order in Case No. 233 of 2022. The depreciation for FY 2024-25 is projected below:

Table 22: Depreciation for FY 2024-25

(Rs. Lakh)

	FY 2024-25		
Particulars	Approved in (Case No 233 of 2022)	Revised Estimate	Provisional True up requirement
Depreciation	114.13	114.13	0

Accordingly, MSLDC humbly requests to approve the projected depreciation for FY 2024-25. The details of the depreciation claimed for FY 2024-25 have been provided in Form F4 of Petition Formats.

4.6. Interest & Financial Charges

The Maharashtra Electricity Regulatory Commission (Multi-Year Tariff) Regulations, 2019 under

Page 67 of 193

MSLIDE MYT Parities 2 2025-25 to FY 2029-30

Regulation 30, specifies the method of calculation of interest and finance charges, which are given below.

"30.3 The loan repayment during each year of the Control Period from FY 2020-21 to FY 2024-25 shall be deemed to be equal to the depreciation allowed for that year.

30.4 Notwithstanding any moratorium period availed, the repayment of loan shall be considered from the first year of commercial operation of the Scheme and shall be equal to the annual depreciation allowed.

30.5 The rate of interest shall be the weighted average rate of interest computed on the basis of the actual long-term loan portfolio at the beginning of each year:

Provided that at the time of Truing-up, the weighted average rate of interest computed on the basis of the actual long-term loan portfolio during the concerned year shall be considered as the rate of interest:

Provided further that if there is no actual long-term loan for a particular year but normative long-term loan is still outstanding, the last available weighted average rate of interest for actual long-term loan shall be considered:

Provided also that if the Generating Company or the Licensee or the MSLDC, as the case may be, does not have actual long-term loan even in the past, the weighted average rate of interest of its other Businesses regulated by the Commission shall be considered:

Provided also that if the Generating Company or the Licensee or the MSLDC, as the case may be, does not have actual long-term loan, and its other Businesses regulated by the Commission also do not have actual long-term loan even in the past, then the weighted average rate of interest of the entity as a whole shall be considered:

Provided also that if the entity as a whole does not have actual long-term loan, then the Base Rate at the beginning of the respective year shall be considered as the rate of interest for the purpose of allowing the interest on the normative loan.

30.6 The interest on loan shall be computed on the normative average loan of the year by applying the weighted average rate of interest:

Provided that at the time of Truing-up, the normality average foun of the concerned year shall be considered on the basis of the actual asset conitalization approved by the Commission for the year.

30.7 The above interest computation shall exclude interest on loan amount, normative or



otherwise, to the extent of capital cost funded by Consumer Contribution, Deposit Works, Grants or Capital Subsidy."

The debt requirement for the proposed capital expenditure in the FY 2024-25 is envisaged to be funded by normative loans only, and no additional loan allocation from MSETCL has been considered for FY 2024-25. However, as mentioned earlier, the capitalization is funded through LDCD fund; hence, no new additional normative loan has been considered. For the purpose of computation of interest expense for FY 2024-25, interest expense pertaining to normative loan for capitalization up to FY 2017-18 has been considered (i.e. related to non-LDCD fund-based asset). MSLDC has considered the weighted average rate of interest as applicable to MSETCL. In accordance provisions of the MERC MYT Regulations, 2019, the repayment of loan has been considered equivalent to depreciation claimed during the year, as derived above. The details are given in format F 5. The interest on Loan for FY 2024-25 is shown in Table as below:

Table 23: Interest on Loan for FY 2024-25

(Rs. Lakh)

	FY 20	24-25		
Particulars	Approved in (Case No 233 of 2022)	Revised Estimate	Provisional True up requirement	
Interest on Loan	39.54	41.44	1.90	

4.7. Return on Equity

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019 under Regulation 29 specifies the following for RoE:

"29 Return on Equity

29.1 Return on Equity for the Generating Company, Transmission Licensee, Distribution Wires Business and MSLDC shall be allowed on the equity capital determined in accordance with Regulation 27 for the assets put to use, at the rate of up to 15.5 per cent per annum in Indian Rupee terms,

Provided that Return on Equity shall be allowed in two parts viz. Base Return on Equity, and Additional Return on Equity linked to actual performance;

Provided further that Additional Return on Equity shall be allowed at time of traing up for respective year based on Aud Derformance, after prudence check of the Commission:

Page 69 of 193

Distribute (b.5)



29.2 Base Return on Equity for the Generaling Company, Transmission Licensee, Distribution Wires Business and MSLDC shall be allowed on the equity capital determined in accordance with Regulation 27 for the assets put to use, at the rate of 14 per cent per annum in Indian Rupee terms, and for the Retail Supply Business, Return on Equity shall be allowed on the amount of equity capital determined in accordance with Regulation 27 at the rate of 15.5 per cent per annum in Indian Rupee terms:

Provided that in case the Generation Company or Licensee or MSLDC claims Return on Equity at a rate lower than the normative rate specified above for any particular year, then such claim for lower Return on Equity shall be unconditional:

Provided further that such claim for lower Return on Equity shall be allowed subject to the condition that the reduction in Return on Equity shall be foregone permanently for that year and shall not be allowed to be recouped at the time of Mid-Term Review or true-up as applicable.

- 29.3 The Base Return on Equity shall be computed in the following manner:
- (a) Return at the allowable rate as per this Regulation, applied on the amount of equity capital at the commencement of the Year; plus
- (b) Return at the allowable rate as per this Regulation, applied on 50 per cent of the equity capital portion of the allowable capital cast, for the investments put to use in Generation Business or Transmission Business or Distribution Business or MSLDC, for such Year: "

The Petitioner has worked out the Return on Equity (RoE) for FY 2024-25 in accordance with the aforementioned Regulations. However, as mentioned above, the capitalization for FY 2024-25 is assumed to be funded from LDCD fund and hence, no new equity would be added during FY 2024-25. The equity, as considered by Hon'ble Commission based on approved GFA (funded through non-LDCD fund only), is considered for FY 2024-25. So, RoE projected for FY 2024-25 is based on the opening equity for FY 2024-25 (as approved in Case No 233 of 2022) with no new equity added during FY 2024-25. MSLDC has considered RoE at rate of 14% on the opening equity. The Petitioner requests to allow the claim for additional RoE @ 1.5% during true-up based on actual data for kind consideration of Hon'ble Commission. The projected base RoE for FY 2024-25 is shown in the table below:

Sr. Particulars FY 2024-25

Sr. Particulars FY 2024-25

Page 70 of 193

No.		Approved in (Case No 233 of 2022)	Estimated	Provisional True-Up requirement
1	Return on Equity Computation			
2	Regulatory equity at the beginning of the year	1267.45	1267,45	0
3	Equity portion of capitalization during the year	0	0	
4	Reduction of equity capital on account of retirement/replacement of Assets	0	0	
	Regulatory Equity at the end of the year	1267.45	1267.45	
5	Return on Regulatory Equity at the beginning of the year	177.44	177.44	0
6	Return on Regulatory Equity addition during the year	0	0.00	
	Total Return on Equity	177.44	177.44	0

MSLDC humbly requests the Hon'ble Commission to approve above Return on Equity as projected for FY 2024-25. The details of the Return on Equity for FY 2024-25 have been provided in Form F 9 of Petition Formats.

4.8. Income Tax

In context of MSLDC's submissions regarding Income Tax in the previous chapters, MSLDC has not projected any Income Tax for the FY 2024-25.

4.9. Non-Tariff Income

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019, under Regulation 98, specifies as under:

~98 Non-Tariff Income

98.1 The amount of Non-Tariff Income relating to the MSLDC as approved by the Commission shall be deducted from the Aggregate Revenue Requirement in determining the Fees and Charges of the MSLDC:

Provided that the MSLDC shaft submit full details of its forecast of Non-Tariff Income to the

Commission in such form as may be stipulated by the Commission.

- 98.2 The Non-Tariff Income shall include:
- a) Income from sale of scrap;
- b) Income from investments;
- c) Interest income on advances to suppliers/contractors,
- d) Income from rental from staff quarters;
- e) Income from sale of tender documents;
- f) Any other Non-Tariff Income:

Provided that the interest earned from investments made out of Return on Equity of the MSLDC shall not be included in Non-Turiff Income."

The non-tariff income, except interest from LDCD fund, for FY 2024-25 is proposed to be considered as average of actual non-tariff income, excluding interest income from LDCD fund, of FY 2022-23 and FY 2023-24. As discussed in earlier chapter, interest income from LDCD fund, on average LDCD fund available during FY 2024-25, is also considered under non-tariff income and shown separately in form F10. The details of interest income from LDCD fund is given in F17:LDC Development Fund (Projected). The details of the Non-Tariff Income for FY 2024-25 have been provided in Form F10 of Petition Formats.

Table 25: Non-Tariff Income for FY 2024-25

(Rs. Lakh)

	FY 2024-25		
Particulars	Approved in (Case No 233 of 2022)	Estimated	Provisional True- Up Requirement
Interest on LDCD Fund	126.90	558.94	
Other Non-Tariff Income	27.56	87.01	
Total Non-Tariff Income	154.46	645.73	491.27

MSLDC humbly requests the Hon'ble Commission to approve above expenses towards Non-Tariff Income:

4.10. Income from Open Access Charges

MSLDC has estimated income from Open Access Charges and Income from rescheduling charges of Rs 581.98 Lakhs and Rs. 1154.93 Lakhs for FV12024025, respectively, as per income of open access

20/12/25

Page 72 of 193

MSELEC MYT Petition for FY 2025-26 to FY 2029-30

charges and rescheduling charges actually available during FY 2023-24.

Table 26: Income from Open Access charges for FY 2024-25

(Rs. Lakh)

	FY 2024-25		
Particulars	Approved in (Case No 233 of 2022)	Estimated	Prov. True- Up Requirement
Income from open access charges	1252.03	581,98 (OA charges) plus 1154.93 (Rescheduling charges) = 1736.91	484.88

4.11. Income from Monthly Operating Charges

MSLDC has estimated income from Monthly Operating Charges of Rs. 3,301.79 Lakh for FY 2024-25 as approved by the Hon'ble Commission in Case No. 233 of 2022.

Table 27: Income from Monthly Operating Charges for FY 2024-25

(Rs. Lakh)

	FY 2024-25		
Particulars	Approved in (Case No 233 of 2022)	Estimated	Prov. True-Up Requirement
Income from Monthly Operating Charges	3301.79	3102.42	-199.37

4.12. Summary of provisional True-Up for FY 2024-25

Based on the above discussion, the head-wise projected expenses for FY 2024-25 for provisional true up are summarized in Table below:

Table 28 : Summary of Provisional True-up of FY 2024-25

(Rs Inkh)

		FY 2024-25			
Sr. No.	Postariatore	Approved in (Case No 233 of 2022)	April to March (Estimated)	Provisional Truing Up Requirement	
1	Operation & Maintenance Expenses	3591.59	4206.25	614.66	
2	Depreciation Expenses	114.13	114,13	0.00	
3	Interest on Loan Capital	39.54	41.44	0.00	
4	Interest on Working Clipital	67.29	79.76	12.47	
5	RLDC Fees and WRPC Charges	718.30	866.04	147.74	

Page 73 of 19

MSLDC MYT Petition for FY 2025-26 to FY 2029-30



		FY 2024-25		
Sr. No.	Particulars	Approved in (Case No 233 of 2022)	April to March (Estimated)	Provisional Truing Up Requirement
6	Reactive Energy Charges paid to Generators/TSUs			0.00
7	Income Tax			0.00
8	Total Revenue Expenditure	4530.84	5307.62	774.87
9	Return on Equity Capital	177.44	177.44	0.00
10	Total Expenditure for MSLDC	4708.28	5485.07	774.87
11	Less: Non-Tariff Income	154.46	645,73	491.49
12	Less: Income from Open Access Charges	1252.03	581.98	-670.05
13	Less: Income from Rescheduling Charges		1154.93	1154.93
14	Annual Fixed Charges for MSLDC	3301.79	3102.42	-199.37
15	Revenue approved/actual	3301.79	3301.79	0
16	Stand-alone Revenue gap/(surplus)	0	-199.37	-199.37

The above surplus is provisional amount and the same will be finalized after true-up only. Hence, the surplus amount is not considered further in any calculation for the new control period by the Petitioner.



5. Operational performance of SLDC during FY 2022-23 & FY 2023-

24

MSLDC has been undertaking system operation for the past five decades in the State of Maharashtra. Over time, MSLDC has proven its technical competency in managing the system operation in the State and have strived to achieve performance excellence through, technology adoption, man-power development along with putting in place support system and procedures for its effective operation. SLDC is continuously working towards effectively coping up with the fast changing operational dynamics of the power system and in overcoming upcoming challenges.

While the subsequent chapters of this Petition presents an overview of the financial performance of the MSLDC, under this section, MSLDC would like to specifically present its operational performance and its efficacy of systems operation capabilities of MSLDC in the recent past. The table below compares the operational performance of the MSLDC during the entire period of FY 2022-23 to FY 2023-24 for kind information of the Hon'ble Commission.

Performance Related information:

The table below compares the operational performance of the MSLDC during the entire period of FY 2022-23 to FY 2023-24 for kind information of the Hon'ble Commission.

Table 29: Operational performance of the MSLDC

	Key result Area and Corresponding Key Performance Indicator	Achievement during FY2022-23	Achievement during FY 2023-24
1	EFFICIENT G	RID OPERATION AND CONTRO	DL
Α	Demand & energy catered		Catered Demand – 28969 MW Catered Demand – 28969 MW Energy Catered - 206682 MUs



Sr. No.	Key result Area and Corresponding Key Performance Indicator	Achievement during FY2022-23	Achievement during FY 2023-24
В	To follow DSM discipline and maintain deviation in permissible limit (250 MW).	For the Period For the period of 01 April-2022 to 04 Dec-2022:- i. Less than -250 MW: 17.83% ii250 MW to + 250 MW:67.98 % (Allowed as per DSM regulation) iii.Greater than 250 MW 14.20 % For the period of 05 Dec-2022 to 31 Mar-2023: iv. Less than -200 MW: 17.34 % v200 MW to + 200 MW: 62.38 % (Allowed as per DSM regulation) vi.Greater than 200 MW: 20.28%	i. Less than -200 MW: 25.04% ii200 MW to + 200 MW:56.45 % (Allowed as per DSM regulation) iii. Greater than 200 MW: 18.51%
С	Improvement in Grid Parameters (f)	Frequency Profile: - Below 49.9 Hz - 11.18 % Between 49.9 - 50.05 Hz - 70.12 % Above 50.05 Hz - 18.70 %	Frequency Profile: - Below 49.9 Hz - 7.42 % Between 49.9 - 50.05 Hz - 73.91 % Above 50.05 Hz - 18.69 %
D	Scheduling of power as per contracts.	Scheduling of power in Maharashtra as per contracts is carried out as per DSM regulation. The DSM software is function w.e.f 11 th October 2021.	Scheduling of power in Maharashtra as per contracts is carried out as per DSM regulation. The DSM software is function w.e.f 11th October 2021.
E	Development of Scheduling Software as per new DSM Mechanism.	Scheduling of power in Maharashtra as per contracts is carried out as per DSM regulation. The DSM software is function w.e.f 1 October 202	Scheduling of power in Maharashtra as per contracts is carried out as per DSM regulation. The DSM software is function w.e.f 11th October 2021

3/st.Thane (M.S.) Repn.Re.8034/1)



Sr. No.	Key result Area and Corresponding Key Performance Indicator	Achievement during FY2022-23	Achievement during FY 2023-24
		2) For the implementation of MERC Forecasting & scheduling deviation settlement Mechanism for RE generators Regulation – 2018, SLDC has developed software through M/s Siemens. The commercial operation of MERC RE DSM framework is commenced in the state of Maharashtra from 06th January 2020.	2) For the implementation of MERC Forecasting & scheduling deviation settlement Mechanism for RE generators Regulation – 2018, SLDC has developed software through M/s Siemens. The commercial operation of MERC RE DSM framework is commenced in the state of Maharashtra from 06th January 2020.
F	Daily Reporting & Quarterly feedback report to STU for Transmission constraints, congestion, GCC etc.	Daily reporting is done to higher authorities / offices. Quarterly feedback report to STU is submitted in FY 2022-23. GCC meetings conducted in FY 2022-23; 3 Nos. OCC meetings conducted in FY 2022-23; 2 Nos.	Daily reporting is done to higher authorities / offices. Quarterly feedback report to STU is submitted in FY 2023-24. GCC meetings conducted in FY 2023-24; 2 Nos. OCC meetings conducted in FY 2023-24; 3 Nos. State grid alert report issued to stakeholders during 2023-24; 10 Nos.
G	Coordination with WRLDC/ GENCO/ DISCOM/ TSU/OA	Coordinated with WRLDC/ GENCO/DISCOM/TSU/OA as & when required through WRPC- TCC, OCC, PCM, CCM meetings, State – MSPC, GCC, OCC, PCC, MCCC, MTC meetings, T	Coordinated with WRLDC/ GENCO/ DISCOM/ TSU/OA as & when required through WRPC-TCC, OCC, PCM, CCM meetings, State – MSPC, GCC, OCC, PCC, MCCC, MTC meetings.

Page 77 of 193

MSLISC MYF Petition for FY 2025-26 to FY 2029-30

	Key result Area and Corresponding Key Performance Indicator	Achievement during FY 2022-23	Achievement during FY 2023-24
A	400 kV and above system elements outaes in coordination with WRLDC/WRPC.	Total 2167 No. of 400 kv and above, system elements outages provided	Total 2244 No. of 400 kv and above, system elements outages provided
В	220 KV level system elements outages.	Total 5880 No. of 220kV level system elements outages provided,	Total 6225 No. of 220 kV level system elements outages provided.

Sr. No.	Key result Area and Corresponding Key Performance Indicator	Achievement during FY 2022-23	Achievement during FY 2023-24
Α	Timely issuance of FBSM weekly bills.	62 Nos. FBSM weekly bills issued (provisional)	103 Nos. FBSM weekly bills issued (provisional)
В	Computation of Transmission Loss for the intra- state system.	Computation of Transmission Loss for the intra-state system is carried out on monthly basis. For Year 2022-23 as below Energy Input (Mus) = 182132.977 Energy Output (Mus) = 176198.326 Provisional Tr. Loss = 3,26%	Computation of Transmission Loss for the intra-state system is carried out on monthly basis. For Year 2023-24 as below Energy Input (Mus) = 198321.191 Energy Output (Mus) = 191831.337 Provisional Tr. Loss = 3.27%
С	Development of comprehensive software for FBSM	NAOTARA OTARA	Administrative approval for the cost estimate for developing of new software for FBSM received.
D	Development of new web based software for STOA.	STOA software has been ully functional & in line to all thirties from 1st November 2020 Applicant can apply or track he status of application &	STOA software has been fully functional & in line to all entities from 1st November 2020. Applicant can apply, or track the status of application & receive approval



Key result Area and Corresponding Key Performance Indicator	Achievement during FY 2022-23	Achievement during FY 2023-24
	receive approval automatically through web portal with intimation via SMS / Email. Around 1912 Nos, short term open access applications have been submitted online by applicant & subsequent approvals are processed within the timelines specified in the regulations.	automatically through web portal with intimation via SMS / Email. Around 3913 Nos. short term open access applications have been submitted online by applicant & subsequent approvals are processed within the timelines specified in the regulations.

Upon analysing the various parameters/performance indicators in the above table, one can observe that year-on-year, SLDC is able to improve various system operational parameters through its operational effectiveness, thereby benefitting the State of Maharashtra and its Power Utilities at large. The following table shows how the commercial burden on the State has reduced over the past years w.r.t its unscheduled interchange (UI) transactions with respect to the regional/national grid.

Tuble 30: ADMC for FY 2022-23 to FY 2023-24

(Rs. Lakh)

FY 2022-23	FY 2023-24
3108	4413

Besides the improvement in the system operation effectiveness, SLDC is also poised to meet the upcoming challenges and therefore has planned various schemes, which are either at the planning stage or are under execution.

	Children Children	
Sr. No.	Projects	Status Naghma *
A.	1)80 RTUs data integration for 220 KV sub-stations	Project successfully executed
	2)70 RTUs data integration for	Project successfully executed.

	Nev	Projects Planned/Under execution
Sr. No.	Projects	Status
	220 KV sub-stations	
В	Development of DSM Software	In Maharashtra DSM Mechanism is commercially implemented w.e.f. 11.10.2021. Subsequent development is carried out as per amendment in Regulations from time to time.
Ċ.	(i)Implementation of REMC	Hon'ble MERC notified the (Forecasting, Scheduling & Deviation Settlement for Solar & Wind Generation) Regulations, 2018 on 20.07.2018 and implementation of the REMC (Forecasting and Scheduling) regulations w.e.f. 06.01.2020.
	(ii)Additional developments/modifications in the existing REMC Forecasting & Scheduling software through Change request	Development/modifications is carried out as per the regulatory requirements.
	(i) Development of Alert Messaging Software	On backdrop of partial black out in MMR & Mumbai on 12.10.2020, MSLDC has developed in-house software for broadcasting messages to all stakeholders for intimating alerts on overloaded lines or depletion of network.
D	Development of web based STOA software	STOA software is functional from I st November 2020.





CAPEX and Capitalization Plan for MYT Period FY 2025-26 to FY 2029-30

Background

Managing the grid is becoming increasingly complex considering the large number of players connected to it and the associated transactions involved. The task of a grid operator is growingly challenging owing to the paradigm changes expected in the Indian Grid with large scale integration of Renewable Energy projects to the grid, establishment of ancillary services market, managing large scale grid connected storage solutions, operating and settlement of spinning reserve market etc. A robust metering and communication infrastructure with real-time data transfer capability at all levels of grid is of utmost importance so as to monitor and control the gird in the most efficient manner in these growing challenging situations. Further, with the growing complexities in the grid, a more decentralized approach of controlling and management is expected to be more effective.

In this context, so as to overcome these challenges, MSLDC has planned to implement various schemes during the MYT period FY 2025-26 to FY 2029-30. Considering the actual capitalization achieved in the past period and the progress made so far, there has been some revision in the capitalization proposed during ensuring MYT period. For the MYT period viz FY 2025-26 to FY2029-30, MSLDC proposes the capital expenditure and capitalization considering the past progress and new schemes to be implemented in future.

In addition to the various ongoing DPR and non-DPR schemes, MSLDC envisages capital expenditure and capitalization towards some new schemes. The schemes so planned for the MYT period have been projected as per the requirement of different section of SLDC together with ALDC. While preparing the CAPEX and Capitalization Plan for FY 2025-26 to FY 2029-30, the petitioners have taken cognizance of the following provisions outline under the MERC MYT Tariff Regulations 2024:

117.1 The MSLDC shall submit a detailed capital investment plan considering the provisions of the MERC(Approval of Capital Investment Schemes) Regulations, 2022, financing plan and physical targets for each Year of the Control Period based on the operational requirements prescribed by the Commission and recommendations of various Committees constituted for looking into matters related to strengthening and ring fencing of the State Load Despatch Centres by the Ministry of Power, Government and fillings and such other statutory authorities.

Page 81 of 193

MSLDC MYT Petition for FY 2025-26 to FY 2029-30

to the Commission for approval, as a part of the Multi-Year Aggregate Revenue Requirement for the entire Control Period

117.2 The Capital Investment Plan shall be a least cost plan for undertaking investments and shall cover all capital expenditure projects of a value exceeding the limits prescribed by the Commission from time to time under the MERC (Approval of Capital lavestment Schemes) Regulations, 2022."

While proposing the capital expenditure plan for the ensuring years, MSLDC has taken due care to propose DPR schemes and non-DPR schemes. DPR for few new schemes proposed during the MYT period are under preparation and shall be submitted in due course for kind consideration and necessary approval of Hon'ble Commission. Further, there are certain schemes whose estimated value is less than the threshold value of Rs. 100 Lakh, as specified by the Hon'ble Commission, which has been shown as non-DPR schemes. For considering the capitalization of non-DPR schemes the provision given in MYT Regulations, 2024 is given below.

"24.6 For the purpose of approval of projected capital expenditure plan and capitalisation plan for Control Period, the Commission shall take into consideration historical trend of capitalisation of approved capital schemes (DPR and Non-DPR), projected growth in the distribution network, consumer base & demand, expected growth in generation capacity addition and transmission network augmentation requirement, ongoing/pending capital schemes, status update of in-principal approved schemes, status of tie-up of funds for various capex schemes proposed by generation company, transmission licensee, distribution licensee, STU, SLDC, as the case may be".

"24.9 The cumulative amount of capitalization against non-DPR schemes for any Year shall not exceed 30% or such other limit as may be stipulated by the Commission through an Order, of the cumulative amount of capitalization approved against DPR schemes for that Year:

Provided that, in case MSLDC and STU the cumulative amount of capitalisation—against non-DPR schemes for any Year shall not exceed Average capital expenditure of past three years actually incurred or 30% of approved capital expenditure of previous years, whichever is lower, in case there is no approved capital expenditure for particular year."

Provided further that the Commission may allow capitalisation definite non-DPR schemes for any Year in excess of 30% or such other limit as may have been stipulated by the Commission

a

through Order, on a request made by the Generating Company, ESSD or Licensee or MSLDC or STU."

In order to meet the operational and technological challenges, MSLDC proposes the capital expenditure and capitalization plan of MSLDC from FY 2025-26 to FY 2029-30 as per following details.

