2022

MSLDC Mid-Term Review Petition For Truing up for FY 2019-20 to FY 2021-22, Provisional truing-up for FY 2022-23 and Revised ARR forecast and determination of Fees and Charges For FY 2023-24 to FY 2024-25

Submitted to: Maharashtra Electricity Regulatory Commission, Mumbai

Submitted By

Maharashtra State Load Despatch Centre

(Maharashtra State Electricity Transmission Company Ltd.)

Airoli

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December, 2022

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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 Maintainanace Contract
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CMD	Chairman and Managing Director
CPI	Consumer Price Index
CPI-IW	Consumer Price Index for Industrial Workers
CR. OP	control room operation
CSOC	Cyber Security Operation Center
CSRP	Certified Subrogation Recovery Professional
CWIP	Capital Works In Progress
DA	Dearness allowance
DDC	Direct Digital Controller
DLR	Dynamic Line Rating
DPR	Detailed Project Report
DSM	Deviation Settlement Mechanism
EA	Electricity Act
EPABX	Electronic Private Automatic Branch Exchange
FBSM	Final Balancing and Settlement Mechanism
FCR	Fixed Cost Reconciliation
FDR	Fixed Deposit Receipts
GAMS	General Algebraic Modeling System
G-DAM	Green Day Ahead Market
GFA	Gross Fixed Asset
G-TAM	Green Term Ahead Market
HLC	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	Merit 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
SAS RTU	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 Despatch 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 (Maharashtra Electricity Regulatory Commission (MERC)), the relevant steps have been taken for separation of MSLDC, the relevant details are provided in the Directive chapter.

For the third control period, Hon'ble Commission (Maharashtra Electricity Regulatory Commission (MERC)) notified the MERC (Multi Year Tariff) Regulations 2015 (the MYT Regulations 2015) on 8 December, 2015 in exercise of the powers conferred by Section 181read with Sections 36, 39, 40, 41, 51, 61, 62, 64, 65 and Section 86 of the Electricity Act, 2003. These Regulations are applicable for Control Period from 1 April, 2016 to 31 March, 2020. In accordance with the provisions of the MYT Regulations, 2011, 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.

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, 2019 (the MYT Regulations 2019) on 1 August 2019. As per scope of these Regulations, Hon'ble Commission shall determine the ARR, Tariff and Fees and Charges, including terms and conditions thereof, in accordance with these Regulation for all matters for which the Hon'ble Commission has jurisdiction under EA, 2003, including MSLDC Fees and Charges. The control period of the MYT Regulations 2019 is five years' period, i.e. from April 1, 2020 to March 31, 2025, according to Regulations 2.1 (22) of the MYT Regulations 2019.

In accordance with Regulations 5.1(a) of the MYT Regulations 2019, the MYT Petition should contain the following:

i) Truing-up for FY 2017-18 and FY 2018-19 to be carried out under the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2015;
ii) Provisional Truing-up for FY 2019-20 to be carried out under the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2015;
iii) Aggregate Revenue Requirement for each year of the Control Period (FY 2020-2021 to FY 2024-2025);
iv) 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 Control Period under these Regulations.

The Petitioner filed the MYT Petition for ARR and determination of charges for FY 2020-2021 to FY 2024-2025 along with true-up for relevant years. The Hon'ble Commission approved the MYT petition through its order dated 30 March 2020 (Case No 291 of 2019).

As per Regulations 5.1(b) of the MYT Regulations 2019, the Petition for mid-term review should be filed by the Petitioner with true-up, provisional true-up and revised ARR and fees and charges. Therefore, in accordance with Regulations 5.1(b) of the MYT Regulations, 2019, MSLDC is filing present Petition for:

- Approval of Truing-up for FY 2019-20 to FY 2021-22;
- Approval of Provisional Truing-up for FY 20222-23; and
- Approval of revised ARR forecast for FY 2023-24 to FY 2024-2025 and Determination of Fees and Charges for the same period.

MSLDC is filing this detailed MTR Petition for remaining period of fourth Control Period, before the Hon'ble Commission and has made all efforts to provide the necessary data.

This Petition has following Chapters:

- **Section 1** presents the background of filing the Petition.
- **Section 2** elaborates the Approach.
- **Section 3** deal with Truing-up for FY 2019-20 and **Section 4** deals with Truing-up for FY 2020-21 and FY 2021-22.
- **Section 5** presents the estimation of Provisional Truing-up for FY 2022-23.
- **Section 6** describes the key performance of MSLDC during the fourth control period.
- **Section 7** provides revised ARR forecast for FY 2023-24 to FY 2024-2025.
- **Section 8** deals with sharing of MSLDC Charges for the same period.
- **Section 9** detailed 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.

2. Approach for the filing the MYT Petition

The present filing for the truing-up for FY 2019-20 is based on applicable provisions of the MERC (Multi Year Tariff) Regulations, 2015 (the MYT Regulations, 2015). However, the true-up for FY 2020-21 and FY 2021-22 is prepared on the basis of the provisions given in the MERC (Multi Year Tariff) Regulations, 2019 (the MYT Regulations, 2019). The same Regulations have been referred for presenting the provisional truing-up for FY 2022-23. Also, the revised ARR forecast for the remaining period of the control period (FY 2023-2024 to FY 2024-2025) is prepared on the basis of the provisions given in the MERC MYT Regulations, 2019. The truing- up for FY 2019-20 and FY 2021-22 is based on audited account of MSLDC, of the said financial years. Actual gain/loss on account of controllable factor, as per provisions of the MYT Regulations, 2015 and 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 2022-23 and projected data for remaining period of the financial year.

For the purpose of forecasting the ARR components over the remaining two years of the present control period, the relevant provisions under the MYT Regulations, 2019 as well as the directives and approach considered by Hon'ble Commission in its earlier orders (MSLDC MYT Order dated 22 July 2016, MSLDC MTR Order dated 12 September 2018, MSLDC MYT Order in Case No. 291 of 2019 for fourth control period) were referred. Considering all the factors, the yearly revenue gap/surplus for the remaining two years 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 2019-20 to FY 2024-25) 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 2019-2020

3.1.Common Approach for Truing-up

The truing-up exercise for FY 2019-20 to FY 2021-22 is based on Audited trial balance (TB) and Allocation Statement prepared for FY 2019-20 to FY 2021-22 on the basis of audited TB. The audited balance sheets along with the Allocation Statements prepared for FY 2019-20 to FY 2021-22 are attached for ready reference with this Petition as **Annexure – 2.** However, for FY 2021-22, the information is prepared on provisional basis, the same will be submitted after finalization and signing by relevant authorizes.

According to Regulations 5.1 (c) of the MYT Regulations, 2015, truing-up for FY 2019-20 has to be carried out. Regulations 5.2 of the MYT Regulations, 2015 indicates the requirement of audited accounting statement along with Petition. The relevant excerpts are given below:

"The Petitioner shall submit separate audited Accounting Statements along with the Petition for determination of Tariff or Fees and Charges and Truing-up under these Regulations"

Therefore, following the above provision, MSLDC humbly seeks final truing-up of all components for FY 2019-20 as per the Audited Accounts/principles laid down in the Multi Year Tariff Regulation, 2015 on MSLDC's various heads of expenditure and revenue. Further, as per the provisions given in MYT Regulations, 2015, the truing-up for FY 2019-20 has been prepared based on the relevant provisions of MYT Regulations, 2015.

MSLDC has provided detailed rationale, considering the applicable Regulations, for truing up and key issues in the subsequent paragraphs.

3.2.Operation & Maintenance Expenses

As per the definition of Operations and Maintenance Expenses (O&M Expenses), O&M includes expenditure on manpower, repairs, spares, consumables, insurance and overheads. So, O&M Expenses consist of following expenditure heads:

a. Employee Expenses
b. Administration and General Expenses
c. Repairs and Maintenance Expenses

The detailed submission on the above expenses and the rationale for the expenses has been discussed in details in the following paragraphs.