Projected Capex and Capitalization for FY 2025-26 to FY 2029-30

Table 31: Projected Capitalization for FY 2025-26

(Rs. Lakh)

			(Rs. Lal
Project Code	Project Title	Capital Expenditure	Capitalisation
FY 2025-26			
a) DPR Schemes			
(i) In-principle approved by MERC			
104	Renovation and Modernization of existing SCADA System at SLDC Kalwa and ALDC Ambazari	2600	0
	DSM	75	75
	Customizations in Short term Open access Software to accomodate regulatory changes, Orders of MoP, etc.	600	600
(ii) Yet to receive in- principle MERC approval			
	Development of new FBSM software	116	
Ke :	Development of Analytical Tools for WAMS system.	300	300
	Development of New QCA REDSM software based on MERC(F&S) First ammendment notification	200	200

Page 83 of 193

MSLDC MYT Petnion for FY 2025-26 pk FY 2029-30

Project Code	Project Title	Capital Expenditure	Capitalisation
	Customizations in REMC Scheduling & Accounting Software to accommodate regulatory changes, Orders of MoP, etc	500	250
	Customizations in the State DSM Software to accommodate regulatory changes, Orders of MoP, etc	600	600
	 a) development of comprehensive cloudbase platform for daily system report-(DSR),outage management, first time charging (FTC) - 5 cr (4+0.25 for 4 yrs) 	400	400
	b)Development of integretad data handling platform analytical software, analytics based on SCADA,Schedulc, Merter and PMU data oct having capability of integration with SCADA DSM MDM system ETC	500	500
	Development of Demand estimation software	500	250
	Establishment of CSOC (Cyber Security Operation Centre) at SLDC	1500	1500
	Implementation of advanced Cyber Security Solution for IT and OT Inftrastructure of SLDC	1000	1000
	Additional: Construction of compound wall from main entrance gate (NH-6) to colony gate L=326RMT X 2=652RMT (Note submitted vide no SE/ALDC/NGP/Tech/416 Dt 05.10.2023)	100	100
	33 kV Express feeder with OPGW cable for redundant power supply and data connectivity from 220kV Ambazari s/s	100	100
	New Residential tower at MSLDC, Airoli	0	0
16	Consultancy for verification of existing setup for compliance of data centre norms	100 2	TORC &
	Development of data handling platform analytical software	500	500 3 5 Z



Project Code	Project Title	Capital Expenditure	Capitalisation
	Procurement of optimization tool software licence for SCED and SCUC in the State along with resource adequacy tool	300	300
	Procurement of optimization tool software licence for SCED and SCUC in the State (GAMS)	120	120
	Rate Contract for Services towards Integration of 260 SAS/DCs/RTUs of any make over IEC 104 protocol into SCADA System at MSLDC Kalwa and ALDC Ambazari	230	230
b) Non-DPR Schemes			
	Incidental SCADA expenses	25	25
***	Incidental REMC & URTDSM expenses	10	10
	restructuring and beautification of Fountain area	25	25
	Life extension of Panchganga and Sabarmati building.	50	50
	Compliances of Fire & Safety Audit	25	25
	Customizations in GNA invoice software to accommodate regulatory changes, Orders of MoP, etc.	50	50
	IT Infrasctructure Development (Firewall, Router, Switches, Server, Desktop/Laptop/Printer, Antivirus, Wifi)	95	95
	ALDC building premises development Civil	10	10
	Procurement of AC	15	15
	Purchase of office equipemennt / furniture ALDC	10	10
	48V 1000 Ah battery set along with charger and DCDV	25	25
	Incendental SCADA ALDC	10	10
	IT ALDC	20	20
	Hardware for reserve and ancillary services software (GAMS software)	25	
Total		10736	7495.00

Page 85 of 193

MS(45)C Petition for FY 2025-26 to FY 2029-30

Table 32: Projected Capitalization for FY 2026-27

		Control	(Rs. Lak
Project Code	Project Title	Capital Expenditure	Capitalisation
FY 2026-27			
a) DPR Schemes			
(i) In-principle approved by MERC			
	DSM	110	110
	RE-DSM	250	250
	New Residential tower at MSLDC, Airoli	800	800
DSM	DSM (Development of S/W for S&D , DS, SEA, DSM & Cloud)	49.00	49.00
	Renovation and Modernization of existing SCADA System at SLDC Kalwa and ALDC Ambazari		2600.00
(ii) Yet to receive in- principle MERC approval			
	Unified Communication Infrastructure (Communication Hub) interface at SCADA for Data acquisation of SCADA/REMC/URTDSM	500	500
	Development of Analytical Tools for WAMS system.	300	300
	Upgradation of REMC SCADA entire system	500	500
	Development of New QCA REDSM software based on MERC(F&S) First ammendment notification.	150	400
	Customizations in REMC Scheduling & Accounting Software to accommodate regulatory changes, Orders of MoP, etc.	100	100
	Customizations in the State DSM Software to accommodate regulatory changes, Orders of MoP, etc	100	0
N	Development of Demand estimation software	500	750
	Development of PSS-wise RE Forecasting Software for MSLDC.	600 RY	608
	Implementation of advanced Cyber Security Solution for IT and OT Inftrastructure of SLDC	2000) At 181111111	200

Page 86 of 193

MSLDC MYT Pention for FY 2025-29 16 FY

Project Code	Project Title	Capital Expenditure	Capitalisation
30	Construction of new Data Centre with DC-DR Configuration	3000	3000
***	a) development of comprehensive cloudbase platform for daily system report-(DSR),outage management, first time charging (FTC) - 5 cr (4+0.25 for 4 yrs)	25	25
	b)Development of integretad data handling platform analytical software, analytics based on SCADA,Schedule, Merter and PMU data ect having capability of integration with SCADA DSM MDM system ETC	500	500
	Development of data handling platform analytical software	500	500
	Procurement of optimization tool software licence for SCED and SCUC in the State along with resource adequacy tool	50	50
	Customizations in Short term Open access Software to accomodate regulatory changes, Orders of MoP, etc.	100	100
	Replacement of UPS along with 300 Ah battery ALDC	100	100
	Rate Contract for Services towards Integration of 260 SAS/DCs/RTUs of any make over IEC 104 protocol into SCADA System at MSLDC Kalwa and ALDC Ambazari	383	383
b) Non-DPR Schemes			
	Incidental SCADA expenses	25	25
	Incidental REMC & URTDSM expenses	10	10
	Compliances of Fire & Safety Audit	25	25
	Repalcement of 2 Nos. of 100KVA UPS.	50	50
	Purchase of Office Furniture	0	.0
	Change in FBSM software as per APTEL / MERC order	SO BV	50
	Customizations in GNA invoice software to accommodate regulatory changes, Orders of MoP, etc.	50 Waghmare	52

Page 87 of 193

MSLDC MYT Proton for FY 2025-25 to FY 2029-30



Project Code	Project Title	Capital Expenditure	Capitalisation
	IT Infrasctructure Development (Firewall, Router, Switches, Server, Desktop/Laptop/Printer, Antivirus, Wifi)	80	80
22	Purchase of Office Equipments	0	0
	Change Request for modification in FBSM software	50	50
440	Procurement of optimization tool software licence for SCED and SCUC in the State (GAMS)	20	0
	ALDC building premises development Civil	10	10
	Incendental SCADA ALDC	10	10
	Purchase of office equipement / fumiture ALDC	20	20
	IT ALDC	20	20
Total		9537	12517.00

Table 33: Projected Capitalization for FY 2027-28

(Rs. Lakh)

Project Code	Project Title	Capital Expenditure	Capitalisation
FY 2027-28			
DPR Schemes			
	Maharashtra State Unified Synchrophasor Project (MSETCL WAMS Project)	2500	2500
	Development of Analytical Tools for WAMS system.	300	300
	Upgradation of REMC SCADA entire system (Development of REMC SCADA, Scheduling & Forecasting Software after completion of 7 years AMC period (Software put in use in year 2020))	600	600
	Customizations in REMC Scheduling & Accounting Software to accommodate regulatory changes, Orders of MoP, etc.	100 P 1	100

Page 88 of 193

MSLDCMart Petition for FY 2023-20 MY 2029-30

Project Code	Project Title	Capital Expenditure	Capitalisation
	Customizations in the State DSM Software to accomodate regulatory changes, Orders of MoP, etc	100	200
	Change Request for modification in DSM software	100	100
***	New Residential tower at MSLDC, Airoli	800	0
	Construction of new Data Centre with DC-DR Configuration	3000	3000
	Development of PSS-wise RE Forecasting Software for MSLDC (change request)	50	50
	a) development of comprehensive cloudbase platform for daily system report-(DSR),outage management, first time charging (FTC) - 5 cr (4+0.25 for 4 yrs)	25	25
	b)Development of integretad data handling platform analytical software, analytics based on SCADA,Schedule, Merter and PMU data eet having capability of integration with SCADA DSM MDM system ETC	100	100
	Unified Communication Infrastructure (Communication Hub) interface at SCADA for Data acquisation of SCADA/REMC/URTDSM	500	500
	Development of New QCA REDSM software based on MERC(F&S) First ammendment notification.	50	0
	Development of data handling platform analytical software	100	100
	Procurement of optimization tool software licence for SCED and SCUC in the State along with resource adequacy tool	50	50
	Customizations in Short term Open access Software to accomodate regulatory changes, Orders of MoP,	100	100
Non DPR Schemes	etc.	(AR)	
Ton DI Kathemes	Incidental SCADA avenues	25 Hagha	1 436
	Incidental SCADA expenses Incidental REMC & URTDSM	47.3	1
	expenses	10%	012

Page 89 of 193

MSLDC MYT Petition for FY 2025-25 to PY 2029-30

Project Code	Project Title	Capital Expenditure	Capitalisation
	Replacement of 440Nos of 400AH 2V VRLA Batteries	80	80
	Customizations in GNA invoice software to accommodate regulatory changes, Orders of MoP, etc.	50	50
	Customizations in Demand estimation software to accommodate regulatory changes, Orders of MoP, etc.	25	25
	IT Infrasciructure Development (Firewall, Router, Switches, Server, Desktop/Laptop/Printer, Antivirus, Wifi)	0	0
	Purchase of Office furniture/ Equipments	25	25
	Compliances of Fire & Safety Audit	.0	0
	Procurement of optimization tool software licence for SCED and SCUC in the State (GAMS)	20	40
	ALDC building premises development Civil	10	10
	Procurement of AC	15	15
	Purchase of office equipement / furniture ALDC	25	25
	Incendental SCADA ALDC	10	10
	IT ALDC	20	20
Total		8790	8060

Table 34: Projected Capitalization for FY 2028-29

(Rs. Lakh)

Project Code	Project Title	Capital Expenditure	Capitalisation
FY 2028-29			
DPR Schemes			
	Upgradation of REMC SCADA entire system	600	0
	Maharashtra State Unified Synchrophasor Project (MSETCL WAMS Project) & Upgradation of URTDSM System	3500 Y Palanhman	2500
	& Accounting Software to accomodate regulatory changes, Orders of MoP. etc.	100	NEW YEAR

Project Code	Project Title	Capital Expenditure	Capitalisation
	Customizations in the State DSM Software to accomodate regulatory changes, Orders of MoP, etc	100	100
	Change Request for modification in DSM software	100	100
	Development of PSS-wise RE Forecasting Software for MSLDC (change request)	50	50
	a) development of comprehensive cloudbase platform for daily system report-(DSR),outage management, first time charging (FTC) - 5 cr (4+0.25 for 4 yrs)	25	.25
	b)Development of integretad data handling platform analytical software, analytics based on SCADA,Schedule, Merter and PMU data ect having capability of integration with SCADA DSM MDM system ETC	100	100
	New Residential tower at MSLDC, Airoli	870	1670
	Development of New QCA REDSM software based on MERC(F&S) First ammendment notification.	50	100
	Development of data handling platform analytical software	100	100
	Procurement of optimization tool software licence for SCED and SCUC in the State along with resource adequacy tool	50	50
	Customizations in Short term Open access Software to accomodate regulatory changes, Orders of MoP, etc.	100	100
Non DPR Schemes			
	Incidental SCADA expenses	50	50
	Incidental REMC & URTDSM expenses	10	10
	Customizations in GNA invoice software to accomodate regulatory changes, Orders of MoP, etc.	Ÿ	50
	Customizations in Demand estimation software to accomodate regulatory changes, Orders of MoP, etc.	25700	25

Project Code	Project Title	Capital Expenditure	Capitalisation
	IT Infrasctructure Development (Firewall, Router, Switches, Server, Desktop/Laptop/Printer, Antivirus, Wifi)	90	90
	Purchase of Office furniture/ Equipments	25	25
	Procurement of optimization tool software licence for SCED and SCUC in the State (GAMS)	20	20
	ALDC building premises development Civil	10	10
	Purchase of office equipement / furniture ALDC	10	10
	Incendental SCADA ALDC	10	10
	IT ALDC	20	20
Total		6065	5315

Table 35: Projected Capitalization for FY 2029-30

Project Code	Project Title	Capital Expenditure	Capitalisation
FY 2029-30			
DPR Schemes			
444	Upgradation of REMC SCADA entire system	0	600
	Customizations in REMC Scheduling & Accounting Software to accompdate regulatory changes, Orders of MoP, etc.	100	100
	Customizations in the State DSM Software to accomodate regulatory changes, Orders of MoP, etc	100	100
	Maharashtra State Unified Synchrophasor Project (MSETCL WAMS Project) & Upgradation of URTDSM System	1000	2000
	Development of PSS-wise RE Forecasting Software for MSLDC (change request)	50 Aghmare	40
	a) development of comprehensive cloudbase platform for daily system report-(DSR),outage management, first time charging (FTC) - 5 cr (4+0.25 for yrs)	Secured Control of Con	N L



Project Code	Project Title	Capital Expenditure	Capitalisation
	b)Development of integretad data handling platform analytical software, analytics based on SCADA, Schedule, Merter and PMU data ect having capability of integration with SCADA DSM MDM system ETC	100	100
	Development of New QCA REDSM software based on MERC(F&S) First ammendment notification.	150	150
	Change Request for modification in DSM software	100	100
	Development of data handling platform analytical software	100	100
	Procurement of optimization tool software licence for SCED and SCUC in the State along with resource adequacy tool	50	50
	Customizations in Short term Open access Software to accomodate regulatory changes, Orders of MoP, etc.	100	100
Non DPR Schemes			
	Incidental SCADA expenses	50	50
	Incidental REMC & URTDSM expenses	10	10
	Customizations in GNA invoice software to accommodate regulatory changes, Orders of MoP, etc.	50	50
	Customizations in Demand estimation software to accommodate regulatory changes, Orders of MoP, etc.	25	25
	IT Infrasctructure Development (Firewall, Router, Switches, Server, Desktop/Laptop/Printer, Antivirus, Wifi)	80	80
	Purchase of Office Furniture /Equipments	0	0
	Procurement of optimization tool software licence for SCED and SCUC in the State (GAMS)	20	20
	ALDC building premises development Civil	10	10
	Procurement of AC	13	15
	Purchase of office equipement ?	Thomas A	25
	DG set	32,000	32
	Incendental SCADA ALDC	100	10

Project Code	Project Title	Capital Expenditure	Capitalisation
	IT ALDC	20	20
Total		2222	3822

Brief Information on the DPR and Non DPR schemes Planned during MYT Period

 Customizations in REMC Scheduling & Accounting Software to accommodate regulatory changes, Orders of MoP, etc (Scheduling Part):

Estimated Cost of the Scheme cost: Rs. 9.0 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

All Wind and Solar Energy Generators in Maharashtra connected to the Intra-State Transmission System, on or after the date notified by the Commission vide MERC F, S & Deviation settlement for Wind & Solar generation regulation, 2018 and commercially implemented in Maharashtra state on 06-01-2020.

Further, Hon'ble MERC has notified amended MERC F, S and Deviation settlement for solar and wind regulation, 2024 on date 04-07-2024. There are extensive changes in the amended regulation. Some of the major changes are as below:

- Changes in error bands & creation of different bands for Wind & Solar/hybrid plants with different rates
- · Scheduled generation-based settlement
- Trial mode operation for 12 months
- Permitting generators to submit schedules & revisions
- Individual generator-wise meter data uploading facility
- Real time monitoring of AvC
- Scheduling of projects under MSKVY scheme
- Uploading facility of de-pooled accounts

In view of above, new software needs to be developed to cope with the new regulatory changes.

As the no. of generators in the state is very high, there will be large size of login facilities and the data size will also be very large. Also, during or after trial mode operation, changes may be required

in the software as per the observations & experience gained.

 Customizations in the State DSM Software to accommodate regulatory changes, Orders of MoP, etc (Scheduling Part)

Estimated Cost of the Scheme cost: Rs. 10.0 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

DSM software is developed as per MERC Regulations-2019 framework & commercially go-live from 11th Oct-2021. However, after the commencement of Commercial operations certain issues were raised by stakeholders and appraised to Hon. Commission. Accordingly, in its various Orders, Hon. Commission directed SLDC to make the arrangement in the scheduling as well as in the billing treatment with necessary modifications in the DSM software are

- The major changes in hydro treatment through virtual state entity (VSE),
- 2) APML PPA wise mapping in scheduling module,
- 33 kv RE exclusion adoption in DSM software.
- 4) Integration of WRLDC's New WBES software
- 5) Customized reports generation as per SLDC requirements

Accordingly, the required change request Orders are issued to the M/s PWC (developer) for these modifications in the DSM software. Also, there are significant changes in Regulations at centre-level in DSM framework from 2022 onwards. Accordingly, CHRC DSM Regulations have been notified and amended time to time and implemented commercially which requires changes in DSM software to match with central scheduling & Despatch timelines, Power Market timelines etc.

Currently CERC has notified IEGC 2023 and accordingly Hon. MERC has also issued Draft MEGC and hence accordingly necessary changes in scheduling software needs to be incorporated in future as and when required Further, Grid-India has launched a new web-based software at center level as per new Regulations and modified their software for implementation of necessary open access & scheduling activities to make coherent with the power market policies and timelines. In order to incorporate the schedules as per modified Centre regulations, necessary modifications are essential at SLDC for smoothen the scheduling processes at State level. Further As per FOLD initiatives under MY-SCED project, SCED may need to be implemented at intra state level and same principle shall be implemented in existing DSM software. Accordingly required incorporations, change request for modifications are proposed to respective developers and as per

Page 95 of 193

required scope for the further development

MSLDC MYT Perition by FY 2025-26 to FY 2029-30

To incorporate the changes in scheduling software the necessary budgetary provision of Rs. 10 Cr. is estimated for FY 2025-2030

Development of comprehensive cloud based platform for DSR (Daily System Report), Outage Management, FTC (First Time Charging), etc.

Estimated Cost of the Scheme cost: Rs. 5.0 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

As per the clause 40 of MERC, State grid code Regulations, 2020, a daily/weekly/monthly report covering the performance of InSTS shall be prepared by SLDC based on the inputs from the Users and shall be put on MAHASLDC website. These reports contain the various information about Demand & supply scenario, Frequency profile, voltage profile, Generation/Transmission outages/trippings etc.

As per the clause 42.1.3 of MERC, State grid code Regulations, 2020, the objective of outage planning is to optimize the transmission outages of the elements of State grid without adversely affecting the grid operation but considering the Generation outage schedule, outages of user/STU systems and maintaining system security standards.

In view of above, a Standard Operating procedure (SOP) for Outage Planning in the State of Maharashtra has been developed at MSLDC. This outage procedure is developed for the preparation of outage schedule for Generating Units and Transmission elements of the Maharashtra State in coordinated and optimal manner keeping in view the Maharashtra system operating conditions and maintaining Load-Generation balance in the system.

Based on the Standard Operating procedure (SOP) for Outage Planning in the State of Maharashtra, Web based Outage Management System (WBOMS) is required to develop

in order to automate the outage management system which includes web submission of outage proposals, online processing and acknowledgement of status of outage proposal to the applicant. In addition to above, POSOCO vide its Letter dated 26.05.2014 has circulated a 'Procedure for integration of a new network element of a transmission licensee into the grid and issuance of certificate by RLDC for successful trial operation of a transmission element' as per Indian Electricity Code.

In this context and in order to comply with the guidelines of POSOCO, MSLDC too formulated a 'Procedure First Time Charging (FDC) of PHV Elements' for the integration of a new transmission

element in the state of Mahamshtra along with the requisite forms. The procedure has been circulated vide T.O.Letter. No 2533 dtd 27 Nov 2018 to all transmission Licensees for strict observance of the same within the specified time lines.

As the above process is manual and the documents are received on e-mail, sometimes the mails get missed and no tracks for the document receipt are available. Maintaining a flawless record of the above activity is found to be quite cumbersome and also the flow process being manual creates difficulties and delays in granting real time permission for FTC.

In this regard it is to inform that WRLDC has also developed Web software for FTC process & FTC certification for integration of a new transmission element on the regional level. Thus, as part of continued development of technological initiative it is proposed to develop Web based FTC procedure in line with WRLDC procedure at the State level so as to make it compatible for all 220kV, 400kV & above elements.

4) Development of Centralized State Demand forecast (Estimation) services at MSLDC.

Estimated Cost of the Scheme cost: Rs. 10.75 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

The Load Despatch centre is the nerve centre for the operation, planning, monitoring and control of the power system on a Long /Medium/Short term & Real time basis.

In order to manage effective real time grid operations, techno-commercial despatch of generation & optimal utilization of resources; it is necessary to have an availability of accurately forecasted block wise Demand estimation.

In the state of Maharashtra considering the large geographic area, diversity of demand, variation in weather patterns, multiple distribution utilities accurately forecasted demand estimation is truly a challenge. In respect of the ensuing MERC (DSM) Regulations, 2019, to be implemented in the State of Maharashtra, the demand estimation at a central level would act as a check to the individual demand estimation carried out by the Buyers and shall be utilized for operational purposes. Clause No. 2 of Regulation 5 of the IEGC, 2023 (earlier Clause No. 5.3 of the IEGC, 2010) deals with Demand Estimation for Operational Purposes by States. The relevant clauses are reproduced below: Clause No. 2 of Regulation 5 of the IEGC, 2023 for Demand Forecasting.

Quote,

Page 97 of 193

MSLDC MYT Fending by FY 2025-26 to FY 2029-30

- (i) Each distribution licensee within a State shall estimate the demand in its control area including the demand of open access consumers and factoring in captive generating plants, energy efficiency measures, distributed generation, demand response, in different time horizons, namely long-term, medium term and short-term. The demand estimation shall be done using trend method, time series, econometric methods or any state-of-the-art methods and shall include daily load curve (hourly basis) for a typical day of each month.
- (ii) STU or such other agency as may be designated by the State Commission, based on the demand estimates of the distribution licensees of the concerned State as per sub-clause (i) of this clause and in co-ordination with all the distribution licensees, shall estimate, in different time horizons, namely long-term, medium term and shortterm, the demand for the entire State duly considering the diversity of the State.
- f) Clause no 38.1 of the MERC (State Grid Code) Regulations, 2020, circulated by Hon'ble MERC also deals with the demand estimation. The relevant clause is reproduced below:

Quote,

"38.1: The SLDC shall set out the responsibilities for short term (one day to 52 weeks) demand estimation of active as well as reactive power (MW, MVAr and MWh) for operational purpose. It shall also provide procedures, formats as well as timelines to be followed for exchange of information between the concerned entities for arriving at these estimates."

Presently, no demand forecast is carried out by MSLDC. The demand forecast provided by each Discoms are consolidated and utilized for real time operational planning. Hence in accordance with the provisions of the IEGC 2023 and MEGC 2020 mentioned above, MSLDC is mandate to estimate Yearly/Monthly/Weekly/Day ahead & Intra Day Demand Forecasting for the state.

In view of the above, a group is formed as per office order CE/MSLDC/Airoli/F.No.377/00700 dt.18th

April 2024 to study the Demand Forecasting activities carried out at WRLDC & NLDC and develop

model for Demand Forecasting for the state.

The members of the group shall:

- Study the methodologies and techniques adopted at WRLDC & RLDC for carrying out Demand Forecasting.
- · Identify the required data and discuss regarding the availability of weather data from the

agencie viz. IMD, IITM (Pune) etc.

Develop model for State, test the same and deployment for the use at MSLDC.
 In order to develop the software/infrastructure for demand forecasting approx. 11.5 Cr from 2025 to 2030 is estimated.

5) Development of PSS-wise RE Forecasting Software for MSLDC

Estimated Cost of the Scheme cost: Rs. 10.75 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

As per regulation No. 5.1 of the MERC F& S Regulations, MSLDC is mandated to carry out Pooling Sub-substation wise forecasting. This forecast may be used by the generators/QCAs on chargeable basis. This forecast is to be utilized for operational purpose.

As on date, MSLDC is using forecasting services from external vendors. Also, existing system is having inbuilt module of forecasting which uses weather forecast provided by external agency, real time power generation data received from PSS and generator power forecast. The existing contract is valid till December 2025.

Further, CEA has directed to collect real time weather parameters from RE plants and share the same to NCMRWF. Further, it has been requested to avail weather forecast provided from NCMRWF. Hence, it is proposed to develop RE Forecasting software which can collect real time weather parameters & power data from RE plants, share the same to NCMRWF and avail weather forecast. Based on the weather forecast and real time generation, this software will provide PS-wise power forecast, which will be used for real time operation and will be made available to generators/QCAs on chargeable basis.

Customizations in GNA invoice software to accommodate regulatory changes, Orders of MERC/CERC, etc. (under DSM Software)

Estimated Cost of the Scheme cost: Rs. 2.5 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

Hon'ble CERC notified CERC (Connectivity and General Network Access to the Inter-State Transmission System) Regulation 2022 and subsequent amendments. The same is implemented from 01.10.2023. Prior to this notified regulation, State charges were being collected by \$1.00 for all

Interstate Bilateral applications and by Power exchange agencies for all transactions held through exchanges.

However, after implementation of the above-mentioned Regulation and amendment, as per clause no. (26.2), only TGNA charges for collective and bilateral transactions undertaken through power exchanges are continued to be collected by power exchanges and settled to state SLDCs directly. Hence, state charges for short term Bilateral transactions held through GNA and T-GNA transactions (other than transactions held through power exchanges) are to be collected by state SLDC directly from the entity.

In view of this, starting from 1st October 2023, MSLDC needs to collect state charges for abovementioned transactions, hence, to avoid delay and manual intervention/errors while raising invoices against these transactions and further reconciliation and delay charges payments provisions, MSLDC need to develop a software billing module for the same. Further, considering urgency of this commercial income of MSLDC and as daily transactions are being happening, a module for these charges collection is need to be developed on urgent basis within the existing fees and charges module of the DSM comprehensive software as required data is to be fetched from DSM scheduling software. This requires a modification in DSM software billing module.

To develop billing module under DSM software and further changes if any due to regulatory amendments, budgetary provision of Rs. 2.5 Cr. is estimated for FY 2025-2030

Development and upgradation of Short Term Open access Software to accommodate regulatory changes, Orders of MoP/CERC/MERC, etc.

Total Scheme cost: Rs. 10 Cr. (FY 2025-30)

Estimated Cost of the Scheme cost, Rs. 2.5 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

Hon'ble Ministry of Power (MoP), Government of India (GoI) had notified Rules for Electricity (Promoting Renewable Energy through Green Energy Open Access) Rules, 2022 on 06.06.2022 and subsequent amendment dated 27.01.2023. Accordingly, MoP, GoI had launched the portal of Green Energy Open Access (GOAR) for processing of Green Open Access Applications developed by NLDC on dated 11.11.2022. Grid Controller of India Limited (NLDC) had published the Procedure for Grant of Green Energy Open Access on dated 14.09.2022 and made subsequent amendment on

Page 100 of 193

MSLEC MYT penant for FY 1025-26 to FY 2029-30

dated 07.07.2023. Further, Hon'ble MERC had notified the second amendment in the DOA regulation 2016 on dated 10.11.2023.

According to the procedure established by Grid Controller of India Limited (NLDC) for granting Green Energy Open Access, MSLDC acts as the nodal agency responsible for registering intrastate entities on the GOAR portal and for processing of bilateral short term Green Energy Open Access applications at intra state level where the point of injection and drawal both are located within the control area jurisdiction of the nodal agency.

Hence, the number of applications to be processed on monthly basis shall be to the tune of 1500-2000 Nos., which needs to be processed within stipulated timelines by coordinating with respective DISCOM'S along with invoice generation for each application as per applicable state charges. MSLDC observed that the national GOAR portal's registration and application pages require additional fields to process and schedule short-term green energy open access applications effectively, also the national GOAR portal does not have provision of raising of invoice for state charges and provision for DISCOMs login.

Hence, for smooth processing and scheduling of all STOA applications MSLDC need to develop a compressive STOA software (for RE and Non-RE applications) comprising of all provisions required as per Hon'ble MERC TOA/DOA Regulation 2016 and amendments thereof and as per NLDC GOAR procedure.

To develop the STOA software including GOAR provision, the necessary budgetary provision of Rs. 10 Cr. is estimated for FY 2025-2030.

8) Procurement of Optimization tool software Licenses for SCED & SCUC in the

Estimated Cost of the Scheme cost: Rs. 2.0 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

As per recommendations of High-Level Committee for Enquiry into MMR Grid Disturbance on 12th October, 2020 MSLDC should explore implementation of Security Constrained Economic Dispatch (SCED) and Security Constrained Unit Commitment (SCUC) while scheduling the embedded generation.

In SCED the optimization through LP provides full flexibility to accommodate changes to be incorporated due to continuous changes in the power system as well as the constraints. SCED is able

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to effectively identify any potential constraint violation in the schedule, thereby allowing the grid operator to manage it in a better manner. Execution time of Optimization engine is faster than the MoD execution time. SCED implementation will enhance cost efficiency, grid efficiency, reliability, and flexibility, particularly in the face of growing renewable energy integration and increasingly complex grid operations.

NLDC has implemented SCED which uses the LP-based optimization to handle multiple variables and constraints such as ramp rates, technical minimum, contractual obligations, transmission limits, and hydro resources constraints/limitations, ultimately improving grid stability and reducing operational costs.

For the implementation of SCED, Optimization tool like, Licensed version of GAMS software needs to be procured, and corresponding hand hold support by engaging industry experts need to boarded. Further, integration with existing scheduling software will be essential for daily scheduling. To procure optimization tool for SCED & SCUC, budgetary provision of Rs 2.0 Cr. is estimated for FY 2025-2030.

Procurement of Optimization tool software Licenses for SCED & SCUC in the State along with inclusion of Resource Adequacy tool:

Estimated Cost of the Scheme cost: Rs. 5.0 Cr.

sTimeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

As per recommendations of High-Level Committee for Enquiry into MMR Grid Disturbance on 12th October, 2020 MSLDC should explore implementation of Security Constrained Economic Dispatch (SCED) and Security Constrained Unit Commitment (SCUC) while scheduling the embedded generation. In SCED the optimization through LP provides full flexibility to accommodate changes to be incorporated due to continuous changes in the power system as well as the constraints. SCED is able to effectively identify any potential constraint violation in the schedule, thereby allowing the grid operator to manage it in a better manner. Execution time of Optimization engine is faster than the MoD execution time. SCED implementation will enhance cost efficiency, grid efficiency, reliability, and flexibility, particularly in the face of growing renewable energy integration and increasingly complex grid operations.

NLDC has implemented SCED which uses the LP-based optimization to handle multiple variables and constraints such as ramp rates, technical minimum, compactual obligations, transmission limits,

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Page 102 of 193

and hydro resources constraints/limitations, ultimately improving grid stability and reducing operational costs. For the implementation of SCED, Optimization tool like, licensed version of GAMS software needs to be procured, and corresponding hand hold support by engaging industry experts need to boarded. Further, integration with existing scheduling software will be essential for daily scheduling.

To enable the implementation of Resource Adequacy framework by outlining a mechanism for planning of generation and transmission resources for reliably meeting the projected demand in compliance with specified reliability standards for serving the load with an optimum generation mix. The Resource Adequacy framework shall cover a mechanism for demand assessment and forecasting, generation resource planning, procurement planning, and monitoring and compliance.

Distribution licensees has to submit the MT-DRAP and ST-DRAP to commission with copy to MSLDC, based on the MT-DRAP and ST-DRAP, STU and MSLDC shall communicate the state-aggregated capacity shortfall to the Commission by 15th September of each year for the ensuring year(s) and advise the distribution licensees to commit additional capacities.

STU with inputs from MSLDC and based on the demand estimates of the distribution licensees of the State, shall estimate, in different time horizons, namely long-term, medium term and short term, the demand for the entire State duly considering the diversity of the State.

MSLDC shall aggregate demand forecasts by distribution licensees, considering the load diversity, congruency, seasonal variation aspects and shall submit state-level aggregate demand forecasts (MW and MWh) in different time horizons, namely long term, medium-term, and short-term to the Authority and NLDC and RLDC by 31st May of each year for the ensuring year(s).

To study the resource adequacy plan for state of Maharashtra, Resource Adequacy model development is needed to handle huge data of all 17 distribution licensees

To procure optimization tool for SCED & SCUC & Resource Adequacy tool, budgetary provision of Rs 5.0 Cr. is estimated for FY 2025-2030.

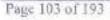
10) Development of integrated data handling platform analytical software, Analytics based on SCADA, Schedule, Meter & PMU data, etc having capability of integration with SCADA, DSM, MDM System, etc.

Estimated Cost of the Scheme cost: Rs. 13.0 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-

Purpose, objective & intended benefit of the scheme

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MSLDC is using number of software such as DSM, RE-DSM, Data Warehousing, SCADA, URTDSM, etc. All these software are operating in parallel and the data is maintained in silos. To carry out any analytics using data from multiple software, it is to be made manually. Hence, MSLDC is conducting a pilot on AVEVA PI system.

The key features of AVEVA PI system are as below:

- Real-Time Data Collection: The system collects and stores real-time data from various sources, including sensors, PLCs, and SCADA systems.
- Data Visualization: It offers advanced visualization tools, allowing users to create
 dashboards and reports that present data in an accessible format.
- Historical Data Analysis: Users can analyze historical data to identify trends, conduct performance benchmarking, and improve decision-making.
- Data Integration: The PI System can integrate with other software and systems, enabling seamless data flow across different platforms.
- Event and Alarm Management: The system can track events and alarms, providing
 operators with timely alerts to facilitate quick responses to issues.
- Advanced Analytics: AVEVA PI supports advanced analytics capabilities, enabling
 users to perform predictive maintenance and optimize operations.
- Cloud and On-Premise Deployment: The system can be deployed in the cloud or onpremises, providing flexibility based on organizational needs.

Uses of this system is for:

- Operational Efficiency: By providing real-time insights, the PT System helps organizations optimize processes and improve operational efficiency.
- Monitoring and Control: It allows for continuous monitoring of critical parameters, enabling proactive control and management of industrial processes.
- Performance Management: Organizations use the PI System to analyze performance metrics, helping them identify areas for improvement and reduce downtime.
- Regulatory Compliance: The system assists in compliance with industry regulations by providing detailed records and documentation of operations.
- Energy Management: In the energy sector, the PI System is used for monitoring grid performance, managing energy consumption, and invegrating renewable sources.
- · Asset Management: The PI System below organizations track asset performance and

health, facilitating effective maintenance strategies.

Thus, during pilot operation, REMC SCADA system, RE Scheduling software, DSM Scheduling software & Meter data management system will be integrated and some analytical reports will be developed.

To develop a AVEVA PI system & and further changes if any as per the system requirements, budgetary provision of Rs. 13 Cr. is estimated for FY 2025-2030.

11) Consultancy for verification of existing setup for compliance of Data Centre norms

Estimated Cost of the Scheme cost: Rs. 1.0 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

The main objective of the consultancy for the construction of Data Centre samp with Disaster Recovery (DR) refers to an organization's ability to respond to and recover from events that negatively impact business operations. The primary goal of DR methods is to enable the organization to regain the use of critical systems and IT infrastructure as quickly as possible following a disaster. The main objective of the Consultancy is to assess the existing Infrastructure for compliance of the DC-DR standards. Further, requirement of modification to the existing infrastructure or going ahead for a new data Centre with DC-DR setup along with the compliance of critical infrastructure will be assessed. DC-DR synchronization can be described as a mechanism to copy all the objects from the primary Data Center (DC) setup to another site, which can function as a Disaster Recovery (DR) site when the primary DC goes down.

Construction of Data Centre with DC-DR configuration as per standard norms (if required)

Estimated Cost of the Scheme cost: Rs. 60 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

Based on the report submitted by the consultants, modification in the existing infrastructure or construction of new Data Centre with DC-DR configuration will be carried out as per standard norms. The main objective of the construction of Data Centre setup with Disaster Recovery (DR) refers to an organization's ability to respond to and recover from events that negatively impact business

operations. The primary goal of DR methods is to enable the organization to regain the use of critical systems and IT infrastructure as quickly as possible following a disaster.

13) Restructuring and beautification of fountain area

Estimated Cost of the Scheme cost: Rs. 0.25 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

Restructuring and beautification of fountain area is required to make space for four-wheeler parking as there is very less space for parking in the backside of office building.

14) Life Extension of Panchganga and Sabarmati Residential Buildings

Estimated Cost of the Scheme cost: Rs. 0.50 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose, objective & intended benefit of the scheme

Both the residential buildings have completed almost 50 yrs of life. Most of the walls are having heavy water seepage during the monsoon season. The columns have developed cracks. As per the structural audit conducted during 2018-19, the buildings have been declared unfit for residence. Through structural strengthening measures, buildings can be fortified to withstand natural disasters like earthquakes, hurricanes, and floods, mitigating the risk of fatalities and injuries. Hence column strengthening, external re-plastering and water proofing work of Panchganga and Sabarmati residential buildings is essential for enhancing the life span of the buildings.

15) Compliances of Fire and Safety Audit:

Estimated Cost of the Scheme cost: Rs. 0.50 Cr.

Timeframe for completion - FY 2025-26 to FY 2025-30

The Fire audit assesses the functionality, adequacy and maintenance of fire projection systems, such as fire alarm systems, fire sprinklers, fire extinguishers, and fire suppression systems. An Electrical Safety Audit is a systematic examination of an organization's electrical systems, equipment, and practices to identify potential hazards, ensure compliance with regulations, and enhance overall safety.

Fire and electrical safety audit of MSLDC Office Building was conducted on dt. 05.03.2024-06.03.2024 in order to check and assess the status of the Fire and Electrical safety Management System prevalent in MSLDC, Airoli, Navi Mumbai, Statutory Licenses and compliances, Accident

Statistics and Records, Safety Policy, Safety Committee Meeting, Fire prevention and Protection measures, Emergency preparedness, Electrical Records, Work Permit System, Operating and Maintenance Procedures, Inspection Schedules, etc. were pursued during the curse of the Audit. Post audit the National Safety Council, CBD Belapur pointed out the corrective actions wherever necessary. These audit points and corrective measures need to be complied on priority.

Replacement of 2 Nos. of 100KVA UPS

Estimated Cost of the Scheme cost: Rs. 0.50 Cr.

Timeframe for completion - FY 2025-26 to FY 2029-30

An uninterruptible power supply's primary role is to provide short-term emergency power when there is a complete mains failure or blackout. UPS systems serve two main purposes. They provide backup power as quickly as possible in the event of power loss, and they offer some degree of protection from power quality issues that may damage equipment. The existing setup was installed and commissioned in 2014-15. The useful life span of UPS systems is 10 years. Both the UPS will complete the life span of 10 Yrs in the F.Y. 2025-26. As the existing setup has completed its useful life, it needs to be replaced in the F.Y. 2026-27.

17) Replacement of 440Nos. of 400AH 2V VRLA Batteries

VRLA batteries are frequently employed in UPS (uninterruptible power supply) or other high-rate applications. Both the sets of 400AH VRLA Battery sets will complete the life span of 5 Yrs in the F.Y. 2026-27 and need to be replaced in the F.Y. 2027-28.

Construction of multi-storey staff quarter building with 38 tenements at SLDC premises, Kalwa Complex, Airoli, Navi Mumbai.

Estimated Cost of the Scheme cost: Rs. 24.7.

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose objectives and intended benefit

Dismantling existing building (4 nos.) (viz. Yamuna, Panchganga, Sabarnati and Venna) & construction of multi-storey building for Type-I & Type-II officers and singly storey for Type-I (Senior) Officers with total 38 tenements at SLDC premises. Kalwa Complex, Alrolz. The Colony is essential for the emergency staff working in the Maharashtra State Load Despatch Centre, Airoli.



- The cost benefit ratio will be increased as the employees HRA will be remitted to the Company. Also the annual recurring maintenance expenditure on these new Buildings will be meagre enough.
- The expenditure made in these buildings during last three years is not economical. Hence, construction of new Building is required.
- MSLDC, being critical infrastructure, employees involved in operation and maintenance and other critical services needs to be available round the clock.

Renovation and Modernization of existing SCADA System at SLDC Kalwa and ALDC Ambazari (FY2025-26);

Estimated Cost of the Scheme cost: Rs. 69.05

Timeframe for completion - FY 2025-26 to FY 2029-30

Purpose objectives and intended benefit

SCADA/EMS System is an essential requirement as per IEGC, 2023 Section (33). As per CERC Regulations (Fees and Charges of Regional Load Despatch Centre and other related matters), 2019 the useful life of SCADA System is 7 years. The present SCADA System has outlived its useful life and is due for urgent replacement. The new System will have the latest features of SCADA/ EMS System and Cyber Security features.

Existing SCADA completed ten years and due to aging the Hardware, are more prone for failures. Frequent issues with the hardware are being observed. Also, during hardware issues, redundancy of system gets hampered & hence the reliability. Hardware support has become very critical these days as OEM (Original Equipment manufacturer) have stopped manufacturing of old generation Hardware spares, due to technological innovations.

The Technical specifications of present SCADA Systems were designed in year 2008 and accordingly after tenderization this SCADA System was commissioned. During the period of a decade, Hardware and software, HMI technology, IT network Security measures, Network Topologies, have upgraded and changed vastly. To keep pace with Upgraded technologies in Power System SCADA, it is necessary to opt for new generation SCADA. Apart from these, due to technological advances following limitations are also observed in the present SCADA System.

a. Hardware support for existing Servers has become critical as software availability of old hardware has become rare. Easy availability of spares of specific hardware components has



become scarce. The OEM Sun Company is taken over by M/s Oracle & many of server spares are not being manufactured presently. Through system is supplied by M/s Siemens, it has become difficult for M/s Siemens to give support through M/s Wipro.

- b. Data storage limitations.
- c. Multiple user access to SCADA is limited.
- d. As user interface is Unix based in present system, it's not user friendly for operators. Graphical User-interface is not hardy, comfortable like windows-based system. New Systems with Windows based User interface which is more operation friendly are available these days.
- Reports generation as per Operators requirements is not possible.
- f. Processing speed is low.

In view of above, the present SCADA System at SLDC kalwa and ALDC Ambazari is required to be upgraded & replaced by new SCADA with latest IT security measures and state of art features, functionalities & compatible to large number of MSETCL/CPP/IPPs RTUs & SAS which will be integrated in such SCADA.

20) Rate Contract for Services towards Integration of 260 SAS/DCs/RTUs of any make over IEC 104 protocol into SCADA System at MSLDC Kalwa and ALDC Ambazari (FY2025-27):

Estimated Cost of the Scheme cost: Rs. 9.96

Timeframe for completion - FY 2025-26 to FY 2027-28

Complete visibility of Maharashtra State Power System is an essential requirement for efficient working of SCADA and EMS Systems as per IEGC, 2023 Section (33) as under:

"SLDCs, RLDCs and NLDC shall utilize network estimation tool integrated in their EMS and SCADA systems for the real time operational planning study. All users shall make available at all times real time error free operational data for the successful execution of network analysis using EMS/SCADA."

The High-Level Committee (HLC), recommended the Power System Operators to use Modern Decision Support Systems like EMS, State Estimator, Situational Awareness Systems, etc. which require complete real-time data of Maharashtra State Power Grid to be integrated into the SCADA System.



Accordingly, the Chief Engineer, ACI&P, C.O. proposed a Scheme for SITC of 250 nos. of RTUs for 100% data visibility up to 132kV level of MSETCL Substations. The work of integration of RTUs/SAS/DCs into the SCADA System is proprietary in nature and hence a firm quotation was obtained from M/s Siemens who is the OEM of the SCADA System. Accordingly, MSLDC submitted a proposal for integration of 260 RTUs/SAS/DCs to the Competent Authorities considering the additional requirement up to 2025.

The proposed scheme will supplement the real-time SCADA data required for configuring and running Decision Support Systems thereby enabling the Power System Operator to take real-time quick and efficient Grid Management decisions.

Due to increasing RE penetration, capturing the real-time data of Substations up to 132 kV level will result in capturing the real-time data of existing as well as upcoming Renewable Energy pooling Substations required to be configured in REMC SCADA. This will enable the Power System Operator to view all the necessary data in a single glance thus enabling the Power System Operator to take smarter decisions.

Unified Communication Infrastructure (Communication Hub) interface at SCADA for Data acquisition of SCADA/REMC/URTDSM (FY 2026-27).

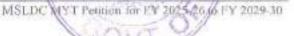
Estimated Cost of the Scheme cost: Rs. 10.0 Cr

Timeframe for completion - FY 2025-26 to FY 2026-27

Presently, IPPs/CPPs are using Communication Links supplied by multiple Vendors. As such, over the period of time, the number of Networks and Communication Links have drastically increased. Due to increasing Communication Links, the present infrastructure is used to its fullest capacity, and it is becoming technically more challenging to integrate the real-time data being transmitted over the Communication Channels into the SCADA System.

It is proposed to install a unified Communication Infrastructure (Communication Hub) such that all the Communication Links will terminate on the Hub. The same will then be integrated into the SCADA System. This will simplify the hassle of complicated Network integration and will simplify the integration work and the troubleshooting will also get easier.

With the new unified Communication Infrastructure (Communication Hub) the Network will be well defined and can be integrated through a well-planned Cyber Scotte Infrastructure thereby ensuring stringent Cyber policies and secure data transmission.



Incidental SCADA expenses (FY2025-30).

Estimated Cost of the Scheme cost: Rs. 1.75 Cr

Timeframe for completion - FY 2025-26 to FY 2026-27

For overall allied expenses which are not covered under AMC.

23) Changes in DSM software:

Estimated Cost of the Scheme cost: Rs. 4.85 Cr

Timeframe for completion - FY 2025-26 to FY 2026-27

Purpose, objective and intended benefit

- DSM software was developed and put to use from 11/10/2021. The software is being utilized
 in a routine manner.
- However, on account of the regulatory orders, some modifications are to be carried out to the effect. Such modifications in the DSM software are considered under Change Request.
 In FY 2023-24, a change request order was placed on M/s PwC for Rs. 0.84 Cr and in FY 2024-25, another change request order was placed on M/s PwC for Rs. 0.56 Cr.

As power market is continuously evolving, the DSM software may undergo further modifications as may be necessary due to regulatory orders in future. The projected Change Request values are mentioned in the table above.

24) Development of new REMC and QCA-REDSM software:

Estimated Cost of the Scheme cost: Rs. 6 Cr

Timeframe for completion - FY 2025-26 to FY 2026-27

Purpose, objective and intended benefit

RE-DSM software was developed and put to use from 06/01/2020. Now, on account of the notification of MERC (F&S) (First Amendment) Regulations, 2024, the existing RE-DSM software will undergo a major modification in the application level as well as database level. As such, it is proposed to develop an altogether new software with cloud hosting to eater to the provisions of the First Amendment Regulations. The cost of development of new software is estimated at Rs. 2.0 Cr (inclusive of scheduling cost). The modifications in the software, if pay, on account of the Orders of Hon'ble Commission in future is projected in the table above.

25) Development of new FBSM software:

Estimated Cost of the Scheme cost: Rs. 1.66Cr Timeframe for completion – FY 2025-26 to FY 2026-27

Purpose, objective and intended benefit

• FBSM software was developed with M/s L&T as implementation partner to implement the ABT Order in the State of Maharashtra. The software was developed on LODESTAR platform and is in use since August 2011 and now has reached the end of its lifecycle. However, the FBSM billing activities are still going on and hence require a new software for the same. The tenderization work for the new FBSM software is going on and parallelly the DPR for the same is being prepared and sent to Hon'ble MERC for in-principle approval. The modifications, if any, covered under the Change requests are mentioned in the table above.

26) Incidental REMC-SCADA & URTDSM expenses:

Estimated Cost of the Scheme cost: Rs. 0.5Cr

Timeframe for completion - FY 2025-26 to FY 2026-27

Purpose, objective and intended benefit

For overall allied expenses which are not covered under AMC.

27) Development of Analytical Tools for WAMS system:

Estimated Cost of the Scheme cost: Rs. 9 Cr

Timeframe for completion - FY 2025-26 to FY 2026-27

Purpose, objective and intended benefit

The development of analytical tools for a Wide Area Measurement System (WAMS) aims to create software that helps monitor and analyze power grid in real time. These tools use data from various sensors like phasor measurement units (PMUs) to make the grid more stable and reliable. It focuses such as survival of the grid from cascading, Islanding scheme and give input to operator about its healthiness for Resynchronization, predictive analytics for potential disturbances, detecting faults and quick root cause diagnostics to take appropriate actions. The main goal is to provide operators with useful insights to improve response times and manage the grid efficiently.

Therefore, development of analytical tools for a Wide Area Measurement System (WAMS) is

proposed in this scheme.

- 15 Marine

MSLDC MYT Pulsion for FY 2025-26 to FY 2029-30

Page 112 of 193

28) Upgradation of REMC SCADA entire system:

Estimated Cost of the Scheme cost: Rs.17 Cr

Timeframe for completion - FY 2025-26 to FY 2028-29

Purpose, objective and intended benefit

REMC SCADA System is an essential requirement as per MERC F & S Regulations, MSLDC is mandated to carry out PSS wise /Generating Unit wise forecasting. REMC SCADA system installation and commissioning work completed by M/s. Powergrid & the project is handed over to MSLDC on date 01.01.2020 & one-year Defect Liability Period (DLP/warranty period) of REMC project was started from date 01.01.2020 and it has completed on date 31.12.2020. So, the annual maintenance services period started from 01.01.2021 and it will be upto 31.12.2026. As per CERC Regulations (Fees and Charges of Regional Load Dispatch Centre and other related matters), 2019 the useful life of REMC-SCADA System is 7 years. The new System will have the latest features of REMC SCADA System with plant wise Real Time weather forecasting and Cyber Security features. In view of above, the present REMC SCADA System at MSLDC Airoli will required to be upgraded & replaced by new REMC SCADA with latest cyber security measures and state of art features, functionalities & compatibility to large number of PSS/Generating Unit wise RTUs and for Real Time weather forecasting parameters which will be integrated in REMC SCADA.

29) Maharashtra State Unified Synchrophasor Project (MSETCL WAMS Project)

Estimated Cost of the Scheme cost: Rs.70 Cr

Timeframe for completion - FY 2026-27 to FY 2028-29

Purpose, objective and intended benefit

The existing Unified Real-Time Dynamic State Measurement (URTDSM) system is implemented by M/s. Power Grid Corporation of India Limited in October 2018. It includes Phasor Measurement Units (PMUs) installed at various substations and a Phasor Data Concentrator (PDC) located at MSLDC, Airoli. This project involves five 400kV MSETCL substations namely Chandrapur, Kolhapur, Lonikand, Padghe, and Kalwa. Currently, 21 PMUs are integrated into the PDC. The integration activity has been carried out by M/s. GE, Noida. These PMUs transmit data such as rate of change frequency, Positive Sequence Voltage and Current, Active Power, Reactive power etc. to the PDC every 40 milliseconds via optical fiber. The data collected from these PMUs is crucial for real-time monitoring, state estimation, and dynamic stability malysis. The URTDSM WAMS system

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is currently operating satisfactorily at MSLDC, Airoli and is also under AMC with a validity up to October 2025.

As per the Tender conditions, the Cyber Security audit of this System us being carried out annually. After going through the audit report, it is observed that there are many critical vulnerabilities which needs to be mitigated urgently. The OEM expressed his inability to mitigate the vulnerabilities as the System and application Software needs upgradation. As such, it is felt necessary to upgrade/ replace the existing System.

The development of Wide Area Measurement System (WAMS) aims to monitor and analyze power grid in real time. The analytical tools will use data from phasor measurement units (PMUs) to make the grid more stable and reliable. It focuses such as survival of the grid from cascading, Islanding scheme and give input to operator about its healthiness for Resynchronization, predictive analytics for potential disturbances, detecting faults and quick root cause diagnostics to take appropriate actions. The main goal is to provide operators with useful insights to improve response times and manage the grid efficiently.

Therefore, implementation of Maharashtra State Unified Synchrophasor Project (MSUSP) is proposed.

IT Infrastructure Development (Firewall, Router, Switches, Server, Desktop/Laptop/Printer, Antivirus, WIFI)

Estimated Cost of the Scheme cost: Rs.4.25Cr

Timeframe for completion - FY 2026-27 to FY 2028-29

Purpose, objective and intended benefit

SLDC Maharashtra is required to procure / renew the licenses of the Firewall / Antivirus for prevention of the Cyber threats & running the business application smoothly round the clock. Further for day-to-day operation it is necessary to procure / replace existing assets such as Desktop / Laptop / Printers / Servers as per the requirement or after completion of the useful life of the assets.

31) Establishment of CSOC (Cyber Security Operation Centre) at SLDC

Estimated Cost of the Scheme cost: Rs.15Cr

Timeframe for completion - FY 2026-27 to FY 2028-29

Purpose, objective and intended benefit

SLDC Maharashtra is planning to establish the CSOC at SLDC with licensed cyber security tools.

CSOC will be having information security team responsible for monitoring and analyzing the security



posture of SLDC Maharashtra. The Manpower deployed for SOC will operate 24x7 and collect, monitor, analyse, investigate and remediate security incidents related to Cyber Security. For establishment of the SOC, procurement of Cyber Security Tools such as SIEM, Next Generation Firewalls, EDR, WAF, Anti-Advanced Persistent Threats (APT) etc. will be required.

32) Implementation of advanced Cyber Security Solution for IT and OT Infrastructure of SLDC

Estimated Cost of the Scheme cost: Rs.15Cr

Timeframe for completion - FY 2026-27 to FY 2028-29

Purpose, objective and intended benefit

SCADA, REMC, URTDSM & WBES (Web Based Energy Scheduling) of MSLDC has been identified as Critical Information Infrastructure (CII) by NCIIPC. These CII and the computer resources of its associated dependencies has been notified as a Protected System vide GoM, Gazette notification dated 13 Jan 2023.

In order to strengthen the Cyber Security posture of these systems, Maharashtra SLDC is planning to have detailed analysis of the IT and OT infrastructure & implement the advance Cyber Security Solutions for IT and OT infrastructure of SLDC.

CAPEX PLAN FOR AREA LOAD DESPATCH CENTRE AMBAZARI

1. Building / premises development

Estimated Cost of the Scheme cost: Rs.0,50Cr

Timeframe for completion - FY 2026-27 to FY 2028-29

Purpose, objective and intended benefit

Demolishing and restructuring of existing 04 Number of watch towers. The security guards need to climb the watch tower for patrolling. At present the watch towers have deteriorated and are too dangerous to use. As per the security audit report Dated 30/07/2024 the structural audit has to be carried out. This office has taken the follow up regarding the structural Audit with Superintending Engineer (Civil) Nagpur zone. The Civil wing Nagpur zone has started the process of carrying out the structural audit. Improving parking facilities and access roads to accommodate employees and visitors.

2. Procurement of AC

Estimated Cost of the Scheme cost: Rs.0.45Cr

Timeframe for completion - FY 2026-27 to FY 2028-2

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There are total 39 Nos of split Air conditioners units installed at ALDC Ambazari, Nagpur which were installed during renovation and modernization of ALDC building in 2012. These units are no longer performing at optimal efficiency. Regular maintenance has been carried out, but the wear and tear over the years have led to a noticeable decline in their effectiveness. Energy consumption and operating costs has also increased. Hence it would be beneficial to replace the old units by newer ones.

3. Construction of compound wall from main entrance gate (NH-6) to Colony gate:

Estimated Cost of the Scheme cost: Rs.1.0Cr

Timeframe for completion - FY 2026-27 to FY 2028-29

Purpose, objective and intended benefit

ALDC (Area Load Desptach Centre) is the Backup Centrol Centre of Maharashtra State Load Despatch Centre. As the Systems in ALDC are critical and are identified as CII (Critical Information Infrastructure) by NCIIPC (National Critical Information Infrastructure Protection Centre), the area needs to be secured. With reference to above subject, there is a need to construct a compound wall on both side of approach road from NH6 Highway to Colony gate. The access to the premises is to be secured from all entry points to avoid unauthorized entry into the Area Load Desptach Centre. Some hutments also come up in the surroundings of this premises. Hence, in order to avoid nuisance and for multiple security reasons and as per the recommendations of Anti-terrorist squad Nagpur.

4. 48V 1000AH Battery set along with charger and DCDB:

Estimated Cost of the Scheme cost: Rs.0.25Cr

Timeframe for completion - FY 2026-27 to FY 2028-29

Purpose, objective and intended benefit

With reference to above subject, the 48 V 1000AH battery set was commissioned at ALDC Ambazari in the year 2017. The expected lifespan of these batteries is approximately 8 to 10 years. Given that they have now been in operation for about 8 years, they are approaching the end of their effective service life. As these batteries are essentially required for various SCADA and communication equipment at ALDC Ambazari, it is essential to replace them before any potential failures occur, which could disrupt our activities and lead to unforeseen costs. The existing battery set are approaching the end of their effective service life. As these batteries are essentially required for various SCADA and communication equipment at ALDC Ambazari in sessential proceplace them before any potential failures occur, which could disrupt our activities and lead to unforeseen costs.

Page 116 of 193

MSLDC MYT Plution for FY 2025-2610 TY/2025 4

33 kV Express feeder with OPGW cable for redundant power supply and data connectivity from 220kV Ambazari s/s:

Estimated Cost of the Scheme cost: Rs 1Cr

Timeframe for completion - FY 2026-27 to FY 2028-29

Purpose, objective and intended benefit

The need of additional 33 KV Express Feeder as there is consistent performance issues and reliability concerns that have raised with the existing 11 KV Feeder. Over recent months, we have encountered frequent breakdown due to mechanical component delay in restoration of the existing 11 KV feeder. These problems have led to unexpected downtime directly affecting our operational capabilities and efficiency. Moreover, our standby 11 KV Wadi feeder has not proven to be a reliable backup, suffering from frequent tripping issues, and unable to provide a stable and continuous power supply. Further, there are problems in respect of phase sequence rotation and poor voltage profile when this premises is fed from 11 KV Wadi Feeder.

6. DG Set

Estimated Cost of the Scheme cost: Rs 0.32r

Timeframe for completion - FY 2026-27 to FY 2028-29

The DG set was procured in this office in the year 2014 of 200 KVA capacity. To ensure uninterrupted power supply, increasing load and maintain operational reliability, it is crucial that we replace the current DG set with a new, more efficient model. Modern DG sets offer enhanced fuel efficiency, lower emissions, and improved technology, which would not only provide better performance but also contribute to cost savings in the long run.

 Replacement of existing 2 X 40 KVA Vertiv (crstwhile Emerson) make UPS System along with 2 Nos. 300 AH Battery at ALDC Ambazari Nagpur

Estimated Cost of the Scheme cost: Rs 1.0 Cr

Timeframe for completion - FY 2026-27 to FY 2028-29

Purpose, objective and intended benefit

The above, 2 X 40 KVA M/s Vertiv (erstwhile Emerson) make VPS System along with 2 Nov. 300 AH Battery Set was commissioned at ALDC Ambazari on dated 14.10.2016 and it is under AMC with M/s Vertiv (erstwhile Emerson) & same is working smoothly. Useful life of existing 2/X 40 KVA Vertiv (erstwhile Emerson) make UPS System along with 2 Nov. 800 AH Battery Set at ALDC Ambazari Nagpur will be expiring after 10 years as per OEM recommendations in the year 2026.

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Specific prayer for approval of DPR Scheme:

The Petitioner respectfully submits that, as per present Regulatory norms, Rs 1 Crore and above projects have to be submitted for approval before Hon'ble Commission, as DPR projects. The limit to DPR scheme may be revised to Rs 5 Crore for SLDC, considering the present proposed project costs. The projects up to Rs 5 Crore may be treated as non-DPR projects, and for them the approval process may be relaxed for SLDC.



7. ARR forecast for FY 2025-26 to FY 2029-30

The Hon'ble Commission has notified the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2024 (MYT Regulations, 2024) which is applicable for the control period comprising five Years from April 1, 2025 to March 31, 2030. As per Regulation 3.1 of MYT Regulations, 2024 the Hon'ble Commission shall determine the Aggregate Revenue Requirement, Tariff and Fees and Charges, including terms and conditions thereof, in accordance with MYT Regulations, 2024 including fees and charges applicable for MSLDC.

Regulation 4 of MYT Regulations, 2024 has given the details regarding multi-year tariff framework. The framework related provisions are given below.

- "4 Multi-Year Tariff Framework
- 4.1 The Commission shall determine the Tariff and Fees and Charges for matters covered in Regulation 3.1, under a Multi-Year Tariff framework with effect from April 1, 2025.
- 4.2 The Multi-Year Tariff framework shall be based on the following elements, for computation of Aggregate Revenue Requirement and expected revenue from Tariff and Charges for Generating Companies, Energy Storage System Developer (ESSD), Transmission Licensees, Distribution Wires Business, Retail Supply Business, Fees and Charges of MSLDC and Fees and Charges of STU;
- (i) A Multi-Year Tariff Petition comprising the forecast of Aggregate Revenue Requirement, expected revenue from existing Tariff or Fees and Charges in case of MSLDC and STU, expected revenue gap, and proposed Tariff or Fees and Charges for each year of the Control Period, shall be submitted by the Generating Company or ESSD, or Licensee or MSLDC or STU:

Provided that the Distribution Licensee shall propose the category-wise Tariffs for each year of the Control Period:

Provided further that the performance parameters whose trajectories have been specified in these Regulations shall form the basis of projection for the Aggregate Revenue Requirement for the entire Control Period;

(ii) Determination of the Aggregate Revenue Requirement and Tariff or Fees and Charges for Generating Companies, ESSD, Transmission Licensees, Distribution Wires Business, Retail Supply Business, MSLDC and STU by the Companyion for each poor of the Control Period, at

MSLDC MYT Peijdon for PM2015-26 to FY 2029-30

the start of the Control Period:

Provided that the Commission shall also approve the sharing proportion amongst the Transmission System Users of the MSLDC Fees and Charges and STU Fees and Charges for the Control Period:

(iv) For Generating Companies, Transmission Licensees, MSLDC, STU and ESSD: Petition for True-up for the first four years of the Control Period based on audited accounts and provisional true-up for the fifth year of the Control Period of operational and financial performance vis-à-vis the approved forecast for the respective years, shall be submitted by the Generating Company or ESSD, or Transmission Licensee or MSLDC or STU along with its Petition for Tariff determination for next Control Period."

Further, Regulation 5.1 provides the details about Petition to be filed by the Licensee during the control period. The relevant part is reproduced below:

- "5.1 The Petitions to be filed in the Control Period under these Regulations are as under:
- a) Multi-Year Tariff Petition, which is complete in all aspects as per these Regulations, shall be filed by November 1, 2024 by Generating Companies, Transmission Licensees, ESSD, MSLDC and STU, and by November 30, 2024, by Distribution Licensees, comprising:
- i. Truing-up for FY 2022-23 and FY 2023-24 to be carried out under the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019:

Provided that the Commission may, if it considers appropriate, carry out the Traing-up for years prior to FY 2022-23 under the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019, along with the Traing-up for FY 2022-23, in case such Traing-up is yet to be completed;

- Provisional Truing-up for FY 2024-25 to be carried out under the Maharashtra Electricity Regulatory Commission (Multi Year Turiff) Regulations, 2019;
- iii. Aggregate Revenue Requirement for each year of the Control Period under these Regulations;
- iv. Revenue from the sale of power at existing Tariffs and charges and projected revenue gap for each year of the Control Period under these Regulations.
- v. Proposed category-wise Tariff or Fees & Charges for each year of the Control Period under these Regulations;"



Further, Regulation 6 provides details about MYT Petition to be filed by the Licensees. The relevant part is given below:

"6 Multi-Year Tariff Petition

- 6.1 The Multi-Year Tariff Petition shall include a forecast of Aggregate Revenue Requirement and expected revenue from Tariff for each year of the Control Period in the manner specified in these Regulations and he accompanied by applicable fees.
- 6.2 The forecast of Aggregate Revenue Requirement may be based on assumptions relating to the behaviour of individual variables during the Control Period, including category-wise sales and demand projections, power procurement plan, capital investment plan, financing plan and physical targets, in accordance with guidelines and formats as may be prescribed by the Commission.
- 6.3 The capital investment plan shall show, separately, on-going projects that will spill over into the Control Period, and new projects (along with justification) that will commence in the Control Period but may be completed within or beyond it, for which relevant technical and commercial details shall be provided as per the provisions of the Maharashtra Electricity Regulatory Commission (Approval of Capital Investment Schemes) Regulations, 2022 and amendments thereof.
- 6.5 The forecast of expected revenue from Tariff and charges shall be based on the following:
- (a) In the case of a Generating Company, estimates of quantum of electricity to be generated by each Unit/Station for each year of the Control Period;
- (b) In the case of a Transmission Licensee, estimate of Aggregate Revenue Requirement or estimates of transmission capacity allocated to Transmission System Users, as appropriate, for each year of the Control Period;
- (c) In the case of a Distribution Licensee, estimates of quantum of electricity to be supplied to consumers and wheeled on behalf of Distribution System Users for each year of the Control Period: Provided that the Distribution Licensee shall submit relevant details of category-wise sales separately for each Distribution Franchisee area, including the laput Pherse and the Input Rate;
- (d) Prevailing Tariff as on the date of filing of the Petition.
- 6.6 Based on the forecast of Aggregate Revenue Requirement and expected revenue from Tariff

and charges, Generating Company, ESSD or Distribution Licensee or MSLDC or STU shall submit the proposed Tariff or Fees and Charges, categorywise if applicable, for each year of the Control Period, that would meet the gap, if any, in the Aggregate Revenue Requirement, including unrecovered revenue gaps of previous years to the extent proposed to be recovered.

6.7 Full details supporting the forecast shall be provided, including but not limited to details of past performance, proposed initiatives for achieving efficiency or productivity gains, technical studies, contractual arrangements and secondary research, to enable the Commission to assess the reasonableness of the forecast."

Following the above provisions and principles, the present MYT Petition has been prepared, where the Petitioner has submitted the two years' true-up, provisional true-up of current year, and ARR for live years of present control period. In this section, forecast of Aggregate Revenue Requirement, and proposed Fees and Charges for five-year period of the present Control Period, i.e. from FY 2025-26 to FY 2029-30, has been presented.

Part J of MYT Regulations, 2024 has detailed out the provisions related to MSLDC. Regulation 119 provides the methodology to be followed for determination of Annual Fixed Charges (AFC) for MSLDC. The provisions are given below.

"119 Annual Fixed Charges for MSLDC

119.1 The Annual Fixed Charges to be levied by the MSLDC shall provide for the recovery of the Aggregate Revenue Requirement of the MSLDC for the respective Year of the Control Period, as reduced by the amount of Non-Tariff Income as approved by the Commission and comprising the following:

- (a) Operation and Maintenance expenses;
- (b) Regional Load Despatch Centre (RLDC) Fees and Western Region Power Committee (WRPC) Charges;
- (c) Depreciation;
- (d) Interest on Loan Capital;
- (e) Interest on working capital
- (f) Return on Equity Capital; minus:
- (g) Income from Open Access charges;
- (h) Non-Taviff income:



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Provided that Depreciation, Interest on Loan, and Return on Equity for the MSLDC shall be allowed in accordance with the provisions specified in Part D of these Regulations:

Provided further that prior period income/expenses shall be allowed by the Commission at the time of truing up based on audited accounts, on a case to case basis, if the income/expenses in that prior period have been allowed on actual basis, subject to prudence check:

Provided also that all penalties and compensation payable by the MSLDC to any party for failure to meet its obligations or for damages, as a consequence of the orders of the Commission and Courts shall not be allowed to be recovered through the Aggregate Revenue Requirement: Provided also that the MSLDC shall maintain separate details of such penalties and compensation paid or payable by the MSLDC, if any, and shall submit the same to the Commission along with the Petitions to be submitted under these Regulations."

Following the above principle, MSLDC has prepared the present petition and in this section the AFC /ARR projection for five-year period of the present Control Period is presented. The details of each component of Aggregate Revenue Requirement are discussed below.

7.1.Operation & Maintenance Expenses

The provision for projected O&M expenses over the control period is given in Regulation 120 of MYT Regulation, 2024. The same is reproduced below.

"120.1 The Operation and Maintenance expenses for the MSLDC shall be computed in accordance with this Regulation.

120.2 The Operation and Maintenance expenses shall be derived on the basis of the average of the Trued-up Operation and Maintenance expenses after adding/deducting the share of efficiency gains/losses, for the five Years ending March 31, 2024 excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission. Provided that, the impact of the wage revision if any during the Trued-up year shall be included in the O&M expenses while determining the norms for the O&M expenses for the future year. Provided that the average of such Operation and Maintenance expenses shall be considered as Operation and Maintenance expenses for the Year ended March 31, 2022, and shall be escalated at the respective escalation rate for FY 2022-23, FY 2023-24 and FY 2024-25, to arrive at the Operation and Maintenance expenses for the base yearlonding March 31, 2025: Provided further that the escalation rate for FY 2012-23 EY 2023-24 and EY 2024-25 shall be



computed by considering 20% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 80% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past five financial years as per the Labour Bureau, Government of India.

Provided also that at the time of true-up for each Year of this Control Period, the Operation and Maintenance expenses shall be derived on the basis of the Final Trued-up Operation and Maintenance expenses after adding/deducting the sharing of efficiency gains/losses, for the year ending March 31, 2025, excluding abnormal expenses, if any, subject to prudence check by the Commission, and shall be considered as the Base Year Operation and Maintenance expenses:

120.3 The Operation and Maintenance expenses for each subsequent year shall be determined by escalating these Base Year expenses of FY 2024-25 by an inflation factor with 20% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 80% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past five financial years as per the Labour Bureau, Government of India, as reduced by an efficiency factor of 1% of derived inflation factor or as may be stipulated by the Commission from time to time, to arrive at the permissible Operation and Maintenance expenses for each year of the Control Period:

Provided that, in the Truing-up of the O&M expenses for any particular year of the Control Period, an inflation factor with 20% weightage to the average yearly inflation derived hased on the monthly Wholesale Price Index of the respective past five financial years (including the year of Truing-up) and 80% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past five financial years (including the year of Truing-up), as reduced by an efficiency factor of 1% of derived inflation factor or as may be stipulated by the Commission from time to time, shall be applied to arrive at the permissible Operation and Maintenance Expenses.

120.4 Wage revision, if any, during the Control Period, shall be treated as part of employee expense as controllable parameter and compared vis-à-vis normative O&M expense. Hence, the impact of arrears of wage revision, if any, booked as part of employee expense in any particular year, shall be normalised annually over Control Period and shall be subject to

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treatment as per sharing of gains and loss as per Regulation 11 for the purpose of true-up of O&M expense of respective years, subject to prudence check.

126.5 Provision of expenses shall not be considered as actual expenses at the time of true-up, and only expenses as actually incurred shall be considered.

120.6 The MSLDC may undertake Opex schemes for system automation, new technology and IT implementation, etc., and such expenses may be allowed over and above normative O&M Expenses, subject to prudence check by the Commission: Provided that the MSLDC shall submit detailed justification, cost benefit analysis, and life-cycle cost analysis of such schemes as against capex schemes, and savings in O&M expenses, if any

120.7 The Commission may consider any request for revision of the normative O&M expenses of MSLDC on account of consideration of some Schemes under O&M rather than Capital Investment on case-to-case basis, depending on the justification to be submitted by the Applicant and the life-cycle cost analysis: Provided that if actual O&M expenses are lower than such revised normative O&M expenses on this account, then no sharing of efficiency gains shall be done to that extent.

120.8 The HRD expenses shall be booked under Employee expenses instead of A&G expenses from the first year of the Control Period. Projected HRD expenses will be minimum Five Percentage (5%) of the Employee Expenses for the respective financial year.

Provided that, if the expenses towards HRD falls below 5% of total Employee expenses allowed under these Regulations, then such savings in HRD expenses shall not be set off against Employee expenses.

120.9 MSLDC shall submit the roadmap for planning of HRD expenses in the MYT Petition.

All the efforts shall be made to ensure that minimum seven days training per employee per annum is imparted as per the National Training Policy. MSLDC shall identify the institutes for training, capacity building and prepare the detailed plan in MYT Petition."

As per provision given above, projection of O&M expenses for the control period is determined on the basis of past five years' data of O&M expenses after sharing of gain and loss (i.e. FY 2019-20 to FY 2023-24). It is to be noted that for FY 2022-23 and FY 2023-24, the Petitioner has considered the data as submitted in this Petition under true up section, all other data are as approved by the Hon'ble Commission in respective true-up year order. The average of the years' expenses is considered as expenses for FY 2021-22, which is derived as Rs 3071.03 £akks. The same has been



escalated with escalation factors derived as per provision given in the MYT Regulations, 2024, for FY 2022-23 (escalation factor of 5.85%) and FY 2023-24 (escalation factor of 5.61%) and FY 2024-25 (escalation factor of 5.61%).

On the basis of the above, the petitioner had work out the normative O&M expenses for FY 2024-25 as given below:

Table 36: Projected Normative O&M Expenses for FY 2024-25

(Rs. Lakh)

Particul ars	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	Average (FY 21- 22)	Revised FY 22-23	Revised FY 23-24	Revised FY 24-25
O&M Expense s after gain and loss	2452.66	2840.03	3064.45	3369.13	3628.88	3071.03	3250.80	3433.25	3625.93

Further the normative O&M expenses for FY 2024-25 have been escalated for each year of control period to derive the normative O&M expenses as per escalation factor derived according to the MYT Regulations, 2024. It is to be noted that the escalation factor in this case (4.61%, which is derived for FY 2023-24 with latest data) is derived after considering efficiency factor of 1%, as mentioned in the MYT Regulations, 2024. Further, the Petition has considered the impact of wage revision (additional employee expenses with new pay scale of Rs 11.6 Lakh/month) for each year during the control period with appropriate escalation factor. The impact of wage revision during FY 2025-26 is estimated as follows: (per month wage revision impact multiplied by 12 months) plus (1+escalation factor of 4.61%). From FY 2026-27 onwards the wage revision impact of previous year has been escalated by escalation factor of 4.61%. Further during FY 2025-26 the Petitioner has considered the impact of wage revision arrear of Rs 309.61 Lakhs, which is the last installment to be paid for wage revision arrear. Considering all the above the Petitioner has projected the total O&M expenses for the next control period.

Table 37: Projected Normative O&M Expenses for FY 2025-26 to FY 2029-30

(Re Lakh)

Particulars	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
Normative O&M Expenses	3793.16	3968.11	माज्या	4342.59	4542.89
Impact of wage revision	145.64	152/55	mal59.358	2 66:74	174.43
Wage revision arrear	309.61	15	27.0	list I	

Page 126 of 193

MSLDC MYT Perined for FY 2025-26 to FY 2029-30



Particulars	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
Total O&M Expenses	4248.42	4120,47	4310.52	4509.33	4717,31

MSLDC humbly requests the Hon'ble Commission to approve above O&M expenses for the MYT control period. The details of O&M Expenses are provided in Form F-2 and F-2.1of Petition Formats.

Additional Manpower & related working with respect to "Workforce Adequacy Guidelines for Load Despatch Centres"

It is submitted that vide DO Letter No. 22-1306/4/2022-OM dated 25th November 2024, Joint Secretary, Ministry of Power, Govt. of India has issued "Workforce Adequacy Guidelines for Load Despatch Centres".

MSLDC has studied the "Workforce Adequacy Guidelines for Load Despatch Centres" and reviewed the present status of approved and available human resources. There is gap of ~@ 50% in the expected resources to be available with SLDC & ALDC. The details are given below.

Apart from this, there are some functions which are carried out at SLDC and ALDC which are not considered in "Workforce Adequacy Guidelines Report". Further, in "Workforce Adequacy Guidelines Report", there are no specific manpower allocation guidelines regarding Sub-SLDCs.

MSLDC will be approaching to appropriate Authorities for approval of manpower in line with these Workforce Adequacy Guidelines Report and as required for additional functions. This will significantly increase the O&M costs as indicated in this Petition.

So, Hon'ble Commission is requested to allow approaching the Hon'ble Commission separately for additional Manpower & Training Cost Budget after acceptance of "Workforce Adequacy Guidelines for Load Despatch Centres".

7.2.Interest on Working Capital

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019 under Regulation 32 specifies as under for calculation of IoWC:

"32.5 MSLDC

(a) The working capital requirement of the MSLDQ may cover:

MSLDC MYT Petition for FY 2025 30 to FY 2029-30

Page 127 of 193

- (i) Operation and maintenance expenses for one month;
- (ii) One and a half months equivalent of the expected revenue from levy of Annual Pixed Charges approved by the Commission for ensuing year(s).

Provided further that for the purpose of Truing-up for any year, the working capital requirement shall be re-computed on the basis of the values of revised normalive Operation & Maintenance expenses and actual Revenue from sale of electricity excluding incentive, if any, and other components of working capital approved by the Commission in the Truing-up before sharing of gains and losses;

(b) Rate of interest on working capital shall be on normative basis and shall be equal to the Base Rate as on the date on which the Petition for determination of Fees and Charges is filed, plus 150 basis points:

Provided that for the purpose of Truing-up for any year, interest on working capital shall be allowed at a rate equal to the weighted average Base Rate prevailing during the concerned Year plus 150 basis points.:

The Petitioner has considered the aforementioned methodology specified in the MYT Regulations, 2024 for calculation of IoWC. For computing the interest on working capital for future years, MSLDC has considered the interest rate of 10.45%, i.e. current base rate (MCLR) of 8.95% plus 150 basis points (1.5%). The Working Capital and interest computation for MSLDC for FY 2025-26 to FY 2029-30 are shown in the table below:

Table 38: Interest on Working Capital for FY 2025-26 to FY 2029-30

(Rs. Lakh)

						(RS, Laki
SI No	Particulars	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
1.	One month of O & M expenses	345.03	343.37	359.21	375.78	393,11
2	One & half months of receivables	435,40	605.52	884.37	1075.02	1212.94
3.	Total Working Capital Requirement	789.43	948.90	1243.58	1450.80	1606.05
4	Rate of Interest (% p.a.)	10.45%	10.45%	10.45%	10.45%	10.45%
5.	Interest on Working Capital	82.50	99.16	12.9R	151:61	[67.83

Page 128 of 193

MSLD MYT Petition for W 2025-2616 IV 2029-30

The Petitioner humbly requests the Hon'ble Commission to approve Interest on Working Capital as given above. The detailed computation of normative interest on working capital has been given in the Form 6 of Petition Formats.

7.3.RLDC Fees

The Petitioner submits that RLDC Fees and Charges has to be decided as per Central Electricity Regulatory Commission (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2024.

The Petitioner has already projected the RLDC fees and charges for FY 2024-25 in previous chapter which includes payment towards PLI incentive also. For FY 2024-25, the Petitioner has considered present monthly data of RLDC charges along with estimated PLI expenses. Further, CERC has not notified charges for WRLDC as per RLDC Regulations, 2024. So, the Petitioner has considered the FY 2024-25 charges as base and escalate the charges with nominal 5% escalation factor. However, it is humbly submitted that whenever CERC revises the WRLDC fees from FY2024-25 onwards, the impact of the same has to be bear by the Petitioner. The same can be claimed by the Petitioner at the time of True up of respective year. Considering the above, RLDC fees for the five years of the next control period have been projected as given below.

Table 39: RLDC Fees and Charges for FY 2025-26 and FY 2029-30

(Rs. Lakh)

			FY2025-26	FY 2026-27	FY 2027-28	FY2028-29	FY 2029-30
RLDC Charges	Fees	and	909.34	954,81	1002.55	1052.68	1105.31

Accordingly, MSLDC requests the Hon'ble Commission to approve RLDC Fees as proposed above. Also, WRPC charges are not applicable for MSLDC w.c.f. FY 2016-17. MSLDC shall approach the Hon'ble Commission with the actual RLDC charges at the time of Review or Truing up. The details of RLDC Fees are also provided in Form F-7of Petition Formats.

7.4. Capital Expenditure Plan and Capitalization

As per the provisions of the MERC (Approval of Capital Investment Scheme) Regulations 2022 and MERC MYT Regulations 2024, the petitioner has submitted the Capex and Capitalization Plan for

Page 129 of 193

MSLDC MY T Petition for P v 2025-26 to FY 2029-30

the MYT period 2025-26 to FY 2029-20 in previous chapter of this petition. The Capex and Capitalization Plan for the MYT period is proposed considering the future challenges in grid operations and necessity of the various works need to be undertaken to cope up with the challenges. The year-wise capital expenditure and capitalization proposed for the MYT period is summarized in the table given below

Table 40: Projected Capitalization for FY 2025-26 to FY 2029-30

(Rs Lakh)

Sr.No	Particulars	Expenditure	Capitalization
1	FY 2025-26	10736	7495.00
2	FY 2026-27	9537	12517.00
3	FY 2027-28	8790	8060.00
4	FY 2028-29	6065	5315.00
5	FY 2029-30	2222	3822.00

A brief description of individual project/scheme planned during the MYT period along with the purpose/objective and intended benefit from the scheme has been provided in the previous chapter on Capex and Capitalization Plan for MYT period.

The petitioner humbly requests the Hon'ble Commission to approve the Capital Expenditure and Capitalization submitted above for FY 2025-26 to FY 2029-30.

Utilization of LDC fund

As per the directive of Hon'ble Commission with respect to creation and utilization of LDC fund in Case No. 291 of 2019 and in Case No. 233 of 2022, the fund can be used for capitalization. MERC MYT Regulations, 2024 also contain an enabling provision for creation of the LDCD Fund. The Hon'ble Commission had made the following observations:

"5.6.3 The Commission has considered LDCD fund for funding the capitalisation and interest earned on the balance LDCD Fund is passed on to the Beneficiaries as Non-Tariff Income.

5.6.4 Further, as the Commission has not entirely approved the capitalisation proposed by MSLDC in FY 2023-24 and FY 2024-25, the LDCD fund available at the beginning of FY 2023-24 is sufficient to fund the entire capitalisation approved by the Commission for FY 2023-24 and FY 2024-25. The balance LDCD fund is carried forward to the next control period for utilisation as per the guidelines of the Commission."

MSADC MST Petition for FY 2025-20 to FY 2029-30

Further, the relevant Regulation with respect to LDCD fund is reproduced below for reference: "118 LDC Development Fund

118.1 The Commission may permit MSLDC to create and maintain a separate development fund for such purposes and from such sources of income, as the Commission may consider appropriate, on a Petition filed by MSLDC.

118.2 MSLDC shall be entitled to utilise the money available in the LDC development fund for creation of new assets, meeting stipulated equity portion in asset creation, margin money for raising loan from the financial institutions and funding of R&D projects.

118.3 The LDC development fund shall not be utilized for revenue expenditure except to meet the short fall, if any, in the annual charges allowed by the Commission or to meet the contingency expenses which were not foreseen at the time of making the application for fees and charges and are considered necessary for the efficient power system operation. However, such drawals from the said fund shall be recouped from the expenditure allowed by the Commission under the respective heads at the time of truing up.

118.4 MSLDC shall not be entitled to claim Return on Equity, Interest on Loan and Depreciation on account of asset created through the LDC development Fund.

118,5 MSLDC shall maintain separate records of the LDC development fund. MSLDC shall also maintain the year wise utilisation of funds and details of assets created out of it. These records shall be submitted to the Commission during the filing of Truing-up Petition.

118.6 Excess corpus available in the LDC development Fund after utilisation for the purpose of undertaking capital expenditure shall be invested by MSLDC in appropriate instruments with the intent to ensure optimum utilisation of the un-utilised funds.

Pravided that the income earned through these investments will be passed on to the Beneficiaries as part of the Non-Tariff Income.

Provided that in case the excess corpus is not invested by MSLDC in appropriate interestbearing instruments, then the normative interest income, computed at the weighted average Bank Rate, as applicable for the year, shall be included under the non-tariff income of the MSLDC.

118.7 MSLDC shall maintain all necessary accounting records as well as documentary evidence to demonstrate that the investments made, and the interest earned out of these investments are prudent. These records shall be submitted to the Commission during the filing of Truing-up Petition."

MSLDC MYT Petition for FV 2025-26 to FY 2029-30

Following above approach, the capitalization for FY 2025-26 to FY 2029-30 is proposed to be funded from LDCD fund to the extent possible, considering the proposed capitalization and proceeds accumulated in the LDCD fund. As per provisions in the Regulations, the petitioner has not made claim for RoE, interest on Loans and depreciation for the assets funded through LDCD fund. Considering the surplus during truing up of FY 2022-23 & FY 2023-24 and capitalisation during FY 2024-25 and FY 2025-26, the LDCD fund amount at the beginning of FY 2026-27 would be Rs 597.31 Lakhs (Details are given under format F17). Whereas the asset creation projected during FY 2026-27 is amounting to Rs 12017 Lakh, indicating that only partial asset of Rs 597.31 Lakh would be created from the LDCD fund. The remaining asset amounting to Rs. 11419.69 Lakh would be funded through non-LDCD fund and hence depreciation, interest on loan and RoE have been claimed for that part. The broad contour of utilization of the fund as indicated by the Hon'ble Commission is given below:

- This Fund will be utilized by MSLDC for the purpose of funding of the capitalization approved for the period FY 2025-26 to FY 2029-30. In case the fund is not sufficient to meet the approved capitalization, the balance capitalization not funded through the fund will be deemed to be funded through debt and equity in accordance with the provisions of the applicable MYT Regulations.
- In view of the above, the Commission will not consider any addition to the normative loan and equity capital against the proposed capitalization for the period FY 2025-26 to FY2029-30 funded through the LDCD fund.
- Accordingly, MSLDC will not be eligible to claim RoE, interest on Loans and depreciation on account of asset addition envisaged during the period FY 2025-26 to FY 2029-30which is proposed to be funded through the LDCD Fund.
- MSLDC shall maintain separate record of the funds available in the LDCD Fund and its year wise utilization. These records will be submitted to the Commission as part of MSLDC's next Tariff Petition. The amount equivalent to the approved capitalization can be withdrawn from the fund and utilized by MSLDC on issue of the truing up Order for the relevant years.
- Excess corpus available in the LDCD Fund after utilization against approved capitalization
 shall be invested by MSLDC in appropriate instruments with the intent to ensure optimum
 utilization of the un-utilized funds. As suggested by MSLDC, the funds can be invested in
 Fixed Deposit and Flexible Fixed Deposit in Nationalized Bank and the option for investment
 in Government securities would be examined to ensure that the unutilized fund keeps on



- generating optimal income which can be passed on to the beneficiaries.
- The income carned through these investments will be passed on to the Beneficiaries as part
 of the Non-Tariff Income. Considering the above guidelines, the fund utilization and interest
 income from LDCD fund (to be treated under non-tariff income) is given below.

Table 41: LDCD fund for FY 2025-26 and FY 2029-30

(Rs. Lakh)

						(Rs. Lakh
Particulars	Amount allocated to the LDCD fund FY 2024- 25	Amount allocated to the LDCD fund FY 2025- 26	Amount allocated to the LDCD fund FY 2026-27	Amount allocated to the LDCD fund FY2027- 28	Amount allocated to the LDCD fund FY 2028-29	Amount allocated to the LDCD fund FY 2029-30
LDCD fund at the starting of year	9212.88	7588.94	93.94	0.00	0.00	0.00
Utilisation of LDCD Fund	1623.94	7495.00	93.94	0.00		
LDCD fund at the end of year	7588.94	93.94	0.00	0.00	0.00	0.00
Average LDCD fund	8400.91	3841.44	46.97	0.00	0.00	0.00
Interest rate	6.65%	6.65%	6.65%	6.65%	6.65%	6.65%
Income earned on LDCD fund transferred to non-tariff income	558.72	255.48	3.12	0.00	0.00	0.00

The Petitioner has calculated the interest income on the basis of average LDCD fund during the corresponding year, as per approach already adopted by the Hon'ble Commission. The same amount is considered as non-tariff income by the Petitioner. For calculating the interest income, interest rate considered for FY 2025-26 to FY 2029-30 on the basis of weighted average of interest rate available for various fixed deposits schemes of SLDC, has been considered. The petitioner humbly requests the Hon'ble Commission to approve the utilization of LDCD fund as proposed above.

MSLDC humbly requests the Hon'ble Commission to approve the Capital Expenditure and Capitalization submitted above for FY 2025-26 to FY2029-30. As directed by the Commission, funds for capitalization for FY 2025-26 to 2029-30 be oposed to be used from LDCD fund to the extent

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possible.

Utilization of Load Dispatch Center Development Fund and subsequent issues:

MERC MYT Regulations, 2024 prescribed following provisions for creation and utilization of the proceeds from LDCD fund

118.1 The Commission may permit MSLDC to create and maintain a separate development fund for such purposes and from such sources of income, as the Commission may consider appropriate, an a Petition filed by MSLDC.

118.2 MSLDC shall be entitled to utilise the money available in the LDC development fund for creation of new assets, meeting stipulated equity portion in asset creation, margin money for raising loan from the financial institutions and funding of R&D projects.

118,3 The LDC development fund shall not be utilized for revenue expenditure except to meet the short fall, if any, in the annual charges allowed by the Commission or to meet the contingency expenses which were not foreseen at the time of making the application for fees and charges and are considered necessary for the efficient power system operation. However, such drawals from the said fund shall be recouped from the expenditure allowed by the Commission under the respective heads at the time of truing up.

118.4 MSLDC shall not be entitled to claim Return on Equity, Interest on Loan and Depreciation on account of asset created through the LDC Development Fund.

118.5 MSLDC shall maintain separate records of the LDC development fund. MSLDC shall also maintain the year-wise utilisation of funds and details of assets created out of it. These records shall be submitted to the Commission during the filing of Truing-up Petition.

118.6 Excess corpus available in the LDC Development Fund after utilisation for the purpose of undertaking capital expenditure shall be invested by MSLDC in appropriate instruments with the intent to ensure optimum utilisation of the unutilized funds. Provided that the income earned through these investments will be passed on to the Beneficiaries

As part of the Non-Turiff Income.

MSLDC MYT Petition for FY 7025-26 to FY 2029-30

Provided that in case the excess corpus is not invested by MSLDC in appropriate interest-bearing instruments, then the normative interest income, computed at the weighted average Bank Rate, as applicable for the year, shall be included underthe nontariff income of the MSLDC.

118.7 MSLDC shall maintain all necessary accounting records as well as documentary evidence to demonstrate that the investments made and the interest earned out of these investments are prudent. These records shall be submitted to the Commission during the filing of Truing-up Petition."

Problem Statement

The Commission allows MSLDC to recover its Aggregate Revenue Requirement on normative basis consisting of -

- i. Interest on Loan
- ii. Interest on Working capital
- iii. O&M Expenses
- iv. Depreciation
- Return on Equity Base RoE of 14% of equity (30% of cost) is allowed over and above the expenses.

At the time of Annual truing of expenses and revenue based on audited statement of accounts, surplus, if any, is directed to be transferred to LDCD fund. The accumulated proceeds are allowed to be utilized for creating Assets/Infrastructure required for efficient operation of MSLDC.

However, as per provisions under Regulations 118.4 of MERC MYT Regulations, 2024, MSLDC shall not be entitled to claim Return on Equity, Interest on Loan and Depreciation on account of asset created through the LDC development Fund.

Considering the Capex requirement of various type of essential works, various schemes needs to be undertaken during the MYT period. It has been noticed that, the proceeds in the LDCD would be fully utilized by the end of FY 2026-27 and MSLDC will need to borrow money from the market for creating future assets/infrastructure essential for smooth functioning of MSLDC.

Although Regulation 118.2 allows MSLDC to utilize the money available in the LDC



development fund for creation of new assets, meeting stipulated equity portion in asset creation, margin money for raising loan from the financial institutions, it does not allow to claim RoE on the equity infused and no depreciation is allowed on the assets created through capital expenditure from LDCD fund.

It also needs to be noted that the open access charges and rescheduling charges are deducted while calculating surplus. This regulatory mechanism will create revenue gap in the upcoming years resulting in difficulties for servicing of debts and equity investment. Such mechanism will adversely impact the creditworthiness of MSLDC as an independent entity.

Being Government Entity handling the sensitive work of energy accounting, scheduling and dispatch, it may be not prudent for MSLDC to rely on market for raising the funds for creating essential infrastructure/asset.

Against above background, if we examine the norms of utilization of similar fund (LDCD fund) created at Central level for facilitating the NLDC and RLDCs outlined in the CERC (Fees and Charges for Regional Load Despatch Center and related matters) Regulations 2024, it can be noted that norms specified by CERC for utilization of LDCD fund are more beneficial for the stakeholders and ensure adequate proceeds in the LDCD fund all the time.

A brief comparison of norms set for utilization of LDCD fund by MERC and CERC is depicted in the table below:

Sr. No.	Provisions under CERC (Fees and Charges of RLDC) Regulations, 2024	Provisions under MERC MYT Regulations, 2024
1	The Grid-India shall maintain a separate fund called 'Load Despatch Centre Development Fund (LDCD Fund)' for the purposes specified in this Regulations.	118.1 The Commission may permit MSLDC to create and maintain a separate development fund for such purposes and from such sources of income, as the Commission may consider appropriate, on a Petition filed by MSLDC.

Page 136 of 193

MYT Petition for FY 2025-26 to FY 2029-30

2	Input to LDCD Fund	Input to LDCD Fund
	The charges on account of return on equity, interest on loan, depreciation, registration fees, charges for scheduling under T-GNA, and interest earned on LDCD Fund shall be deposited into the LDCD Fund after meeting the statutory tax and Corporate Social Responsibility (CSR) requirements.	The Surplus after true up shall be transferred to LDCD Fund.
3	Utilization of LDCD Fund The RLDC and NLDC shall be entitled to utilize the money deposited in the LDCD Fund for the creation of new assets, loan repayment, servicing of the interest and dividend payment restricted to 15.50% of paid up Capital, meeting equity portion for new assets, margin money for raising loan from the financial institutions, payment towards purchase consideration for acquisition ventures subject to the approval of the Commission.	Utilization of LDCD Fund 118.2 MSLDC shall be entitled to utilise the money available in the LDC development fund for creation of new assets, meeting stipulated equity portion in asset creation, margin money for raising loan from the financial institutions and funding of R&D projects.
4	An asset funded, partly or fully, from the amount taken out from the LDCD fund shall be considered for computation of depreciation as per the rates specified in these	118.4 MSLDC shall not be entitled to claim Return on Equity, Interest on Loan and Depreciation on account of asset created through the LDC

	regulations.	development Fund.
5	Amount taken out from the LDCD fund for funding an asset shall be treated as a normative loan and shall carry the normative rate of interest as a 1-year MCLR of the State Bank of India, as applicable, as on 1st April of the relevant financial year, which shall be deposited back to the LDCD fund.	
6	Grid-India shall submit the amount accumulated in the LDCD Fund along with the breakup of sources from where the funds have been received. The Grid-India shall submit to the Commission at the end of every year, a report, along with an auditor's certificate, on utilization of the LDCD Fund during the previous year.	118.5 MSLDC shall maintain separate records of the LDC development fund, MSLDC shall also maintain the year-wise utilisation of funds and details of assets created out of it. These records shall be submitted to the Commission during the filing of Truing-up Petition.

It can be seen from the above table that under CERC norms, the RLDCs/NLDC is allowed to use the proceeds from LDCD fund for creation of Assets and such amount drawn from the LDCD fund has been treated as loan. As per normal loan, interest on loan, depreciation is allowed on the assets created through LDCD fund. This approach ensure adequate proceeds in LDCD fund all the time.

Way Forward

 The Hon'ble Commission may revisit the norms for utilization of LDCD fund in the interest of MSLDC and other stakeholders. TAR

Page 138 of 193

MSELEC MYL Petition for PY 2025-26 to FY 2029-30

 Hon'ble Commission may suggest alternate remedy as felt appropriate so as to ensure adequate proceeds in LDCD fund, to fund the future infrastructure development work of MSLDC.

7.5.Depreciation

MSLDC has calculated depreciation for FY 2025-26 to FY 2029-30 in accordance with the MERC MYT Regulations, 2024 and based on the projected capitalization during each year of the Control Period. The depreciation for the asset created from LDCD fund has not been considered as per directives of Hon'ble Commission, as mentioned in the guidelines given by the Hon'ble Commission. The methodology to be followed for depreciation estimation has been mentioned in MYT regulations, 2024 and the same is reproduced below.

"28 Depreciation

- 28.1 The Generating Company, Licensee, ESSD, MSLDC and STU shall be permitted to recover depreciation on the value of fixed assets used in their respective businesses, computed in the following manner:
- (a) The approved original cost of the fixed assets shall be the value base for calculation of depreciation: Provided that the depreciation shall be allowed on the entire capitalised amount of the new assets after reducing the approved original cost of the retired or replaced or decapitalised assets.
- (b) Depreciation for the Existing Capital Schemes or Existing Assets shall be calculated annually based on the straight-line method at the rates specified in the Annexure I to these Regulations for the assets of the Generating Company or Licensee or ESSD or MSLDC or STU: Provided that the Generating Company or Licensee or ESSD or MSLDC or STU shall ensure that once the individual asset is depreciated to the extent of seventy percent, remaining depreciable value as on 31st March of the year closing after the period of twelve years from the Commercial Operation Date or the date of assets capitalised shall be spread over the balance Useful Life of the asset including the Extended Life, as provided in this Regulation: Provided further that the Generating Company or Licensee or ESSD or MSLDC or STU shall submit all such details or documentary evidence as may be required, to substantiate the above claims.

Explanation: The term "Existing Capital Schemes" or "Existing Assets" here means the

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MSLDC MYT Petition for FV 2025-26 to FY 2029-30

Capital Schemes or the Assets, including Non-DPR schemes which are commissioned on or before the March 31, 2025 or Assets in-principally approved by the Commission before the notification of these Regulations for the Generating Company or Licensee or MSLDC or STU or ESSD."

(c) Depreciation for the New Capital Schemes or New Assets shall be computed annually based on the straight-line method at the rates specified in the Annexure II to these Regulations for the assets of the Generating Company or Licensee or MSLDC or STU or ESSD:

Provided that the Generating Company or Licensee or MSLDC or STU or ESSD shall ensure that once the individual asset is depreciated to the extent of seventy percent, remaining depreciable value as on 31st March of the year closing after the period of fifteen years from the Commercial Operation Date or the date of assets capitalised shall be spread over the balance Useful Life of the asset including the Extended Life, as provided in this Regulation: Provided further that the Generating Company or ESSD or Licensee or MSLDC or STU shall submit all such details or documentary evidence as may be required, to substantiate the above

Explanation: The term "New Capital Schemes" or "New Assets" here means the Capital Schemes or the Assets, which not covered under Existing Assets.

(d) The salvage value of the asset shall be considered as 10.00%, and depreciation shall be allowed up to the maximum of 90.00% of the allowable capital cost of the asset:

Provided that the Generating Company, ESSD or Licensee or MSLDC or STU shall submit certification from the Statutory Auditor for the capping of depreciation at ninety per cent of the allowable capital cost of the asset:

Provided that the salvage value for IT equipment and software shall be considered as NIL or 0.00% and 100% or entire value of the assets shall be considered depreciable.

- (e) Where the Emission Control System is implemented within the original scope of the generating station and the date of commercial operation of the generating station or unit thereof and the date of operation of the Emission Control System are the same, depreciation of the generating station or unit thereof including the Emission Control System shall be computed in accordance with Clauses (a) to (c) of this Regulation.
- (f) Depreciation of the Emission Control System of an existing or a new generating station or unit thereof where the date of operation of the emission control system is subsequent to the date of commercial operation of the generating station or unit energy, shall be computed annually

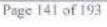
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claims.

from the date of operation of such emission control system based on straight line method, with salvage value of 10%, over a period of—

- (i) twenty-five years, in case the generating station or unit thereof is in operation for fifteen
 years or less as on the date of operation of the emission control system; or
- (ii) balance useful life of the generating station or unit thereof plus fifteen years, in case the generating station or unit thereof is in operation for more than fifteen years as on the date of operation of the emission control system; or
- (iii)ten years or a period mutually agreed by the generating company and the beneficiaries, whichever is higher, in case the generating station or unit thereof has completed its useful life.

 28.2 Land other than the land held under lease and the land for reservoir in case of Hydro Generating Station or Pumped Storage Hydro Project shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the assets.
- 28.3 In case of existing assets, the balance depreciable value as on April 1, 2025, shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to March 31, 2025, from the gross depreciable value of the assets: Provided that depreciation shall be chargeable from the first year of commercial operation.
- 28.4 In case of projected commercial operation of the assets for part of the year, depreciation shall be computed based on the average of opening and closing value of assets.
- 28.5 The depreciation on capital investment schemes undertaken by Generating Companies shall be allowed proportionately corelated to the remaining tenure of the Power Purchase Agreement with the Distribution Licensee.
- 28.6 Depreciation on capital investment schemes shall be computed annually from the date of operation of such capital investment based on straight line method, with salvage value of 10%, over a period of—
- (i) Twenty-five years, in case the principal asset is in operation for fifteen years or less as on the date of operation of the capital investment; or
- (ii) balance useful life of the principal asset plus fifteen years, in case the principal asset is in operation for more than fifteen years as on the date of operation of the capital investment.
- 28.7 Depreciation shall be re-computed for assets capitalised at the time of Truing-up along with the Mid-term Review (in case of Distribution Licensees) or at the end of the Control Period, based on documentary evidence of assets capitalised by the Petitioner, subject to the prudence check of the Commission, such that the depreciation is allowed proportionately from



MSLDC MYT Tollion for FY 2025-26 to FY 2029-30

the date of capitalization

28.8 The Generating Company or Licensee or MSLDC or STU shall submit the depreciation computations separately for assets added upto March 31, 2025 and assets added on or after April 1, 2025."

MSLDC submits that the partial capitalization during FY 2025-26 is funded from LDCD fund for which the depreciation has not claimed. However, depreciation for the asset funded through non-LDCD fund during FY 2025-26 to FY 2029-30 has claimed. During the next control period, the petitioner has considered the depreciation approved by the Commission in MTR order on existing asset for FY 2024-25 as depreciation on existing asset for each year under the control period. The rational for the same is already discussed in the provisional true-up chapter.

The depreciation for asset created post 1st April, 2025 (FY 2025-26 to FY 2029-30) has been calculated in Format 4.1 (N) as per the depreciation rate specified in MYT Regulations 2024. The depreciation from FY 2025-26 to FY 2029-30 has been estimated as shown in Table below:

Table 42: Depreciation Estimated for FY 2025-26 to FY 2029-30

(Rs. Lakh)

Particulars	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
Depreciation	114.13	656.80	1621.36	2342.41	2924.18

The Petitioner requests to approve the projected depreciation as given above. The details of the Fixed Assets and depreciation have been provided in Form F4 of Petition Formats.

7.6.Interest & Financial Charges

For MSLDC, there is no actual loan and loans are normative loan only. The quantum of normative loan is considered as per capitalization discussed above, which are not funded from LDCD fund. For appropriate debt: equity ratio, Regulation 27 of MYT Regulation, 2024 is referred, which is reproduced below:

"27 Deht-equity ratio

27.1 For a capital investment Scheme declared under commercial operation on or after April

1, 2025, debt-equity ratio as on the date of commercial operation shall be 70:30 of the amount

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Page 142 of 193

MSCDC MYT Petition for FY 1925/26 to FY 2029-10

of capital cost approved by the Commission under Regulation 24, after prudence check for determination of Tariff:

Provided that the equity investment to be considered in any year shall not exceed the difference between the sum of cumulative return on equity allowed by the Commission in previous years, efficiency gains and losses, incentives and disincentives, and income earned from investment of return on equity, and the cumulative equity investment approved by the Commission in previous years, unless the Generating Company or ESSD, or Licensee or MSLDC or STU submits documentary evidence for the actual deployment of equity and explain the source of funds for the equity:

Provided further that the Generating Company or Licensee or MSLDC or STU or Energy Storage system Developer shall substantiate such investment of return on equity and income thereon through documentary evidence:

Provided also that if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan for the Generating Company or Licensee or MSLDC or STU or ESSD for determination of Tariff:

Provided also that where equity actually deployed is less than 30% of the capital cost of the capitalised asset, the actual equity shall be considered for determination of Tariff:

Provided also that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

Explanation. The premium, if any, raised by the Generating Company or the Licensee while issuing share capital and investment of internal resources created out of its free reserves, for the funding of the Scheme, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the Generating Station or the transmission system or the distribution system, and are within the ceiling of 30% of capital cost approved by the Commission.

27.2 In case of the Generaling Company or Licensee, if any fixed asset is capitalised on account of capital expenditure Scheme prior to April 1, 2025, the debt-equity ratio allowed by the Commission for determination of Tariff for the period ending March 31, 2025 shall be considered:

Provided that in case of retirement or replacement or de-capitalisation of the assets, the balance equity capital invested in the regulated business approved in accordance with

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MSLDC MYT Petition for FY 2015-26 to FY 2029-30

Page 143 of 193

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Regulation 27.1, shall be deducted from the regulatory equity of the business:

Provided further that in case of retirement or replacement or de-capitalisation of the assets, the debt capital approved as mentioned above, shall be reduced to the extent of outstanding debt component based on documentary evidence, or the outstanding normative loan component, as the case may be, of the original cost of such assets.

27.3 Any expenditure incurred or projected to be incurred on or after April 1, 2025, as may be admitted by the Commission as additional capital expenditure for determination of Tariff, and renovation and modernisation expenditure for life extension, shall be serviced in the manner specified in this Regulation."

The debt requirement for asset not funded through LDCD fund is proposed to be as per debt; equity ratio of 70:30 as given in Regulation 27 of MYT Regulations, 2024. The debt is considered as normative loan as per the above provision. As discussed above, partial funding of asset created during FY 2025-26 and full funding for asset created during FY 2026-27 to FY 2029-30 has been considered from non-LDCD fund. The addition in normative loan in is projected as 70% of capitalization, which is not funded through LDCD fund.

The repayment of Ican and interest on Ican related provisions as given in MYT Regulations, 2024 are shown below.

"30.1 The loans arrived at in the manner indicated in Regulation 27 on the assets put to use shall be considered as gross normative loan for calculation of interest on loan:

Provided that in case of retirement or replacement or de-capitalisation of assets, the loan capital approved as mentioned above, shall be reduced to the extent of outstanding loan component of the original cost of such assets based on documentary evidence.

- 30.2 The normative loan outstanding as on April 1, 2025, shall be worked out by deducting the cumulative repayment as admitted by the Commission up to March 31, 2025, from the gross normative loan.
- 30.3 The loan repayment during each year of the Control Period from FY 2025-26 to FY 2029-30 shall be deemed to be equal to the depreciation allowed for that year.
- 30.4 Notwithstanding any moratorium period availed, the repayment of loan shall be considered from the first year of commercial operation of the Scheme and shall be equal to the annual depreciation allowed.
- 30.5 The rate of interest shall be the weighted average rate of interest computed on the basis of the actual long-term toan portfolio at the beginning of each year.

MSLDC MYT Betition for PY 2025-26 to FY 2029-30



Provided that at the time of Truing-up, the weighted average rate of interest computed on the basis of the actual long-term loan portfolio during the concerned year shall be considered as the rate of interest:

Provided further that if there is no actual long-term loan for a particular year but normative long-term loan is still outstanding, the last available weighted average rate of interest for actual long-term loan shall be considered:

Provided also that if Generating Company or Licensee or MSLDC or STU or ESSD as the case may be, does not have actual long-term loan even in the past, the weighted average rate of interest of its other businesses regulated by the Commission shall be considered:

Provided also that if Generating Company or Licensee or MSLDC or STU or ESSD as the case may be, does not have actual long-term loan, and its other businesses regulated by the Commission also do not have actual long-term loan even in the past, then the weighted average rate of interest of the entity as a whole shall be considered;

Provided also that if the entity as a whole does not have actual long-term loan, then the Base Rate at the beginning of the respective year shall be considered as the rate of interest for the purpose of allowing the interest on the normative loan.

30.6 The Interest on loan shall be computed on the normative average loan of the year by applying the weighted average rate of interest:

Provided that at the time of Truing-up, the normative average loan of the concerned year shall be considered on the basis of the actual asset capitalisation approved by the Commission for the year.

30.7 The above interest computation shall exclude interest on loan amount, normative or otherwise, to the extent of capital cost funded by Consumer Contribution, Deposit Works, Grants or Capital Subsidy, Contingency Reserves."

Considering the above provisions, the yearly depreciation as calculated above, is considered as loan repayment for each year. MSLDC has considered the rate of interest as per rate proposed for FY 2024-25. The Interest expenses for FY 2025-26 to FY 2029-30 are provided in the Table as given below:

Table 43: Interest expenses for FY 2025-26 and FY 2029-30

	THE STANDARD THE CONTRACTOR STANDARD					(Rs. Lakh
Sr. No.	Source of Loan	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
1	Opening Balance of Gross Normative Loan	0	%50	MAR	A STATE OF THE STA	0

Page 145 of 193

MSLDC MYT Petition for FY 2025 20 to FY 2029 30

Sr. No.	Source of Loan	FV 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
2	Cumulative Repayment till the year	0	0	0	0	0
3	Opening Balance of Net Normative Loan	385.68	271.55	8310.89	12331,53	13709.62
4	Less: Reduction of Normative Loan due to retirement or replacement of assets					
5	Addition of Normative Lean due to capitalisation during the year	0.00	8693.78	5642,00	3720.50	2675,40
6	Repayment of Normative loan during the year	114.13	656.80	1621.36	2342.41	2924.18
7	Closing Balance of Net Normative Loan	271.55	8310.89	12331.53	13709.62	13460.84
8	Closing Balance of Gross Normative Loan					
9	Average Balance of Net Normative Loan	328.62	4291,22	10321,21	13020.58	13585.23
10	Weighted average Rate of Interest on setual Loans (%)	9.36%	9.36%	9.36%	9.36%	9.36%
1.1	Interest Expenses	30.76	401.66	966.07	1218.73	1271.58

As mentioned earlier, the for the assets funded through non-LDCD fund, addition in normative loan has been considered. In accordance with the provisions of the MERC MYT Regulations, 2024, the repayment of loan has been considered equivalent to depreciation claimed during the year, as derived above.

The details are given in format F 5. MSLDC requests to approve the projected loan expenses as given above. The details of interest expenses from FY 2025-26 and FY 2029-30 have been provided in Form F5 of MYT Petition Formats.

7.7.Return on Equity

MSLDC has worked out the Return on Equity (RoE) for the next Control Period in accordance with the MERC MYT Regulations, 2024. RoE is based on the projected year-wise equity quantum. Up to FY 2024-25, no new equity has been added as yearly capitalization are assumed to be funded through LDCD fund. Hence, opening equity amount prevailing during FY 2022-23 is continued up to FY 2024-25. Assets capitalized during FY 2025-26 are partially funded into use non-LDCD fund hence equivalent additional equity and return on equity is considered accordingly. FX 2026-27 to FY 2029-

30, assets capitalized are considered to be funded through non LDCD fund and therefore 30% of cost asset has considered as equity addition during each year and return on equity as per the norms have been claimed for FY 2026-27 to FY 2029-30. The provision as given in MYT regulations, 2024 is reproduced below.

"29 Return on Equity

29.1 Return on Equity shall be allowed in two parts viz. Base Return on Equity, and Performance Linked Return on Equity linked with actual performance: Provided that, the Return on Equity allowed at the time of MYT Proceedings shall be inclusive of both Base Return on Equity and Performance Linked Return on Equity:

Provided further that Performance Linked Return on Equity considered at the time of MYT Proceedings is on provisional basis and may undergo change at the time of Trueup based on level of performance on various parameters stipulated in these Regulations:
Provided that return on equity in respect of additional capitalization beyond the original scope, including additional capitalization on account of the emission control system,
Change in Law, and Force Majeure shall be computed at the base rate of one-year marginal cost of lending rate (MCLR) of the State Bank of India plus 350 basis points as on 1st April of the year, subject to a ceiling of 14%:

Provided also that in case the Generation Company or Licensee or MSLDC or STU or ESSD claims Return on Equity at a rate lower than the normative rate specified above for any particular year, then such claim for lower Return on Equity shall be unconditional Provided also that such claim for lower Return on Equity shall be allowed subject to the condition that the reduction in Return on Equity shall be foregone permanently for that year and shall not be allowed to be recouped at the time of Mid-Term Review or true-up as may be applicable.

29.2 Return on Equity at the time of MYT Proceedings

i. Return on equity for the Generating Company having thermal, gas or hydro plants, Transmission Licensee and Distribution Wires Business, shall be allowed on the equity capital determined in accordance with Regulation 27 for the assets put to use, at the rate of 15.50 (base rate – 14 + performance linked - 1.50) per cent per annum in Indian Rupee terms.

ii. Return on equity for Retail Supply Business shall be allowed on the amount of equity capital determined in accordance with Regulation 27 for the pasets put to use, at the rate

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MSLDC MYT Petition for FY 2025-26 to FY 2029-30

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Page 147 of 193

of 17.50 (base rate – 15.50 + performance linked -2.00) per cent per annum in Indian Rupee terms.

iii. Return on equity for Energy Storage System shall be allowed on the amount of equity capital determined in accordance with Regulation 27 for the assets put to use, at the rate of 18.00 (base rate – 16.00 + performance linked -2.00) per cent per annum in Indian Rupee terms.

iv. Return on equity for MSLDC and STU shall be allowed on the amount of equity capital determined in accordance with Regulation 27 for the assets put to use, at the rate of 14.00 per cent per annum in Indian Rupee terms and additionally Performance Linked Incentive shall be allowed subject to the conditions as specified in the Regulation 125 and Regulation 134, respectively."

MSLDC has considered RoE for FY 2025-26 to FY 2029-30 in accordance with the above provisions under the MYT Regulations, 2024. MSLDC has considered RoE at rate of 14% on the opening equity and equity added during the year. The projected RoE for next control period is shown in the table below:

Table 44: Return on Equity for FY 2025-26 and FY 2029-30

(Rs Lakhs)

			20000000	1000000000	
Particulars	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
Return on Equity @14%	177.44	438.33	868.47	1149.35	1341.22

MSLDC humbly requests the Hon'ble Commission to approve above Return on Equity as projected above. The details of the Return on Equity for next Control Period have been provided in Form F 9 of Petition Formats.

7.8.Income Tax

In continuation of MSLDC's submissions regarding Income Tax in the previous chapters, MSLDC has not projected any Income Tax for the compol period TY 2085-26 to FY 2029-30.

7.9. Non-Tariff Income

Regulation 122 of the Maharashtra Electricity Regulatory Commission (Multi Year Tariff)

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Regulations, 2024 specifies provision for non-tariff income for MSLDC. The same is reproduced below.

"122 Non-Tariff Income

122.1 The amount of Non-Tariff Income relating to the MSLDC as approved by the Commission shall be deducted from the Aggregate Revenue Requirement in determining the Fees and Charges of the MSLDC: Provided that the MSLDC shall submit full details of its forecast of Non-Tariff Income to the Commission in such form as may be stipulated by the Commission 122.2 The Non-Tariff Income shall include:

- a) Income from sale of scrap;
- b) Income from investments;
- c) Interest income on advances to suppliers/contractors;
- d) Income from rental from staff quarters;
- e) Income from sale of tender documents;
- f) Any other Non-Tariff Income:

Provided that the interest earned from investments made out of Return on Equity of the MSLDC shall not be included in Non-Tariff Income."

Considering the above provision, average of non-tariff income from the sources other than LDCD fund accrued during FY 2022-23 & FY 2023-24 as per audited accounts has been considered for projecting non-tariff income other than LDCD fund for FY 2025-26 to FY 2029-30. Further, the interest income from LDCD fund for FY 2025-26 is considered as non-tariff income, as considered by the Hon'ble Commission in earlier orders. The details of interest from LDCD fund are already provided under paragraph deals with 'LDCD fund'. The projected non-tariff income is shown in the table below:

Table 45:Projected Non-Tariff Income for FY 2025-26 and FY 2029-30

(Rs. Lakh)

Particulars	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
Non-tariff income excluding interest from LDCD fund	87.01	87.01	87.01 O T	A PA	87.01
Interest from LDCD fund	255.71	3.12	000	0.00	0.00
Total Non tariff	342.49	90.13	87.01	- m.87.01/S	87.01

SUNC. WITH PERMANUSES - 2023-20 to 1 1 2025-20

Income			

The details of the Non-Tariff Income have been provided in Form F10 of Petition Formats. MSLDC humbly requests the Hon'ble Commission to approve above expenses towards Non-Tariff Income.

7.10. Income from Open Access Charges including scheduling

MSLDC has considered income from Open Access Charges including scheduling / rescheduling charges for FY 2025-26 to FY 2029-30 as projected by the Petitioner for FY 2024-25 without any change. The same is given below.

Table 46: Income from Open Access Charges for FY 2025-25 and FY 2029-30

(Rs. Lakhs)

Particulars	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
Income from Open access	581.98	581,98	581.98	581.98	581.98
Income from rescheduling charges	1154.93	1154.93	1154.93	1154.93	1154.93

The details of income from OA charges have been provided in Form F11 of Petition Formats.

MSLDC humbly requests the Hon'ble Commission to approve the same,

7.11. Summary of ARR for Control Period from FY 2025-26 LAFY 2029-30

Based on the above discussion, the projected expenses from FY 2025-26 to FY 2029-30 is summarized in Table below:

Table 47: Summary of Annual Fixed Charges for FY 2025-26 to FY 2029-30

(Rs. Lakh) FY 2025-26 FY 2026-27 FY 2027-28 FY 2028-29 FY 2029-30 Particulars No Operation Maintenance 4248.42 4120.47 4310.52 4509.33 4717.31 Expenses Depreciation Expenses 114.13 656.80 1621.36 2342.41 2924.18 Interest on Loan Capital 401.66 966.07 1218.73 1271.58 30.76 Interest on Working Capital 82.50 99.16 129.95 151.61 167.83

Sr.	Particulars	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
5	RLDC Fees and WRPC Charges	909.34	954.81	1002.55	1052.68	1105.31
6	Reactive Energy Charges paid to Generators/TSUs					
7.	Income Tax					
8	Total Revenue Expenditure	5385.14	6232.90	8030.45	9274.75	10186.21
9	Return on Equity Capital	177.44	438.33	868.47	1149.35	1341.22
10	Total Expenditure for MSLDC	5562.59	6671,23	8898.92	10424.10	11527.44
11	Less: Non-Tariff Income	342.49	90.13	87.01	87.01	87.01
12	Less: Income from Open Access charges	581.98	581.98	581.98	581.98	581.98
13	Less: Income from Rescheduling Charges	1154.93	1154.93	1154.93	1154.93	1154.93
	Gross Annual Fixed Charges for (AFC) MSLDC	3483.18	4844.18	7075.00	8600.18	9703.52



8. Sharing of MSLDC Charges

As per Regulation 123 of MERC Regulations, 2024 the MSLDC Charges payable by the Transmission System Users shall be computed on the basis of base Transmission Capacity Right (TCR) of the beneficiaries. TCR can be calculated as average of Coincident Peak Demand (CPD) and Non-Coincident Peak Demand (NCPD).

In this context, Regulations 123.1 of the MYT Regulations, 2024 is reproduced below:

"The MSLDC Charges payable by the Transmission System Users shall be computed in accordance with the following formula:

 $AFC(u)(t) = AFC(t) X ([Base TCR(u)](t) / \sum [BaseTCR(u)](t))$

Where.

AFC(u)(t) = MSLDC Charges to be shared by the Beneficiary (u) for the Yearly

period(t);

period(t):

AFC(t)

= Total MSLDC Charges to be shared by the Beneficiaries for the Yearly

Base TCR $(u) = |CPD(u)(t)| + NCPD(u)(t)|^{1/2}$

Where.

Base TCR represents the Base Transmission Capacity Right of each Beneficiary (u) for the Yearly period (t);

CPD(u)(t) = Average Coincident Peak Demand of the Beneficiary (u) for the Yearty period(t);

NCPD(u)(t) = Average Non-Coincident Peak Demand of the Beneficiary (u) for the Yearly period(t):

Provided that the Allatted Capacity for long-term Open Access Users, excluding partial long-term Users, shall be considered in lieu of the average monthly CPD and NCPD for calculating the Base TCR for Open Access consumers."

The data for base TCR (i.e. average of CPD & NCPD) for the period from FY 2020-21 to FY 2023-24 is submitted below.

Table 48: Sharing of TCR of past four years by system users

(MW)

Particulars	FY 2020-21	FY 21-22	FY 22-23	FY 23-24
MSEDCL	17700.57	20236.83	21657.68	23299.94
TPCL-D	657.87	10.92	840.77	887.89

Page 152 of 193

MSELIC MY Topention for FM 2025-26 to FY 2029-30

Particulars	FY 2020-21	FY 21-22	FY 22-23	FY 23-24
AEML-D	1217.96	1346.74	1520.32	1620.51
BEST	616.77	698.50	766.74	809.62
Indian Railways (Deemed Distribution Licencees)	232.46	357.75	465.28	476.30
Mindspace Properties (Deemed Distribution Licencees)	6.74	6.81	8.83	9.63
Gigaplex Properties (Deemed Distribution Licencees)	3.09	3.58	4.96	4.76
KRC Infratructure (Deemed Distribution Licencees)	1.68	2.60	4.23	4.84
Nidar Utilities	1.38	2.30	3.33	5.01
MADC	10.28	11.06	12.50	13.54
E ON Phase-1	5.72	5.82	6.88	7.81
E ON Phase-2	2.09	2.44	4.62	5.57
JNPT	0.00	0.41	0.91	1.11
Laxmipati Balaji	0.57	0.57	0.60	0.61
AEML SEEPZ Ltd			47157411	26.93
HADAPSAR SEZ				
MANJARI SEZ				
Total	20457.17	23418.32	25297.64	27174.17

Table 49: Base TCR of past four years

(MW)

Particulars	FY 2020-21	FY 21-22	FY 22-23	FY 23-24
Base TCR	20457,17	23418,32	25297.64	27174.17

The petitioner based on the past year experience has conservatively consider the growth rate of 5% to project the future TCR. The 5% growth rate has been used to project the base TCR during the control period. The projected base TCR for next control period is given below.

Table 50: Projected base TCR for next control period

(MW)

Particulars	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
Base TCR	29959.52	31457.50	11000.37	34681.89	36415.98

As per sharing of base TCR prevailed during FX

024-25, sharing of the same is proposed for next

Page 153 of 193

SLDCMYT Petition for FY 2025-26 to FY 2029-30

control period. The same is given below.

Table 51: Sharing of base TCR

Sr. No.	Transmission System Users	Sharing of base TCR (%)
1	MSEDCL	83.89%
2	TPCL-D	3.68%
3	AEML-D	6.75%
4	BEST	3.29%
5	Indian Railways (Deemed Distribution Licencees)	1.95%
6	Mindspace Properties (Deemed Distribution Licencees)	0.04%
7	Gigaplex Properties (Deemed Distribution Licencees)	0.02%
8	KRC Infratructure (Deemed Distribution Licencees)	0.02%
9	Nidar Utilities	0.04%
10	MADC	0.06%
11	E ON Phase-1	0.04%
12	E ON Phase-2	0.02%
13	JNPT	0.00%
14	Laxmipati Balaji	0.00%
15	AEML SEEPZ Ltd	0.11%
16	HADAPSAR SEZ	0.05%
17	MANJARI SEZ	0.05%

Further Regulation 124.1 of MYT Regulations 2024 provides that:

"The long-term Transmission System Users shall share the MSLDC Charges in the proportion of Adjusted Base Transmission Capacity Rights of each Transmission System User to the total Adjusted Base Transmission Capacity Rights allotted in the intra-State transmission system.

Provided that a Partial Open Access Consumer shall pay the MSLDC Charges to the Distribution Licensee instead of the Transmission Licensee for using a transmission network which shall be passed on to the MSLDC within the stipulated time period as specified under Regulations 14.5 of MERC Distribution Open Access Regulation, 2016 and its amendment thereof.

Provided also that the Distribution Licensee shall submit billed Open Access Donand of

MSLDC MYT Petition for FY 2025-26 to FY 2029-30

Partial Open Access consumers to STU and MSLDC on monthly basis for calculating Adjusted Base Transmission Capacity Rights."

Considering the above sharing of base TCR and ARR proposed, the yearly charges to be paid by the TSUs are given below.

Table 52: Sharing of MSLDC Charges projected for FY 2025-26 to FY 2029-30

(Rs. Lakh)

Sr. No.	Particulars	Ensuing Years					
		FY 2025- 26 Projected	FY 2026- 27 Projected	FY 2027- 28 Projected	FY 2028- 29 Projected	FY 2029- 30 Projected	
1	Annual Fixed Charges (Rs. Lakh)	3483.18	4844.18	7075.00	8600.18	9703.52	
2	Sharing of MSLDC Charges (Rs lakh/year)						
3	MSEDCL	2922.00	4063.73	5935.14	7214.59	8140.17	
4	TPCL-D	128.32	178.46	260.65	316.84	357.48	
5	AEML-D	235.08	326.94	477.49	580.43	654.89	
6	BEST	114.63	159.42	232.83	283.02	319.33	
7	Indian Railways (Deemed Distribution Licencees)	67.92	94:46	137.96	167.70	189.21	
8	Mindspace Properties (Deemed Distribution Licencees)	1.35	1.87	2.74	3.33	3.76	
9	Gigaplex Properties (Deemed Distribution Licencees)	0.66	0.92	1.34	1.63	1.84	
10	KRC Infratructure (Deemed Distribution Licencees)	0.70	0.97	1.41	1.72	1.94	
11	Nidar Utilities	1.22	1.70	2.48	3.02	3.40	
12	MADC	2.02	2.81	4.11	5.00	5.64	
13	E ON Phase-1	1.23	1.72	2.51	3.05	3.44	
14	E ON Phase-2	0.78	1.08	1.58	1.93	2.17	
15	JNPT	0.14	0.19	0.28	0.34	0.38	
16	Laxmipati Balaji	0.08	0.12	0.17	0.21	0.23	
17	AEML SEEPZ Ltd	3.68	5.12	7.48	9.09	10.26	
18	HADAPSAR SEZ	1.66	2.31	3.38	4,11	4.64	
19	MANJARI SEZ	1.70	2.36	3.45	4.19	4.73	
	Total	3483.18	4844.18	7075.00	8600.18	9703.52	

Further, as per the MYT Regulations, 2024 MSLDC Charges per MW per month shall be computed in accordance with the following formula:

Monthly MSLDC Charges (Rs. / MW / Month) = [AFC(v)(t) + ∑[Base 10]

Accordingly, the projected MSLDC Charges works out as under

MSLDC MYT Petition for FY 2025-26 to FY 2025-30

Page 155 of 193

Table 53: Proposed MSLDC Charges for FY 2025-26 to FY 2029-30

(Rs. Lakh)

Monthly MSLDC Charges	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
Total MSLDC Charges (Rs. Lakh)	3483.18	4844.18	7075.00	8600.18	9703.52
Base Transmission Capacity Right (MW)	29959.52	31457.50	33030.37	34681.89	36415.98
Proposed MSLDC charges (Rs /MW/Month)	968.86	1283.26	1784.97	2066.44	2220.53

The detailed computation of sharing of MSLDC charges have been provided in Form F13 of Petition Formats. MSLDC humbly requests the Hon'ble Commission to approve the proposed sharing of MSLDC charges and proposed monthly MSLDC charges for next control period.

Further as per Regulation 37 of MYT Regulations, 2024, Delayed Payment Charge should be calculated on simple interest basis at the Base Rate as on 1st of the respective month plus 350 basis points per annum on the billed amount for the period of delay. Also, as per Regulation 36.1 of MYT Regulations, 2024, in case of payment of bills of MSLDC Fees and Charges within 7 days of presentation of bills, through Letter of Credit or otherwise or through NEFT/RTGS, a rebate of 1% on billed amount, excluding the taxes, cess, duties, etc., shall be allowed. MSLDC requests Hon'ble Commission to consider the 1% rebate in MSLDC charges, while calculating the AFC /ARR of MSLDC.





9. Fees to be charged by MSLDC

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2024 under Regulation 125.1 specifies as under:

"125 Fees to be Charged by MSLDC

- 125.1 The MSLDC shall recover the following Fees as approved by the Commission from time to time:
- a) Registration or Connection Fees per connection from all users connecting to the Intra-State Transmission System;
- b) Scheduling Fees per day for intra-State short-term Open Access transactions;
- c) Re-scheduling Fees for each revision in schedule after the finalization of schedules by the MSLDC on a day-ahead basis or for non-submission of schedule as per State Grid Code requirements;
- d) Short-term Open Access Application Processing Fees;
- e) Any other Fees approved by the Commission from time to time.
- 125.2 The revenue from such Fees shall be considered for adjustment of Annual Fixed Charges in subsequent Years unless the same forms part of the LDC Development Fund."

9.1.Registration or Connection Fees

The Hon'ble Commission in MSLDC MYT Order in Case No. 233 of 2022 has approved Registration or Connection Fees at the rate of Rs. 20,000 per connection for connecting to the intra-state transmission system (InSTS). MSLDC humbly requests the Hon'ble Commission to retain the same fee and allow MSLDC to recover the said fees/charges. The registration charges shall be a one-time fee payable at the time of registration or seeking connection to InSTS. This will be applicable for all generating companies, distribution licensees and transmission open access users.

9.2.Scheduling and Re-Scheduling Fees

MSLDC requests the Hon'ble Commission to retain the Scheduling Fee of Rs. 2250 per day and Re-Scheduling Fees of Rs. 1000 per revision as approved under Case No. 233 of 2022.

9.3. Short Term Open Access Application Processing Fees

MSLDC requests the Hon'ble Commission to retain the Short Jerm Open Access (STOA)
Application Processing Fee of Rs.7500 per application as approved under Osc No. 233 of 2022

MSLDC MYT Petition for FY 2025-20 of FY 2029-30

Page 157 of 193

Renewable Energy Certificate Processing Fees.

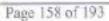
MSLDC requests the Hon'ble Commission to retain the Renewable Energy Certificate Processing. Fee of Rs.1000 per application as approved under Case No. 233 of 2022. MSLDC humbly requests the Hon'ble Commission to allow MSLDC to levy and recover proposed fees and charges for FY 2025-26 to FY 2029-30.

Table 54: Fees for FY 2025-26 to FY 2029-30

Particulars	Existing Fees	Fees proposed in this Petition		
Registration/Connection Fees	Rs. 20,000 Per Connection	Rs. 20,000 Per Connection		
Scheduling Fees	Rs. 2,250 Per Day	Rs. 2,250 Per Day		
Re-Scheduling Fees	Rs. 1,000 Per Revision	Rs. 1,000 Per Revision		
STOA Application processing Fees	Rs.7,500 per Application	Rs.7,500 per Application		
REC Application Processing Fees	Rs 1,000 Per Application	Rs 1,000 Per Application		



MSLDC MYT Petition for FY 2025-26 to FY 2029-30





10. Compliance to Directives

MSLDC submits its compliance to various directives of the Hon'ble Commission under Case No. 233 of 2022.

10.1. Ring-fencing and Autonomy

Directive

The Hon'ble Commission in its MTR order in Case No 171 of 2017 had noted the following:
"The Commission appreciates the initiatives undertaken by MSETCL to accord more autonomy to MSLDC especially in terms of making a separate bank account for SLDC operational; delegation of power of Executive Director to CE, SLDC for higher financial autonomy and autonomy for deputing SLDC staff for training and obtaining prior consent of CE, SLDC for posting or transfer of any SLDC employee. However, it is not clear whether the Commission's comments in this matter have been brought to the notice of the State Government and MSEB Holding Co. Ltd. The Commission expects MSETCL to bring the comments of the Commission in respect of ring-fencing and autonomy of MSLDC to the notice of the State Government and MSEB Holding Co. Ltd. and MSLDC is directed to submit a report on the progress in this matter, every six months, to the Commission."

In the MYT order, in Case No. 291 of 2019, the Hon'ble Commission directed MSETCL to complete the entire process of Ring-fencing and providing complete Autonomy at the earliest. MSLDC was directed to submit a report on the progress in this matter, every six months, to the Commission.

MSLDC Reply

As on date, notification, by State Government w.r.t formation of separate company for SLDC as per section 32 of the EA 2003 is yet to be issued. However, pending such notification, MSETCL has taken several initiatives in order to achieve financial and operational autonomy to MSLDC.

- MSEB HCL vide Resolution No. 790/2018 dated 28,12,2018 has formulated a committee.
- Further MSEB- HCL vide Resolution No. 816/2019 dated 18.06.2019 has accepted the recommendations of the committee and approval of to Board was accorded for the following, viz.
- i. separation of the State Load Desputch Centre (SLDC) from MSETCL on the same lines as formation of Power System Operation Corporation (DOSQCO) and respectation from Power Grid Corporation of India Ltd (PGCIL)
- Creation of a separate representative Board structure for governance of SLDC on lines of a wholly-owned subsidiary for its independent system operation in accordance with the Electricity Act, 2003 and National Electricity Policy

- iii.Creation the post of 'Executive Director' under MSEB Holding Company Limited to head the SLDC after its formation as a separate entity;
- iv Approaching the Government of Maharashtra for obtaining nevessary approvals, sanctions, permission, etc. as may be required for this purpose; and
- v.Eugagement of any legal, financial, accounting, management or other advisors/consultants/Project managers by whatever name called in connection with the subject;
- Subsequent to above activities MSEB-HCL has formulated a committee (vide office order no MSEBHCL / CS/0508/ dated 07.08.209) under Chairmanship the Director (Operations)
 MSETCL for under taking further activities related to MSLDC separation from MSETCL.
- The core group constituted held its meeting on 31st August 2019. The core group had decided
 the following:
 - a. The Chief Engineer (SLDC) to prepare and submit detailed information pertaining to the Establishment of SLDC within three weeks.
 - The Chief Engineer (SLDC) in consultation with Director (Operations) MSETCL to seek approval of the Board of Directors of the MSETCL at the ensuing meeting.
 - c. The Chief Engineer (SLDC) to prepare the terms of reference (ToR) of Consultant / Advisor to be engaged in connection with the Subject; For this purpose, reference may be sought from POSOCO and HPLDC etc.
 - d. The Chief Engineer (SLDC) in consultation with the core group to prepare the draft of proposal to be submitted to the Government of Maharashtra in accordance with the GR No. sha.sa.u. 10.12/pr.kr.28/saa.u dated 08.01.2014
- MSETCL board of directors vide resolution no. 137/32 dated 05.09.2019 has taken note of MSEB- HCL board resolution No. 816/2019 dated 18.06.2019.
- Accordingly, after approval of the Board of MSETCL, a proposal was submitted by MSEB.
 HCL to the Additional Chief Secretary (Energy) on 17.10.2019 for approval of the State.
 Government (Annexure 6). The summary of the letter is given below.
 - a. Transferring the function of State Load Despatch Centre from the Maharashtra State Electricity Transmission Company to the new company so that the provisions of the Electricity Act, 2003 can be implemented properly and in accordance with the Electricity Act, 2003. Also the "Girish Pradhan Committee" constituted by the Ministry of Power, Government of India has also recommendate setting up of prew company for load dispatch centres in its recommendations.

- b. Under Articles 5, 17, 22, 34 etc. of the Memorandum of Association of the Company, various powers have been conferred on the Company regarding creation, implementation, management, supervision, control of new subsidiaries.
- c. Based on the Board of Directors Resolution No. 816/2019, it has been decided to form an independent company and the new company will be a wholly-owned subsidiary of the company. The Board of Directors of MSETCL has also given the consent in this regard.
- d. The newly formed company (Maharashtra State Load Despatch Centre) will be financially independent and will not have any financial investment from the government. Also, the said company will not incur any kind of financial liability to the government.
- e. In reality, the new company will be created by dividing the manpower, infrastructure and related equipment included in the MSETCL. There will be no direct or indirect new investment by the government.
- f. In order to make load dispatch centres financially and technically independent and autonomous and considering the commercial interest of electricity in the state, it is necessary to separate them from MSETCL (STU).

The Petitioner has submitted the present status of activities pertaining to Ring Fencing as given above.

The petitioner shall update the Hon'ble Commission with regard to further progress in this area from time to time, after receiving information from state government.

Further observation of the Hon'ble Commission in MTR order:

It is observed that the process of Ring fencing has not moved ahead at the pace it was expected. Further, the Commission had directed MSLDC to submit a report on the progress in this matter, every six months, to the Commission. However, MSLDC has not complied with this directive on a periodic basis and only submitted the update at the time of filing of the MTR Petition. MSLDC needs to ensure that the directives of the Commission are complied with in a timely manner.

The Commission has noted the response of MSLDC and observes that MSLDC enjoys a certain level of autonomy in the day-to-day operations and the dependency on the parent organisation (MSETCL) is limited to a few elements. However, it is intended that MSLDC achieves complete autonomy as envisaged under the EA 2003. Accordingly, MSLDC is directed to pursue this matter with the competent authorities and submit a report on the progress in this matter, every six months, to the Commission. In the absence of such completines and complete autonomy as envisaged under EA 2003, the Commission is constrained to restrict the additional RoE as per MYT Regulations 2019 as discussed in preceding part of the Order.

Page 161 of 193

MSLDC MYT Petition for FY 2023/26 to FY 2029-30

As evident from the MSLDC submissions, the proposal for ring fencing of MSLDC was submitted by the MSEB Holding Company Limited to Additional Chief Secretary (Energy) on 17.10.2019 for approval of the State Government, however, there are no details of the present status of the matter provided by MSLDC. Accordingly, MSLDC is directed to provide the present status (as on 31 October 2024) of the ring fencing activity as part of the Petition.

Further, the Commission had directed MSLDC to submit a report on the progress in this matter, every six months, to the Commission. MSLDC needs to submit details of the reports submitted every six months as directed by the Commission. In case such reports have not been submitted, MSLDC needs to provide the reason for not complying with the Commission's directive.

10.2. Technology and Operational Systems Upgradation

Directive

The Commission has noted the submissions of MSLDC in respect to technology and Operational System Upgradation. MSLDC was directed to update the Commission and submit the status report every year. MSLDC was directed to strictly follow the timelines specified by the Commission for providing status update.

MSLDC Reply

MSLDC is continuously implementing different initiatives towards continuous technology upgradation and operational system upgradation. MSLDC is a member of various Committees formed under WRPC (where POSOCO is also a member), which includes the SCADA Committee of the Western Region. The SCADA Committee regularly discusses various issues, including the issue of technology upgradation and operation systems required for addressing present and future challenges emerging from market and other developments. Further, MSLDC is also member of URTDSM (Unified Real-time Dynamic State Measurement) scheme of PGCIL and closely associated in its implementation at MSLDC. The interaction with POSOCO at all levels is a continuous process and is going on seamlessly for addressing the day to day operational and long-term enablenges. MSLDC would like to submit specific technology initiatives for meeting the various challenges.

A. SCADA System:

SLDC control center is responsible for the grid management in real time operations; this activity

operator a real time view of the power system with exception/alarms and status of various network elements. Any mishap or failure of the SCADA system in real time operation may lead to improper grid handling & wrong decisions which may impact on technical as well as commercial aspects. Present SCADA System is in operation at SLDC Airoli and ALDC Ambazari since 07th Jan 2013 & its AMC has been extended up to 67th July 2025. The present SCADA system has been in service for more than 7 yrs. As per CERC regulation the service life defined for a SCADA system is 7 years & hence the present SCADA system has lived its service life.

Due to technological advances following limitations are also observed in the present SCADA system:

- a. Hardware support for existing Servers has become critical as software availability of old hardware has become rare. Easy availability of spares of hardware's has become scares. The OEM stopped manufacturing server spares as it is old technology.
- b. Data storage limitations
- c. Multiple user access to SCADA is limited.
- Remote Access to servers through VPN is not possible in Present System.
- e. As user interface is Linux based in present system, it's not user friendly for operators. Graphical User-interface is not handy, comfortable like windows-based system. New Systems with Window based User interface which is more operation friendly are available these days.
- Reports generation as per Operators requirements is not possible
- g. Processing speed is low
- Availability of hardware Spares has become difficult, due to technological up gradations with time

In the view of above, the present SCADA System at SLDC Airoli and ALDC Ambazari is essential to be upgraded & replaced by new SCADA and latest IT security measures with state of art features and functionalities & compatible to large number of MSETCL RTUs /CPP/IPPs which may be integrated in SCADA in near future.

Grid Controller of India (Grid-India) has requested MSLDC to be a part of Unified Load Despatch Center Scheme (ULDC scheme). Under this arrangement Grid-India shall act as consultant for new SCADA for Western region LDC (WRLDC) at no consultancy cost and MSETCL/STUs has to pay the project cost for replacement of MSLDC/RLDCs SCADA system

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discovered through open tendering process by WRLDC. Accordingly, WRLDC has completed tenderization activities and LoT is expected to be be issued by Grid-India soon.

Various advance features as mentioned below are in-built in the proposed SCADA system:

- EMS Functions
 - State Estimator,
 - Contingency Analysis,
 - Transmission Line/Corridor Capability Monitor (TCM) for ATC/ TTC,
 - Automatic Generation Control (AGC),
 - Despatcher Training Simulator (DTS), etc.
- Automatic Demand Management System (ADMS)
- OPC client licenses (SCADA & Historian) To exchange data with external Systems.
- Web Historian and Reporting System (for sharing SCADA reports on Web)
- Advanced Report Development & Generation Software
- Cyber Security features:
 - o VAPT Tool
 - Host based intrusion prevention system (HIPS) with centralised management
 - Centralised Management and Log Analyser of all Firewalls
 - SIEM (Security Information and Event management) helps organizations detect,
 analyze, and respond to security threats before they harm the System

B. Expansion of PMUs in URTDSM:

PMU typically atands for "Phasor Measurement Unit." It's a device used in power systems to measure the electrical waves on an electricity grid. PMUs provide real-time data about voltage, current, and phase angle, which is crucial for monitoring and controlling the stability and efficiency of electrical networks.

Key features of PMUs include:

- Synchronized Measurements: PMUs use GPS satellites for precise time synchronization, allowing for accurate phase angle measurements across wide areas.
- Real-Time Data: They provide real-time data to grid operators, helping them manage
 power flow and detect issues quickly.
- Wide Area Measurement: PMUs can cover large geographic areas, providing insights into the overall health of the electrical grid.
- Fault Detection and Location: PMUs help identify and locate faults in the power

system quickly, facilitating faster response and minimizing outage durations.

- Dynamic Security Assessment: PMUs enable the assessment of dynamic conditions in the grid, assisting operators in making informed decisions to maintain system security during disturbances.
- Integration of Renewable Energy: PMUs support the integration of renewable energy sources by providing the data needed to manage variable generation and maintain grid stability.
- Control and Optimization: The data from PMUs can be used in advanced control
 algorithms to optimize power flow and enhance the efficiency of the grid.
- Research and Development: PMUs are used in academic and industry research to develop new technologies and strategies for power system management.

These applications make PMUs a crucial component in modern smart grid systems, enhancing reliability and efficiency in electricity transmission and distribution.

The data transfer rate for Phasor Measurement Units (PMUs) can vary based on the specific model and its configuration, but typically, PMUs can output data at rates ranging from 10 to 60 samples per second. Some advanced PMUs might offer even higher rates, depending on the application and the needs of the grid.

Presently, there are 21 Nos. of PMUs connected to 5 Nos. of 400 kV Sub-stations under the Unified Real-time Dynamic State Measurements (URTDSM) system. This URTDSM system has been installed by PGCIL and has been handed over to various SLDCs participated in the URTDSM scheme.

Now, for expanding the usage of existing URTDSM, MSLDC has identified critical locations in Mumbai, MMR & rest of the State and requested MSETCL, TPCL & AEML to install PMUs to the tune of around 70 Nos. (MSETCL: 40, TPC: 12 & AEML: 18). Integration of these PMUs in the existing URTDSM system for better utilization of the analytical software will be carried out by MSLDC.

C. Ensuring Cyber prudence:

Following systems of MSLDC has been identified as CII (Critical Information Infrastructure), during Joint evaluation by MSLDC, MSETCL & NCHPC.

Supervisory Control and Data Acquisition (SCADA) System

 Supervisory Control and Data Acquisition (SCADA) System of Renewable Energy Management Centre. (REMC)

- Unified Real Time Dynamic State Measurement (URTDSM) System.
- Web Based Energy Scheduling System (WBES)

The above CHs and the computer resources of its associated dependencies has been notified as a Protected System vide GoM, Gazette notification dated 13 Jan 2023. Post notification of MSLDC OT Systems as Protected System in the GoM gazette, to comply the Information Technology (Information Security Practices and Procedures for Protected Systems) Rules 2018 an Information Security Steering Committee (ISSC) having representative of NCIIPC has been formulated.

- a) Establishment of Open Source Cyber Security Operation Centre (CSOC) at MSLDC
 Airoli
- Open Source C-SOC has been established at MSLDC Airoli by configuring the Open Source SIEM using the ELK for 24x7 SOC operations.
- CSOC is having information security team responsible for monitoring and analysing the security posture of SLDC Maharashtra. The Manpower deployed for Open-Source C-SOC is operating 24x7 and collecting, monitoring, analyzing, investigating and remediating the security incidents related to Cyber Security.
- b) Deployment of the ACDS platform at MSLDC Airoli
- NCIIPC is steering a major Research, Development & Engineering Project, 'AI Powered Adaptive Cyber Defense Framework and Solution for National Critical Information Infrastructure', also termed as ACDS Project, under the aegis of National Security Council Secretariat (NSCS).
- ACDS Solution, comprising of Entity ACDS Platform for deployment in Critical Sector Entities (CSEs) and Central ACDS Platform for deployment at NCIIPC. All the systems are designed to work together to protect and defend the national cyber ecosystem of CIIs.
- ACDS platform has been deployed at MSLDC for strengthening the Security Posture of identified CII of MSLDC.
- c) Cyber Security Audit of MSLDC Airoli
- Cyber Security Audit of the IT & OT system is being done on regular basis. For Cyber Security

 Audit of IT & OT Systems of MSLDC, Scope of Work has been prepared by this office &

 has been vetted by the NCIIPC.
- d) Risk Assessment of the C11 at MSLDC Airoli

A team from NCIIPC visited the MSLDC in June 2023 in order to carry out the Risk Assessment

MSLDC MY Pention for FV 2025-25 to FY 2029-30

of the declared Critical Information Infrastructure i.e. SCADA, URTDSM, REMC, WBES System and its associated dependencies.

The RA activity is helping in assessing the cyber security posture of the MSLDC and guide the MSLDC regarding the way forward in enhancing its resilience against future cyber-attacks.

e) Participation of MSLDC in NCIIPC scheme for crowd sourcing of ethical backers

In crowd sourcing scheme, NCIIPC had talented and trusted ethical hackers / security researchers/ VAPT professionals participating in the 10 to 20 days exercise and conduct VAPT/ ethical hacking on the CII systems in a controlled environment at a time and place of their choice. (They will further help the CIIs in patching the discovered vulnerabilities and cyber security gaps.)

MSLDC participated in NCIIPC scheme for crowd sourcing of ethical backers for Web Based Energy Scheduling Application. Considering the criticality of the application test-bed environment was used for this activity.

D. Alert Messaging System:

The important role of SLDC is to ensure reliable & secure grid operations and maintain healthy grid integrity. As the State power system is large, at any instance of time, there are no of incidences such as tripping, planned/forced outages, sudden changes in demand & RE injection, etc. are taking place in the power system. Hence, System Operator needs to be on alert mode to take remedial measures to maintain grid stable & secure. Further, it is the responsibility of the System Operator to sensitize the stake holders about any adverse system conditions & pass on necessary instructions on which actions are to be taken by the stake holders. Such instructions are to be passed on immediately, hence, automated system is required which can communicate with multiple stake holders as single instance without any time delay.

Due to restricted transmission network in MMR & Mumbai, the Mumbai System had become vulnerable. For smooth & reliable operation of the Mumbai System, MSLDC has developed an Alert Messaging System. Through this system regular alerts along with set of instructions are sent to all the State holders in MMR & Mumbai in case of any adverse situation of the system so that all the stake holders will be sensitized and be ready to avoid any disturbance in the Mumbai System. This system has been developed in-house by MSLDC engineers.

E. RE Scheduling Software Upgradations:

g. Upgradation for RTM transactions:

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Page 167 of 193

MSLDC MYT Petition for FY 1075/26 10 FY 2029-30



Hon'ble CERC vide order dated 17.08.2020 in the Petition No. 25/MP/2019, in respect of introduction of Green Term Ahead Market (G-TAM), has accorded approval for RE transactions through IEX/Px.

In accordance with the said order, RE Generators can sale power outside the State through IEX/Px. Such transactions shall be permitted in Day Ahead & Real Time basis. As the REMC Software was designed & commissioned in year 2019 i.e. before the introduction of the said G-TAM Order, no any provision was available in this respect.

Hence, it was not possible to incorporate transactions being carried out by Intra-State RE generators in RTM. There were no any transactions made by Intra-State RE generators under RTM, as most of the generators were contracted under long term within state. However, newly commissioned generators were exploring possibility for such transactions, hence, to cope up with the requirement well in advance, REMC scheduling software has been upgraded with RTM feature in the month of Sept-2023 and now around 6 no. of transactions are now scheduled in REMC system.

h. Web-based Contract Management:

The No. of RE Generators in the State is very high and is around 1000 Nos. Further, these generators are having multiple generating units having multiple contracts which are having different contract period. On monthly basis, contract information was collected from Distribution Licensees in the State in excel file and the same was updated manually in Master Common Registry. This data was used for scheduling activities. Hence, it was challenging to maintain such large data off-line and carry out scheduling.

Hence, REMC Scheduling system was upgraded with Web-based contract management tool, wherein all the Distribution licensees are updating their contracts against generators and contract information easily maintained & scheduling is carried out smoothly. With such upgradation, contract information updating activities are completed with ease within few minutes and the scheduling activities have become more smooth.

F. Ensuring reliable & secure Grid Operations:

a. Use of Simulation Software:

MSLDC is responsible for secure & reliable grid operations in real time, Maharashtral is the only State in the country having highest state-owned installed capacity, transmission system & to fulfill this function simulation studies are to be carried out as the State, grid is very

complex.

PSSE, or Power System Simulator for Engineering, is a widely used software tool developed by Siemens for modeling, analyzing, and simulating power systems. It is particularly popular among utility companies, consultants, and researchers for various applications. Here are some key features and uses of PSSE:

- Load Flow Analysis: PSSE allows users to perform load flow studies to analyze
 power flow in the network under various operating conditions.
- Dynamic Simulation: The software can simulate dynamic behavior of power systems, including transient stability analysis, to assess how systems respond to disturbances over time.
- Contingency Analysis: Users can evaluate the impact of potential outages or failures in the system to ensure reliability and identify vulnerabilities.
- Short Circuit Analysis: PSSE can perform short circuit studies to determine fault currents and the potential impacts on equipment.
- Renewable Integration: The software supports the modeling of renewable energy sources, helping to analyze their impact on grid stability and performance.
- Optimal Power Flow (OPF): PSSE can be used to optimize generation dispatch and minimize costs while meeting system constraints.
- Data Visualization: It provides various tools for visualizing power system data, making it easier to interpret results and communicate findings.
- Interfacing with Other Tools: PSSE can integrate with other software and tools, allowing for more comprehensive analyses and workflows.

Overall, PSSE is a powerful tool for engineers and analysts working in the field of power systems, providing essential capabilities for ensuring the reliability and efficiency of electrical networks.

PSSE Software is used globally & India to undertake various studies such as Load Flow, Short Circuit, Dynamic simulation, Optimal Power Flow, etc. MSLDC wass having 3 Nos. of such licenses. However, considering complex network, requirement of computation of year ahead TTC-ATC in accordance with the IEGC-2023, requirement of continual review of LTS & islanding schemes, monitoring compliances for RE plants in accordance with the CEA regulations, etc. MSLDC has purchased additional 4 Nos. of Licenses. Now, MSLDC has identified a group of engineers who will be assigned responsibilities to undertake such studies. A detailed training program is being arranged with the help of Ms. Siemens.

G. Operational Feedback Reports:

SLDC is an eye of the State Power System being responsible for real time grid operations. At every instance of the time, SLDC is observing the behavior of the Power System.

a. Annual Operational Feedback Report of RE:

Day by day RE installations are increasing the State. With the commissioning of REMC System, integration & monitoring of RE capacity has become easier. Hence, MSLDC has prepared Annual Operational Report for the year 2022 & 2023 for RE capacity. This report covers various aspects as below:

- Installed RE capacity monitored in REMC
- Forecasting of RE Capacity under REMC
- Scheduling of RE Capacity under REMC
- RE Injection Patterns
- RE Injection Variations
- Accuracy Evaluation of REMC Internal Forecast
- Deviation Comparison SCADA v/s Meter
- Under-Injection (Over-Schedule) Scenario
- Over-Injection (Under-Schedule) Scenario
- FSP-wise Accuracy evaluation
- Accuracy Evaluation of Schodules of QCA
- Under-Injection (Over-Schedule) Scenario
- Over-Injection (Under-Schedule) Scenario
- Combined RE Deviations (MW)
- Impact of RE Deviations at State Periphery
- PSS-Wise Accuracy Evaluation of Schedules of QCA
- QCA-Wise Accuracy Evaluation of Schedules of QCA
- Comparison of accuracies of QCA Schedules & REMC Forecast
- Details of Grid Events (RE)
- Telemetry Status of REMC SCADA
- PSS-wise telemetry status
- Compliance of the CEA Technical Standards Regulations, 2019

Forecasts T A



b. Annual Operational Feedback Report for the State:

MSLDC has prepared Annual Operation Feedback Report for the whole State for CY: 2023. This report covers following aspects:

- Introduction
- Functions of State Load Despatch Centre (SLDC)
- Maharashtra State Load Despatch Centre (MSLDC) & Salient features
- Installed Capacity of Maharashtra
- Generation Installed Capacity
- Sector wise Installed Capacity
- Fuel wise Installed Capacity
- Installed Capacity addition during the year
- Transmission Infrastructure
- Network Addition in during the year
- Demand & Energy Profile of the State
 Demand Profile of MSEDCL
 Demand Profile of Mumbai Area
- Energy Profile of the State
- Resources Mix at different Demands
 State Peak Demand Scenario
 State Demand Resources at 4 cardinal points
- Generation Profile of the State
- Thermal Generation

Injection Patterns

Declared Capacity (DC) of MSPGCL Thermal Generation

Declared Capacity (DC) of Mumbai Thermal Generation

Declared Capacity (DC) of IPP Thermal Generators

Yearly % Availability of Thermal Units

Monthly Availability of Thermal Generators

Non-availability of Thermal Generating units in CY 2023

Coal position in CY 2023

Hydro Generation



Injection Patterns

Non-availability of Hydro Generating units in CY 2023

Koyna Lake level

Gas Generation

Injection Patterns

Non-availability of Gas Generating units in CY 2023

Generation Profile of RE Sources

Wind & Solar Generation

Injection Pattern of Wind Generation

Injection Pattern of Solar Generation

- · Bagasse/Biomass Generation
- Grid Parameters of the State

Frequency Profile

Voltage Profile

- Violations in ISTS Drawl
- System Constraints

Generation Constraints

Low DC & Availability of Thermal Generators

Non-contracted Generation Capacity

Low availability of APM Gas

Generation capacity under long outage

Generator responsible for transmission constraints

· Transmission Constraints in Maharashtra Grid

LTS Operation & ELR

Line Hand tripped due to overloading

'N-1' Non-Compliant Elements

Constraint in evacuation of Solar Generation

Restoration of 400kV Karad - Solapur (PG)

MMR Transmission Constraints

Inter State ATC/TTC Constraint

Line Hand tripped due to overvoltage

Transmission constraints affecting Generation

Nashik TPS Generation constraints





Backing Down of APML (Tiroda) & Koradi-II Generation Koyna water utilization MMR Constraints impacting Mumbai Generation Reactive Power Requirement in Boisar area

- Outage Planning
- Reactive Power Compensation
 Inductive Compensation
 Capacitive Compensation
- Disaster Management
 Black Start Mock Drills Coordination
 Back-up Control Operation through ALDC
- Achievements
- Special Studies carried out at MSLDC
- Award

c. Special Study Report on the Grid due to MSKVY 2.0:

The Govt, of Maharashtra launched the 'Mukhyn Mantri Saur Krushi Vahini Yojana' in June 2017. So far 550 MW of solar generation capacity has been commissioned under this scheme. An extensive study undertaken by the Energy Department, Govt, of Maharashtra with support from various stakeholders identified the key barriers to achieving speed and deployment of distributed solar generation projects and designed a seven-pronged approach under MSKVY2.0. The 'Mission 2025' launched for this purpose aims to increase the speed and scale of project development under MSKVY 2.0. The overarching objective of the Mission 2025 is to deploy necessary solar capacity at speed and scale to enable provision of day time supply to farmers in Maharashtra. The Mission 2025 provides the necessary framework and directions to all stakeholders to provide 7000 MW of solar capacity for daytime supply to farmers.

In accordance with the GR of Govt. of Maharashtra "सीरप्र-२०२३/प्र.क.९५/ऊर्जा-७ दिनोक ०८
मार्च २०२३" studies for identifying system strengthening accds in distribution and transmission network for MSKVY 2.0 are to be undertaken.

SLDC alongwith STU and others carried out following studies in this regard.

Defining formats for identifying strengthening works in distribution network of
 MSEDCL and system strengthening need identification survey.

20/40/33

MSLDC MYT Petition for FY 2023-26 to FY 2029-30

- Defining formats for monitoring of system strengthening works to be carried in distribution network.
- Analysis of 2 Nos. of Solar Projects of capacity 10 MW each commissioned under MSKVY 1.0 Scheme for the period of May-2022 to April-2023;
- Analysis of Generation & Voltage behaviour of 10 Nos. of Solar Projects of capacity 10 MW each commissioned under MSKVY 1.0 Scheme for the period of April-2022 to March-2023.
- Analysis of 41 Nos. of EHV connected Solar Projects in the State for the period of CY:
 2022.
- MSEDCL Demand Resource multiple scenario Analysis for CY: 2022;
 - · Maximum & Minimum Demand scenario for each month.
 - Requirement of Thermal, Hydro & Central Sector generation ramps with Existing Solar Generation and scaled for 5000 MW, 7000 MW & 10000 MW Solar capacity for each demand scenario.
 - · Low AG Demand scenarios during monsoon months.
- Analysis of behaviour of conductors used in 33 kV & 11 kV MSEDCL networks.
- System Studies for Transmission Network requirements for Clusters 1-14. (These studies will be continued as per the upcoming cluster definitions)

The report having detailed analysis and recommendations has been submitted to Govt. of Maharashtra.

H. SCED Pre-pilot study:

SCED stands for Security-Constrained Economic Dispatch. It is an optimization process used in power system operations to determine the most cost-effective generation dispatch while considering various operational constraints. Here are some key aspects of SCED:

Key Features

- Economic Efficiency: SCED aims to minimize the overall cost of electricity generation by determining which power plants should be online and how much they should generate.
- Security Constraints: It incorporates reliability and security constraints, ensuring that the
 dispatch meets system requirements under normal and contingency conditions. This includes
 factors like transmission limits and generation capacity.
- Real-Time Operation: SCED is often used in real time operations to action generation levels based on current demand and system conditions, responding to discussions in

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electricity consumption.

- Integration of Renewable Energy: SCED can account for variable generation from renewable energy sources, helping to optimize their integration into the grid.
- Market Applications: In deregulated electricity markets, SCED plays a crucial role in determining market-clearing prices and ensuring fair competition among generators.

Uses in Power Systems:

- Load Balancing: SCED helps maintain the balance between electricity supply and demand, ensuring that generation meets consumption in real-time.
- Reliability Management: By considering security constraints, SCED helps prevent overloading of transmission lines and ensures that the grid remains stable during peak demand or disturbances.
- Cost Reduction: By optimizing the dispatch of generation resources, SCED contributes to reducing overall operating costs for utilities and consumers.
- Resource Allocation: SCED assists grid operators in efficiently allocating resources across
 multiple generating units, enhancing overall system performance.
- Enhanced Decision-Making: The insights gained from SCED analyses inform operational
 decisions, improving the effectiveness of grid management.

The HLC Committee constituted by Hon*ble MERC in the matter of partial grid disturbance in MMR & Mumbai on 12.10.2020, has recommended to explore possibility of implementation of SCED while dispatching Mumbai embedded generation.

Accordingly, MSLDC has carried out studies and submitted report to Hon'ble MERC considering dispatch of Mumbai embedded generation.

Further, MSLDC has collaborated with IIT-Bombay to undertake pre-pilot studies based on past data for the entire State. MSLDC & IIT-B has jointly carried out studies using GAMS software and carried out comparative analysis between results of SCED & conventional MoD principle. This study has been carried out on the data for month of August-2024. A study report has been prepared and will be submitted to Hon'ble MERC by November 15th. Further, MSLDC is proposing to undertake pilot study of SCED after due approval from the Hon. MERC.

I. Pilot for Integrated Data Platform:

MSLDC is using number of software such as DSM, RDDSM, Data Warehousing, SCADA, URTDSM, etc. All these softwares are operating in parallel and the data is maintained in siles. To carry out any analytics using data from multiple software, in the beextracted and handled manually. Hence, MSLDC is conducting a pilot on AVEVA Playstem.

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The key features of AVEVA PI system are as below:

- Real-Time Data Collection: The system collects and stores real-time data from various sources, including sensors, PLCs, and SCADA systems.
- Data Visualization: It offers advanced visualization tools, allowing users to create
 dashboards and reports that present data in an accessible format.
- Historical Data Analysis: Users can analyze historical data to identify trends, conduct
 performance benchmarking, and improve decision-making.
- Data Integration: The PI System can integrate with other software and systems, enabling seamless data flow across different platforms.
- Event and Alarm Management: The system can track events and alarms, providing
 operators with timely alerts to facilitate quick responses to issues.
- Advanced Analytics: AVEVA Pl supports advanced analytics capabilities, enabling
 users to perform predictive maintenance and optimize operations.
- Cloud and On-Premise Deployment: The system can be deployed in the cloud or on-premises, providing flexibility based on organizational needs.

Uses of this system is for:

- Operational Efficiency: By providing real-time insights, the PI System helps organizations optimize processes and improve operational efficiency.
- Monitoring and Control: It allows for continuous monitoring of critical parameters, enabling proactive control and management of industrial processes.
- Performance Management: Organizations use the PI System to analyze performance metrics, helping them identify areas for improvement and reduce downtime.
- Regulatory Compliance: The system assists in compliance with industry regulations by providing detailed records and documentation of operations.
- Energy Management: In the energy sector, the PI System is used for monitoring grid performance, managing energy consumption, and integrating renewable sources.
- Asset Management: The PI System helps organizations track asset performance and health, facilitating effective maintenance strategies.

During pilot operation, REMC SCADA system, RE Scheduling software DSM Scheduling software & Meter data management system will be integrated and some analytical reports will be developed. With this SLDC plans to enhance its data handling, storing and analytics capabilities.



J. Mock Trial of Back-up Control Centre:

As a Disaster Management Plan, MSLDC has ALDC, Ambazari as a Back-Up Control centre. In case of any contingencies, Grid operations can be managed from ALDC, Ambazari. Even though the plan is already prepared, the mock trials were never carried out hence, any practical difficulties/problems which may arise during actual operation of the were not known. Hence, mock trial was conducted on 13.09.2023 for the first time. During mock trial, all the real time grid operations were carried out from ALDC, Ambazari and main control room at MSLDC, Airoli was only witnessing the operations. The BCC operation was successfully completed. Prior to implementation of the mock trial, detailed review of requirement of the infrastructure was taken and some of the technical requirements were implemented. During review, some technological needs were identified for which remedial measures have been planned.

K. Upgradation of DSM & Scheduling Software:

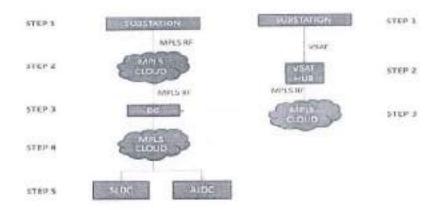
The MERC DSM Regulations, 2019, have been commercially implemented in the State w.e.f. 11.10.2021, during implementation of these regulations, various operational difficulties were identified. A DSM Working Group constituted by Hon'ble MERC discussed these difficulties and submitted analysis report. Further, hon'ble MERC, in its suo motto order dated 02.08.2022 issued various directive to MSLDC for smooth implementation of the DSM regulations. Accordingly, MSLDC has upgraded existing Scheduling & DSM Software based on these directives. The details are as below:

- Replacement of actual generation of RE generators in schedule of corresponding buyers:
 The energy settlement of RE generation is based on actual injection. In this upgradation, the PSS-wise schedule of respective buyers is replaced by actual injection of RE.
- Treatment for actual Hydro generation in schedule of corresponding buyers:
 In this case, the schedule of hydro generation of corresponding buyer is replaced by actual injection.
- Rate for compensation under VSE operation excluding Hydro.
- Replacement of Schedule generation connected at DISCOM substations by Actual RE injection in Schedule of buyers wheeling inter DISCOM RE power.
 There are many 33 kV PSS having RE generation which are constructed by other distribution licensees. Hence, in the DSM software, schedules of RE generation connected to such 33 kV PSS contracted by different discoms is replaced by actual generation.

Revision and Reconciliation of DSM and VSE bills.

L. Establishing Redundancy & Stabilizing Communication Infrastructure:

The earlier data communication architecture was as shown below:



The complete communication link from RTU to Control Centre has multiple hops i.e. from

- RTU to Cloud
- Cloud to DC
- DC to Cloud
- Cloud to SLDC/ALDC

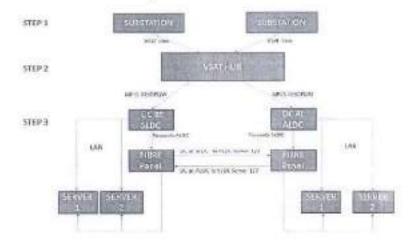
There were multiple technical problems experienced in the communication system as detailed below:

- a) Multiple hops in data communication link from RTU to Control Centre: The complete communication link from RTU to control centre has multiple hops. If there is failure in any link mentioned above, there is failure in data communication of the particular RTU to control centre. Moreover, if a DC link fails i.e. hop from DC to Cloud fails, the data of DC i.e. the data of all the RTUs reporting to control centre through that DC is interrupted.
- b) NO DC Redundancy: In the present architecture, there is no DC redundancy. The data if substations in field send data through a particular DC. If that DDC fails, the data of all the sub-stations reporting through that particular DC gets interrupted.
- The hop in the communication link from DC to ploud for sending data towards control centre has no redundancy. If this link dails, the data of all the substations reporting through that

particular DC gets interrupted.

Apart from above technical problems, there are various other problems experienced in maintaining reliable communication system.

Hence, a new architecture has been implemented as below:



- a) Zonal DCs are located at SLDC and ALDC acting in redendent mode.
 The DC1 of ALDC shall be redundant to DC1 of SLDC & vice versa. The DC2 of ALDC shall be redundant to DC2 of SLDC and vice versa.
- b) 3 Nos. of DCs, each at SLDC & ALDC are kept for integration of IPP data.
- e) 1 No. of DC, each at SLDC & ALDC is kept as spare.
- d) RTU/SAS shall send data to their respective DC located both at SLDC and ALDC. This will create redundancy for DC. The communication method used will be VSAT technology. The RTU will send data through VSAT to VSAT HUB. From the HUB data will be sent to DC at control centre by MPLS RF or fibre, whichever is feasible and possible.
- e) The DC at SLDC report to its local server through LAN as they would be in the same premises which means no communication link such as MPLS RF or VSAT. At the same time DC at SLDC sends data to server of ALDC through MSETCL established OPGW.
- The same architecture is established at ALDC.

Accordingly, MSLDC has integrated all the DCs in SCADA system at SLDC & ALDC.

This up gradation activity has helped in stabilizing communication backbour and also created a data concentrator layer for further data handling by different systems.

M. Redundant Power Supply:

MSLDC is monitoring Grid Operations in real time. To undertake this activity, un-interrupted

availability of real time data & power supply is required to the SCADA system installed at SLDC premises.

To ensure un-interrupted power supply to the decision support systems such as SCADA, URTDSM, etc, UPS system with battery back-up facility is provided. In addition to this UPS system, DG system has been commissioned at MSLDC on 22.08.2022. Thus, in case of complete failure of external power supply, decision support systems will be operated on UPS, which will be backed up through DG system.

Also, the existing batteries were having manufacturing defects which was creating issues in providing back-up. Hence, these batteries were replaced through VRLA batteries in March-2024. As these batteries were in warranty period, the same were replaced without any cost.

N. Operational Displays for PMU & Weather data:

MSLDC Control Room has 4 main screens where real time display of Generation overview, 765 kV & 400 kV Network, Scheduling overview, Mumbai Islanding scheme. There was no provision to display RE Scheduling & variations, Analytical displays of PMU data available in URTDSM project, Weather Data monitoring, etc. As this information is useful in real time grid operations, additional screens were procured and installed in MSLDC Control Room. On these screens RE Schedules & deviations data, Weather data for the State, various analytical displays available in URTDSM has been displayed for decision of system operator.

10.3. Preparedness of SLDC in handling future challenges

Directives

The Hon'ble Commission in its order on Case no 291 of 2019 had directed as follows:

"The Commission has noted the submissions of MSLDC. MSLDC should update the Commission on the aforementioned initiatives on a quarterly basis. Further, MSLDC has filed a Petition recently which is registered as Case No. 59 of 2020 on 25 February, 2020, seeking extension of time to re-compute the Weighted Average System Marginal Price (WASMP) for the period from FY 2011-12 to FY 2017-18 after including the rate of power purchased from the Power Exchange and CPPs and subsequent issuance of bills with revised WASMP as per Order dated 26 September 2019 in Case No 297 of 2018. The Commission will take appropriate view in the said matter. However, MSLDC shall adhere to the timeline of One Year prescribed by the Commission for computation of the Fixed cost Reconculatives (FCR) Pool Volume and FCR Pool Value for the period from FY 2011-12 to FY 2011-18, and issue the final bills for

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Page 180 of 193

settlement of fixed charge reconciliation pool amongst State Pool Participants."

MSLDC's Reply

MSLDC has prepared 10 Point agenda for making MSLDC future ready. The details are as below:

 Upgradation of operation support infrastructure - SCADA, EMS, Decision support system, WAMS, Visibility and communication:

SLDC control center is responsible for the grid management in real time operations; this activity is just like ATC (Air Traffic Control) in the aviation. The SCADA system provides the system operator a real time view of the power system with exception/alarms and status of various network elements. Any mishap or failure of the SCADA system in real time operation may lead to improper grid handling & wrong decisions which may impact on technical as well as commercial aspects. Present SCADA System is in operation at SLDC Airoli and ALDC Ambazari since 07th Jan 2013 & its AMC has been extended up to 07th July 2025. The present SCADA system has been in service for more than 7 yrs. As per CERC regulation the service life defined for a SCADA system is 7 years & hence the present SCADA system has lived its service life.

Due to technological advances following limitations are also observed in the present SCADA system:

- a. Hardware support for existing Servers has become critical as software availability of old hardware has become rare. Easy availability of spares of hardware's has become scares. The OEM stopped manufacturing server spares as it is old technology.
- b. Data storage limitations
- e. Multiple user access to SCADA is limited.
- d. Remote Access to servers through VPN is not possible in Present System.
- e. As user interface is Linux based in present system, it's not user friendly for operators. Graphical User-interface is not handy, comfortable like windows-based system. New Systems with Window based User interface which is more operation friendly are available these days.
- f. Reports generation as per Operators requirements is not possible
- g. Processing speed is low
- h. Availability of hardware Spares has become difficult, the Dicebnological up gradations with time

MSLDC has participated in the Unified Load Despatch Center Scheme (ULDC scheme) which is operated by the Grid Controller of India (Grid-India). Under this arrangement Grid-India

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shall act as consultant for new SCADA for Western region LDC (WRLDC) at no consultancy cost and MSETCL/ STUs has to pay the project cost for replacement of MSLDC/RLDCs SCADA system discovered through open tendering process by WRLDC. Accordingly, WRLDC has completed tenderization activities and LoI will be issued by Grid-India by November-2024.

Various advance features as mentioned below are in-built in the proposed SCADA system:

- EMS Functions
 - State Estimator,
 - Contingency Analysis,
 - Transmission Line/Corridor Capability Monitor (TCM) for ATC/ TTC,
 - Automatic Generation Control (AGC),
 - o Despatcher Training Simulator (DTS), etc.
- Automatic Demand Management System (ADMS)
- OPC client licenses (SCADA & Historian) To exchange data with external Systems.
- Web Historian and Reporting System (for sharing SCADA reports on Web)
- Advanced Report Development & Generation Software
- Cyber Security features:
 - O VAPT Tool
 - Host based intrusion prevention system (HIPS) with centralised management
 - Centralised Management and Log Analyser of all Firewalls
 - SIEM (Security Information and Event management) helps organizations detect, analyse, and respond to security threats before they harm the System.

2) Expanding utilisation of URTDSM system:

PMU typically stands for "Phasor Measurement Unit." It's a device used in power systems to measure the electrical waves on an electricity grid. PMUs provide real-time data about voltage, current, and phase angle, which is crucial for monitoring and controlling the stability and efficiency of electrical networks.

Key features of PMUs include:

- Synchronized Measurements: PMUs use GPS satellites for precise time synchronization, allowing for accurate phase angle measurements across wide areas.
- Real-Time Data: They provide real-time data-to grid operators, helping them manage power flow and detect issues quickly.

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- Wide Area Measurement: PMUs can cover large geographic areas, providing insights
 into the overall health of the electrical grid.
- Fault Detection and Location: PMUs help identify and locate faults in the power system quickly, facilitating faster response and minimizing outage durations.
- Dynamic Security Assessment: PMUs enable the assessment of dynamic conditions in the grid, assisting operators in making informed decisions to maintain system security during disturbances.
- Integration of Renewable Energy: PMUs support the integration of renewable energy sources by providing the data needed to manage variable generation and maintain grid stability.
- Control and Optimization: The data from PMUs can be used in advanced control
 algorithms to optimize power flow and enhance the efficiency of the grid.
- Research and Development: PMUs are used in academic and industry research to develop
 new technologies and strategies for power system management.

These applications make PMUs a crucial component in modern smart grid systems, enhancing reliability and efficiency in electricity transmission and distribution.

The data transfer rate for Phasor Measurement Units (PMUs) can vary based on the specific model and its configuration, but typically, PMUs can output data at rates ranging from 10 to 60 samples per second. Some advanced PMUs might offer even higher rates, depending on the application and the needs of the grid.

Presently, there are 21 Nos. of PMUs connected to 5 Nos. of 400 kV Sub-stations under the Unified Real-time Dynamic State Measurements (URTDSM) system. This URTDSM system has been installed by PGCIL and has been handed over to various SLDCs participated in the URTDSM scheme. Now, MSLDC has identified critical locations in Mumbai, MMR & rest of the State and requested MSETCL, TPCL & AEML to install PMUs to the tune of around 70 Nos. (MSETCL: 40, TPC: 12 & AEML: 18). Further, SLDC will be carrying out integration of these PMUs in the existing URTDSM system.

Hence, MSLDC has targeted to commission above schemes in time so as to improve Operational Excellence.

3) Fully capable backup control center:

As a Disaster Management Plan, MSLDC has ALDC, Ambazari as a Back-Up Control centre. In case of any contingencies, Grid operations can be managed from ALDC, Ambazari. Even though the plan is already prepared, the mock trials were never carried out hence, any practical

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difficulties/problems which may arise during actual operation of the were not known. Hence, mock trial was conducted on 13.09.2023 for the first time. During mock trial, all the real time grid operations were carried out from ALDC, Ambazari and main control room at MSLDC, Airoli was only witnessing the operations. The BCC operation was successfully completed. Prior to implementation of the mock trial, detailed review of requirement of the infrastructure was taken and some of the technical requirements were implemented. During review, some technological needs were identified for which remedial measures have been planned. Hence, MSLDC has proposed to establish fully capable back-up control centre for which following plans have been proposed:

- Back-up REMC System at ALDC, Ambazari.
- Impart training to all the ALDC engineers to undertake real time grid operations for the whole state along with scheduling activities.
- c. Conduct mock trials every year.
- Improving availability of real time data communication at ALDC.

4) Integrated data handling platform:

MSLDC is using number of softwares such as DSM, RE-DSM, Data Warehousing, SCADA, URTDSM, etc. All these softwares are operating in parallel and the data is maintained in silos. To carry out any analytics using data from multiple softwares, it is to be made manually.

The key features of Integrated Data handling platform/Software are as below:

- Real-Time Data Collection: The system collects and stores real-time data from various sources, including sensors, PLCs, and SCADA systems.
- Data Visualization: It offers advanced visualization tools, allowing users to create
 dashboards and reports that present data in an accessible format.
- Historical Data Analysis: Users can analyze historical data to identify trends, conduct performance benchmarking, and improve decision-making.
- Data Integration: The PI System can integrate with other software and systems, enabling seamless data flow across different platforms.
- Event and Alarm Management: The system can track events and alarms, providing operators with timely alerts to facilitate quick responses to issues.
- Advanced Analytics: PI system supports advanced analytics expandities, enabling users
 to perform predictive maintenance and optimize operations.
- Cloud and On-Premise Deployment: The system can be deployed in the cloud or onpremises, providing flexibility based on organizational needs in 11

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Uses of this system is for:

- Operational Efficiency: By providing real-time insights, the PI System helps organizations optimize processes and improve operational efficiency.
- Monitoring and Control: It allows for continuous monitoring of critical parameters, enabling proactive control and management of industrial processes.
- Performance Management: Organizations use the PI System to analyze performance metrics, helping them identify areas for improvement and reduce downtime.
- Regulatory Compliance: The system assists in compliance with industry regulations by providing detailed records and documentation of operations.
- Energy Management: In the energy sector, the PI System is used for monitoring grid
 performance, managing energy consumption, and integrating renewable sources.
- Asset Management: The PI System helps organizations track asset performance and health, facilitating effective maintenance strategies.

Hence, it is proposed to deploy an Integrated data handling software which will be having above capabilities at MSLDC. This will enable MSLDC to improve Operational Excellence, provide in depth analysis of the Grid to Hon'ble MERC, STU & other authorities, more engagement of engineers in analytics by avoiding time consuming data handling activities, etc.

Automatic demand management scheme:

Govt, of Maharashtra has set an ambitious target of installation of around 16GW of Solar generation under MSKVY 2.0 scheme. This solar capacity will be commissioned from 11 kV level to EHV level. With the implementation of this scheme, AG loads will be fed during day time. Apart from this capacity, the RE installations are increasing day by day.

Maharashtra State has large geographical spread over where weather parameters, Crop patterns, electricity user patterns changes are observed. Considering such diversified scenarios, it is important to maintain load-generation balance at every instance to avoid any grid disturbance.

An Automated Demand Management Scheme (ADMS) typically refers to structured programs or systems designed to automatically manage and optimize energy consumption across various sectors. These schemes aim to improve energy efficiency, reduce peak demand, and enhance grid reliability through automation and real-time data analysis.

Key Features of Automated Demand Management Schomes:

 Real-Time Monitoring: Utilizes smart meters and sensors to track energy usage in realtime, allowing for immediate adjustments based on demand and supply conditions.



- Dynamic Pricing: Implements pricing strategies that encourage consumers to reduce or shift their energy usage during peak periods, often through time-based rates or incentives.
- Load Shedding: Automatically reduces or shifts energy consumption from non-essential systems during peak demand times, helping to stabilize the grid.
- Integration with Renewable Energy: Supports the incorporation of renewable energy sources by adjusting demand to match the variability of supply from these sources.
- User Control and Engagement: Offers consumers insights and tools to manage their energy use effectively, promoting participation in demand response initiatives.
- Automated Systems: Includes technologies such as smart thermostats, lighting controls, and HVAC systems that automatically adjust settings based on predefined criteria or utility signals.

Benefits:

- Cost Savings: Consumers can save on energy bills by participating in demand response
 programs and taking advantage of lower rates during off-peak hours.
- Grid Reliability: Reduces the risk of blackouts and enhances the stability of the energy
 grid by balancing demand and supply.

Hence, it is proposed to develop Automated Demand Management Scheme (ADMS) at MSLDC, which will be capable of sensing the need of any demand management and issue signals accordingly to main load-generation balance. The ADMS will be developed as a part of SCADA system and is part of its specifications under the ULDC scheme.

6) Inhouse training / capacity building center:

SLDC during the last 2 years has initiated many inhouse training activities for enhancing the capacity. MSLDC is now proposing a full capacity building centre at SLDC. This centre will continuously carry activities and trainings in different areas of power system for the SLDC teams and other stakeholders. This centre will aim to build expertise in all the areas of power sector operation, regulations, markets, economics data handling, analysis etc.

7) Cyber SOC:

MSLDC has currently established a SOC with open sources tool to handle the cyber security of CII. Further, MSLDC aims to build a full-fledged SOC with state of art tools and technologies for all future cyber security issues.

Operation of an interconnected power system in India is coordinated through the State,
Regional and National Load Despatch Centers in collaboration with the generation and

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transmission control centres. Prompt action by the System Operator during minute-to-minute operation as well as a system emergency is vital for the reliability of power system. In this regard, the regulation 5.1 (h) of the Indian Electricity Grid Code mandates that the control room of the National, Regional and State Load Despatch Centre, power plants, substations of 132 kV and above, and other control centres of all regional entities shall be manned round the clock by qualified and adequately trained personnel. Further, CERC in its order dated 7th May 2008 in suo motu petition 58/2008, endorsed the need for appropriately skilled operators for secure operation of power system in India in the scenario of continuous load growth, system expansion and multiplying number of organizations.

The above subject has also been dealt with in great detail by the committee set up by the Govt. of India under the Chairmanship of Shri. G.B. Pradhan, the then Addl. Secretary, MoP. The committee recommended setting up of a system of Certification of System Operators by an independent Central body. The National Power Training Institute has been entrusted with the responsibility of conducting the certification exams. Thereafter the combined committee for training and certification under the Chairmanship of Shri S. M. Dhiman, the then Member, Central Electricity Authority, suggested three levels of certification viz. 'BASIC LEVEL', 'SPECIALIST LEVEL' and 'MANAGEMENT LEVEL'. It is recommended that the certification authority may conduct the online examination for all the three levels of certification on periodic basis. The System Operator Certificate will have to be renewed after three years and during this period the person will have to attend refresher course of minimum three (3) days every year as part of Continuing Professional Development (CPD).

Further, the Ministry of Power, Govt. of India, has mandated such certification for the officers working in NLDC, RLDCs & SLDCs. Accordingly, 100 % engineers working in SLDC have been certified with 'Basic Level' Certification. Further, % engineers are having 'Specialist Level' certification. As on date, there is no provision available at NPTI for 'Management Level' certification. Hence, it has been proposed to increase the certified experts in MSLDC at various fields such as Reliability, Market Operation, SCADA & Logistics, Cyber Security, RE Integration, etc.

To promote certification at MSLDC, special allowance is being provided to the engineers depending up on type of certification. The allowance for 'Basic Level' ranges from Rs.5000/to 7000/-. If 'Specialist Level' certification is obtained than additional allowance of Rs.2000/is provided. This allowance is given to the certified engineers on monthly basis till the validity of certification. Dist Thans (M.S.)

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9) Creation of sub SLDCs:

Considering the number of substations and lines of different voltage levels in Maharashtra, and increasing RE penetration, the earlier design of only two main control rooms seems inadequate. Hence SLDC is working on proposal for creating additional sub SLDCs in Maharashtra.

10) Strengthening IT infrastructure and processes:

Considering the future challenges of a largely data driven management of the power system, SLDC is planning for different systems for strengthening IT infrastructure. A pilot in this regard is already initiated.

10.4. Reactive Energy Charges

Directives.

The Hon'ble Commission directed MSLDC to implement settlement mechanism as per provisions of State Grid Code. The settlement of the reactive energy was not implemented in the past. In the absence of any recovery mechanism, MSLDC had not received any payments towards these charges. However, the Commission is approving the costs claimed by all the Generators and Licensees in their respective ARRs for the past period, subject to prudence check, it is not proposed to undertake any settlement of the Reactive Energy Pool and the charges for the past period i.e. up to FY 2019-20. As regard applicability of reactive energy charges mechanism for future period, i.e. FY 2020-21 onwards, would be in accordance with the procedure for accounting and settlement of Intra-State reactive energy charges which would be notified separately by the Commission.

MSLDC's Reply

In Case No 291 of 2019, MSLDC has submitted that it has taken up the issue of reactive energy balance and reactive energy pool settlement. Hon'ble MERC notified the "Implementation of Reactive Energy Accounting Framework for Intra-State Hydro Electric Generating Stations in terms of the applicable provisions of the MERC (State Grid Code) Regulations, 2020" on 9 March 2022.

- The Generating Stations were required to inject/absorb the reactive energy into the grid on
 the basis of machine capability as per the directions of MSLDC. Also, as per the Regulation
 70.2 of MYT Regulations 2019, the reactive energy exchange, only if made as per the
 directions of MSLDC for the applicable duration (injection or absorption) shall be
 compensated/levied by the/ to the Generating Station, as specified in the applicable State Grid
 Code Regulations.
- MSLDC, vide its letter dated 23 December 2021 had submitted its preparedness for partial

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MSLDC MY1 Peption for F.V/2025-26 to FV 2029-30

Page 188 of 193

implementation of Reactive Energy Accounting Mechanism for Hydro Generators. Accordingly, MSLDC tested the reactive energy accounting model for the reactive power injected/absorbed by hydro generator. MSPGCL had requested for payment for the above model through the DSM pool. MSLDC on 27 January 2022, had submitted draft procedure and the DSM Working Group discussed with key stakeholders on 31 January 2022.

- The DSM Working Group, further submitted its report on 22 February 2022 providing its
 views on the commencement of Reactive Energy Accounting framework. Based on the
 Commissions directives to introduce the Reactive Energy Accounting in phased manner
 starting from March 22, and starting from the hydro projects, MSLDC had initiated the weekly
 accounting. The payment of reactive energy charges to MSPGCL from DSM pool is also
 initiated by MSLDC and had paid Rs. 730.28 Lakhs till 11.10.2022.
- Further for implementation of 100%-meter data through Automatic Meter Reading (AMR) is underway which will facilitate further recording and billing of reactive energy. Reactive Energy data of 220 nos. non-AMR is not available to MSLDC. MSLDC is further studying the reactive energy compensation requirements and any status on preparedness for operationalize the subsequent phase of Reactive Energy Accounting framework

Directives

MSLDC shall update the Commission regarding the progress made towards operationalisation of the Reactive Energy Account Framework including timelines envisaged for the implementation on a quarterly basis.

MSLDC Response:

The Reactive Energy Account Framework has been operationalized by MSLDC from 31.03.2022 in accordance with the Hon'ble MERC's notification of "Implementation of Reactive Energy Accounting Framework for Intra-State Hydro Electric Generating Stations in terms of the applicable provisions of the MERC (State Grid Code) Regulations, 2020" dt 09.03.2022. The first Reactive bill was issued for the week 14.03.2022 to 20.03.2022 on 31.03.2022. Thereinafter, the weekly Reactive Bills are being regularly issued along with the weekly DSM bills. As on 17.10.2024, the Reactive bill to the week 30.09.2024 to 06.10.2024 has been issued on 15.10.2024.

Page 189 of 193

MSLDC MVT Petition (or HY 2025-26 to FY 2029-30

10.5. Submission of DPRs for new schemes and in-principle approved to lapsed schemes

Directives

MERC observation:

The Commission has noted the submission of MSLDC. Further, MSLDC is directed to follow the guidelines notified by the Commission vide Maharashtra Electricity Regulatory Commission (Approval of Capital Investment Schemes) Regulations, 2022 for capex approvals.

MSLDC's Reply

After the order on Case no 191 of 2019, MSLDC has submitted following new DPRs for fresh approval, the details of which are already covered in previous sections.

- Development of software for scheduling & despatch, deviation settlement and state energy accounting activities
- Automatic fire suppression system with monitoring system for SCADA and various equipment at ALDC

Further, the Petitioner has submitted the DPR for Alert Messaging System. The Petition will submit the remaining DPRs, as projected under future capitalization scheme, in time before implementation of those schemes after preparation of DPRs before the Hon'ble Commission.

For lapsed scheme of Sub-LDCs, the Petitioner has not projected any expenditure up to FY 2024-25. The Petitioner will discuss the matter internally and if any new development happens in between, the Petitioner will surely inform the Hon'ble Commission in this regard. Also, regarding the 'Class I type staff quarter & Guest House, Recreation Hall & Gymnasium' scheme, which was not approved earlier, the Petitioner has projected only capital expenditure in FY 2024-25 (last year in the present control period). The Petitioner is planning to implement scheme step by step depending on the requirement and financial expenses. The DPRs will be prepared and submitted before the Hon'ble Commission before implementation.



11. Prayers

MSLDC respectfully prays the Hon'ble Commission to:

- Admit the MYT Petition in accordance with MERC MYT Regulations, 2024.
- Allow truing-up for FY 2022-23 to FY 2023-24 of Maharashtra State Load Despatch Centre (MSLDC) based on the Audited Accounts and Allocation Statement for the respective financial year, and according to the applicable provisions under MERC (Multi Year Tariff) Regulations, 2019.
- Allow and approve GFA and capitalization in true-up years as per audited account of the Petitioner as per detailed explanation submitted by the Petitioner.
- Allow Provisional true up for FY 2024-25 of MSLDC according to applicable provisions under MERC (Multi Year Tariff) Regulations, 2019.
- Approve O&M expenses as projected by the Petitioner for FY 2025-26 to FY 2029-30 during the next control period including impact of additional salary expenses due to introduction of new pay scale and wage revision arrear.
- Allow to submit the details in future regarding additional cost implication with respect to employee cost for implementation of recommendations as per "Workforce Adequacy Guidelines for Load Despatch Centres" report.
- Approve MSLDC Charges for FY 2025-26 to FY 2029-30 as per MERC MYT Regulations 2024 that would help in recovery of consolidated ARR for respective years of the Control Period.
- Allow MSLDC to use the LDCD fund, as created by the Hon'ble Commission in earlier MYT
 Order and MTR order, for the purpose of financing the capitalization from FY 2022-23
 onwards.
- Request to revisit the norms for utilization of LDCD fund in the interest of MSLDC and other stakeholders and request Hon'ble Commission to suggest alternate remedy as felt appropriate so as to ensure adequate proceeds in LDCD fund, to fund the future infrastructure development work of MSLDC.
- Consider the Key Performance Parameters (KPI) of FY 2022-23 and FY 2023-24 as submitted
 in the present Petition and approve the additional RoE on the basis of the KPI data.
- Allow to submit the KPI data for FY 2024-25 onwards based on actual performance after completion of relevant financial year.
- Continue the various charges i.e., Short term Open Access Application Processing Fees, Registration or Connection Fees, Scheduling Tees Charges and Re-Scheduling Fees,

Page 191 of 193

MSLDC MYT Perition for FY 2025-26 to FY 2029-30

- Renewable Energy Certificate Processing Fees as approved by the Hon'ble Commission in MSLDC MTR Order in Case No. 233 of 2022.
- Approve the SLDC's request for relaxation of certain parameters as sought in the Petition, while approving this Petition.
- 14. Allow the Petitioner to file the mid-term review Petition with other licensees so that the last two years' fees and charges of present control period can be reviewed based on true-up of appropriate years. The same is requested under 'Regulation 149 Power to Relax' of MYT Regulations, 2024.
- Allow the Petitioner for further submission, addition and alteration to this petition as may be necessary from time to time.
- Grant an opportunity in person before Hon*ble Commission during the hearing on the above matter.
- Condone any inadvertent omission/errors/short comings and permit the petitioner to add/change/modify/alter this filing and make future submissions as may be required at a future date.

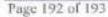
Mr. Shashank S.Jewalika Executive Director MSBDC, Airoli

Place: Airoli, Navi Mumbai

Date: 03/12/2024



MSLDC MYL Petition for F302025-26 to FY 2020-30



List of Annexure;

Annexure I MSLDC	Tariff Petition Formats for submission
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Page 193 of 193

MSCOC MYT Petition for FY 2020-26 to FY 2029-30



VE Final MERC - NVT 2024 Petition Formals - Fasts and Charges 301124 (0) viss

Mehierasters State Load Departs Centre MYT Petition Personts - Fees and Charges for MSLDC

Sr. Na.	Title	Referrnss
-	Annual Flood Charges - Summary Sheet	Form 1
er.	Summary of Operations and Manningance Expetities	Form 2
-	Operation and Malmentaise Expension - Narmative	Farm 2.1
+	Employee Daponics	Form 2.2
96	Administration & General Expenses	Form 3.3
0	Repur & Maintanance Expenses	Farm 2.4
-	Stemmary of Capital Expenditure and Capitalismon	Form 5
100	Capital hyperditure Man.	Form 3.1
2	Capitalisanus Plac	Form 3.2
0.1	Capturi Work-to-Progress	Form 1.1
Ξ	Assts & Daynestrict	Form #
50	Assets & Depreciation - Estimar Schemes (CoD on an before the Murch 31, 2025 or Assets (exprincipally approved. Perfore the ostalization of MERC MYT Regulations 2024)	Form 4.1 (E)
	Assets & Depreciation - New Schemes (not covering undor livining Assets)	Form 4.1 (N)
Ξ	Interest on Coun Creinal	Farm 5
10	Interest an Working Capital	Figur 6
5	RLDC Fresund WRPC Churges	Form ?
2	Пиореля Тах	Form 8
=	Nestra en Regulatory Equity	Rorm 9
63	Sm-tariff langue	Form 10
	Revenue from Transmission System Days and others	Norm II
-	Complident and Non-Concident Post, Demand	Form 12
24	Sharing of MSLDC Change	Form 3
23	Traing Car Summary	Form 14
20	Quantum of Franch Personal Lates State Transmission Loss	Form 15
15	Supremiting Salestone	Rem 16





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Michaelschera State Load Despatch Centre ADT Putition Formats - Fess and Charges for MSLDC Form 2.2: Employee Expenses

A. Expenditure details

		FY 2022-33	FY 2023-24		FY 2024-25	
S.No.	Particulars	April-March (Austred)	April-March (Audited)	Apr-Sep (Actual)	Oct-Mar (Estimated)	April - March (Estimated)
_	Basic Salary	1190.26	1222.23	633.63	The state of the s	
è	Demoses Allawance (DA)	200.97	263.93	328.09		
411	Hause Rent Alfawantar	225.15	224.04	114.84		
	Conveyance Allowance	11.54	11.37	3,58		
in	Leave Travel Allowance	3.54	87.5	134		
i	Estract Loave Encastrant					
1-	Other Allowingers	146,27	15838	101.45		
	Medical Reimbursement	0,49	0.23	0.11		
15	Oversime Payment	0.27	80.0	00'0		
10	Beneaffix-Grade Payments	51.61	31.05	000		
=	Trustim Relief - Wage Revision					
7.0	Saff welfare expenses	0830	0.55	09'6		
. 63	VICE Exponses Romanchment Compensation					
3	Commission to Directors					
41	Training Expenses					
91	Payment under Workmen's Compensation Act	0.00	60'0	10/0		
17	Net Employee Costs	2183.98	2207.12	1194.73		
1.8	Terminal Benefity		100000000000000000000000000000000000000			
18.1	Provident Fund Countibution	187.15	198.75	109.18		
18:2	Provision (or PF Fund		11100000			
18.3	Pension Payments	17.34	16.17	6.70		
1831	Gratuity Payment	0.00	0.00			
10	(H) (H)	Total Control	000000			
310	Grass Employee Expenses	2398.47	2422.65	1310.01		
-	Leex Expensive Cardinless 8 8					
11	Net Employee Expenses	2308.47	567277	1310.61		



Maharashtra State Load Despateh Centre MVT Petilion Permats - Fees and Charges for MSLDC Form 2.2: Employee Expenses

B. Details of number of employees

100		FY 2022-23	FY 2023-24	7.7	FY 2024-25	
200	Perticulars	Apel-March (Audited)	April-March (Audited)	Apr-Sep (Actual)	Oct-May (Estimated)	April - March (Estimated)
×	Officer/Manney tal Cietra					
-		80	80	00	36	10
re	Administrative	=	0	0	6	
×	Account; and finance	36		4	9	
+	Other (Please specify)	tri	7	10	4	
		112	109	100	105	102
90	Stuff Cadre					
n	Technical					
10	Orade 1	40	李	20	17	44
5.2	Grade II	5+	43	444	44	86
5,3	Grade III	0	0	0	· ·	
2.4	Onde EV	**	70	19	0	
		86	8	0.0	88	06
10	Administrativa					
2	Grade 1		-		+	
2	Gende II	0	0	0		0
00	Orade III	80	10	100	100	9
7	Grade IV	F4	**	2	P. P.	*
1		11	6	100	ď.	6
H	Accounts and finance					
3.1	Grade 1	19.	2	-	+	
2	Grade II	27	3	2	61	414
2	Grade III	17	PF1	3	-m	
27	ARTOR IV	0	0	0	0	0
		90	7	9	10	9
	Differs (please specify)					
-1	Gradu	3	**	6	in	100
82	Grade II	+4	-	-	I	
8	100	0	0	0	0	
18.3	Credit IV	0	0	0	0	
4	Torni Employees	112	100	190	200	240

Methoreshtro State Load Despatch Centre MYT Petition Formatz - Fees and Charges for MSLDC Form 2.3: Administration & General Expenses

		EX 2022-23	FY 2023-24		FY 2024-25	
S.No.	Particulars	April-Murch (Andited)	April-March (Audited)	Apr-Sep (Actual)	Oct-Mar (Estimated)	April - March (Estimated)
-	Rent Rates & Taxes	2.13	3.10	1.09		
74	Instrance	10.69	9.25	5.02		
सी	3 Telephone & Postage, etc.	10.09	9.26	10.00		
÷	4 Lugal charges & Audit fee	33.33	10.58	0.41		
Mi	Professional, Consultancy, Technical fee-	67.63	64.84	13.74		
9	6 Conveyance & Travel	8,10	17.51	8.09		
r	7 Electricity charges	340.22	379.93	180,64		
063	8. Water charges	15.51	8.23	10.7		
6	Security arrangements	119.94	132,70	42.85		
10	Fees & subscription	5.03	0.92	100		
11	Buoks & periodicals					
12	Computer Stationery	196.04	199.001	35,80		
13	Printing & Stationery	2.93	2,71	2.09		
4	Advertisements	0.00	00'0	000		
41	Purchase Related Advertisement Expenses	20,51	1977	4.84		
16	Costribution/Departions					
1.	License Fee and other related fee					
8	8 Vehicle Running Expenses Truck / Delivery Van	1.60	6.32	2.02		
5		38.95	9.66	95.9		
20	20 Cost of services brude services					
F	Outstoring of incorring and falling system	170,44	197,79	26.39		
22	Freight On Capifel Equipments 4	00'0	00'0			
13	Vesse, Internet and relined-changes					
24	13	10,20	12.56	1,35,7		
23	25 Bank Changes S	0.38	6.03	10.0		
32	16 Miscellangius Danenses ar	0.03	-19.60	-24.21		
27	27 Millice Expenses	20,162	79.16	18.98		
100	28 Meeting Explosies	4.95	4.90	2.19		
29	29 Grings A & G. Evitshiller	1123.35	1106.13	489.30		
327	Leave expenses commission					
197	A Not A Se Challenger C	1123,351	1106.13	489.30		



Maharashtra State Load Despatch Centre
MYT Petition Formats - Fees and Charges for MSIDC
Form 2.4: Repair & Maintenance Expenses

Particulars April-March April-March			FY 2022-23	FY 2023-24		FV 2624-75	
Plant & Machinery 222.08 278.23 242.82 Buildings Civil Works Civil Works Lines & Cable Networks 0.04 0.77 Lines & Cable Networks 0.04 0.77 Vehicles 7.30 0.06 Purniture & Fixtures 7.30 0.06 Office Equipment 19.75 30.42 2.32 Gross R&M Expenses 249.17 309.42 2.32 Less: Expenses Capitalised 245.94 0.00 Net R&M Expenses 245.94 0.00	S.No.	Particulars	April-March (Audited)	April-March (Audited)	Apr-Sep (Actual)	Oct-Mar (Estimated)	April - March
Buildings Buildings Civil Works Civil Works Hydraulic Works 0.04 Lines & Cable Networks 0.04 Vehicles 0.04 Furniture & Fixtures 7.30 Furniture & Fixtures 7.30 Office Equipment 19.75 Gross R&M Expenses 249.17 Gross R&M Expenses 245.94 Net R&M Expenses 245.94 Office Equipment 245.94	_	Plant & Machinery	222.08	278.23	242.82		
Civil Works Civil Works Hydraulic Works 0.04 0.77 0.81 Lines & Cable Networks 0.04 0.77 0.81 Vehicles 7.30 0.06 2.32 Purriture & Fixtures 19.75 30.42 2.32 Office Equipment 19.75 30.42 2.32 Cross R&M Expenses 249.17 309.42 245.94 0.00 Less: Expenses Capitalised 249.17 309.42 245.94 0.00 Net R&M Expenses 245.94 0.00 0.00	5	Buildings					
Hydraulic Works 0.04 0.77 0.81 Lines & Cable Networks 0.04 0.77 0.81 Vehicles 7.30 0.06 0.06 Furniture & Fixtures 19.75 30.42 2.32 Office Equipment 19.75 30.42 2.32 Gross R&M Expenses 249.17 309.42 245.94 0.00 Less: Expenses Capitalised 249.17 309.42 245.94 0.00 Net R&M Expenses 249.17 309.42 245.94 0.00	3	Civil Works					
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Vehicles 0.04 0.77 0.81 Furniture & Fixtures 7.30 0.00 2.32 Office Equipment 19.75 30.42 2.32 Gross R&M Expenses 249.17 309.42 245.94 0.00 Less Expenses Capitalised 249.17 309.42 245.94 0.00 Net R&M Expenses 249.17 309.42 245.94 0.00	M	Lines & Cable Networks					
Formiture & Fixtures 7.30 0.00 0.00 Office Equipment 19.75 30.42 2.32 Gross R&M Expenses Capitalised 249.17 309.42 245.94 0.00 Net R&M Expenses 249.17 309.42 245.94 0.00	9	Vehicles	0.04	0.77	0.81		
Office Equipment 19.75 30.42 2.32 Gross R&M Expenses 249.17 309.42 245.94 0.00 Less: Expenses Capitalised 249.17 309.42 245.94 0.00	7	Furniture & Fixtures	7.30	0.00			
Gross R&M Expenses 249.17 309.42 245.94 0.00 Less: Expenses Capitalised 249.17 309.42 245.94 0.00 Net R&M Expenses 249.17 309.42 245.94 0.00	00	Office Equipment	19.75	30.42	2.32		
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Less: Expenses Capitalised 249.17 309.42 245.94 0.00	10	Gross R&M Expenses	249.17	309.42	245.94	0.00	
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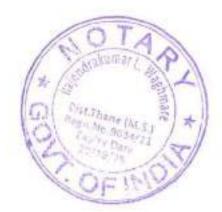
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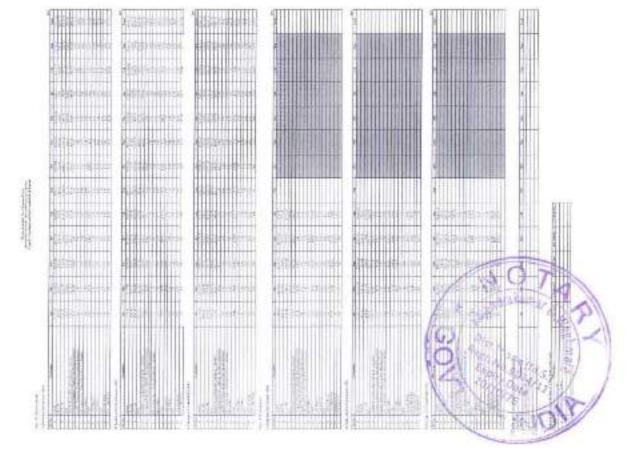
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7	III (R. Frence) MEXISTERS.	261.50	AT STR.	l.				2000
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•	Saturd Received Propositions	4118-35	475.74	432.00				The profits
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*	TeleffOspetitus Ser 1993.00	2746.15	2302	1966T				4237.48
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1	Assessed Franch Charges For 208LDC	THEFT	81818	2540.94				41695
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Mahamahim State Load Despatch Centre NVT Polition Freman - Free and Charges for ABSLIDC Form 17: LDC Bevelapasent Fresh (Projected)

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į.	Participants	Apr-Sep (Actual)	On-More) (Prejectal)	Prejected	Prejected	Prejected	Projected	Projected
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Operering: Table 51 of NTM rather, FY 21-22 fund of the end of the year

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MYT Petition Formats - Fees and Charges for MSLDC Form 18.2: KPIs for MSLDC: Financial Prudence Maharashtra State Load Despatch Centre

(6) Variance in Capex Utilization

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(7) Audit

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(11) Sasecity Building: No. of man-days per year per eligible employee

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