Employee Expenses

The employee expenses have been considered as per the Audited Account for FY 2019-20. Various components of employee expenses are given in details in the form 2.2 of petition format submitted as **Annexure- 1.** As per the method followed in MTR order (Case No 171 of 2017) and MYT order (Case No 291 of 2019), the training expenses (G/L 422070) reflected in the Trial Balance has been considered as part of A&G expenses. The expenses related to employees which are not mentioned separately under employees expenses have been clubbed as other/miscellaneous expenses under employee expenses. It is to be noted that the revised salary with new pay scale was paid from Oct 2019. The information on possibility of revision of pay scale was already submitted in MYT Petition and the same was recognized by the Hon'ble Commission in Case No 291 of 2019. The revised salary as per the new pay scale and payment of wage arrears for past periods (first installment during FY 19-20) was reflected in the employee expenses for FY 2019-20.

The employee expenses approved by the Hon'ble Commission in MYT order (Case No. 291 of 2019) and actual employee expenses incurred by MSLDC as per audited statement of account are shown in table below:

Table 1: Employee Expenses for FY 2019-20

(Rs. Lakh)

Particulars	Approved in MYT order (Case No 291 of 2019)	Actual
Employee Expenses	1567.35 + 237.96 (wage revision) = 1805.31	1711.25

The actual employee expenses for FY 2019-20 is Rs. 1711.25 Lakh as per the audited accounts, which are marginally lower than approved expenses as per MYT order. The actual employee expenses include expenses for both Airoli and Ambazari centers. Due to revision of pay scale, existing DA is merged with basic pay and revised basic pay (after revision) is significantly higher than existing basic pay (before revision). Correspondingly, revised DA (after revision) reduced significantly from its existing level (before revision).

The actual employee expenses have varied in FY 2019-20 (12% increase) as compared to the actual expenditure for the FY 2018-19. Due to pay fixation HRA has been calculated on new basic. Similarly, on the same ground, Conveyance Allowance is increased. Also in FY 2018-2019, working strength (Employee Count) was 111 and in FY 2019-20 working strength (Employee Count) is 116; so, there is increase the Conveyance Allowance figure. Because of Pay-revision all allowances has been increased. As per Circular no. 90, who has applied Leave Encashment for Block Year 2020-2022 has been stopped for pandemic year (Covid-19). In case of Employee share to EPS, up to FY 18-19, this was included in G/L 424010. In FY 19-20, separately new G/L for EPS was introduced.

MSLDC humbly requests the Hon'ble Commission to approve the employee expenses as claimed in this Petition. The details of Employees Expenses provided in Form 2.2 of Petition Formats, annexed as Annexure 1.

Administrative and General Expenses

The Administrative and General Expenses (A&G) includes the following major heads:

- Rent, Rates and Taxes;
- Insurance;
- Revenue Stamp Expenses, Telephone, Postage &Telegrams;
- Legal Charges;
- Technical Fees, Consultancy and Other Professional Charges;
- Conveyance and Travel;
- Electricity charges;
- Vehicle Running Expenses i.e., Petrol and Oil & Vehicle Hiring Expenses;
- Security/Service Charges Paid to Outside Agencies for safety &protection;
- IT and Communication related expenses
- Other Charges:
    - Fee and Subscriptions - Books and Periodicals
    - Printing and Stationery
    - Advertisement Expenses
    - Water Charges
    - Upkeep of Office Premises
    - Miscellaneous Expenses

The actual A&G Expenses for FY 2019-20 as per audited accounts are Rs. 785.30 Lakh as against Rs. 542.67 Lakh approved by the Hon’ble Commission. The major components are electricity charges, security charges, vehicle hiring expenses, outsource personnel salary and office expenses. The increase in A&G expenses with respect to that of approved in MYT order is due to increase in electricity expenses, cost of service procured & computer stationary and increase in deployment of security guard. The expenses towards computer stationary has been increased due to the increase of cost of AMC services. The outsourced person salary component was also significant. The outsource personnel related details, as per purchase order (P.O.), are given below.

Table 2: Outsource related details for FY 2019-20

(Rs Lakh)

Sr no	Vendor name (PO No)	Outsource			ITI	
		Contract Period	Total no of Employees	PO Amount	Total no of Employees	PO Amount
1	Avadh Corporation (8100004664)	01.11.2018 To 31.10.2019			6	1149754
2	Quick Staffing Services (8100005726)	01.04.2019 To 31.03.2020	7	1306969		
3	Rohit Enterprises (8100005724)	01.04.2019 To 31.03.2020	7	1306969		
4	Rohit Enterprises (3100038317)	01.07.2019 To 31.03.2020	7	1216125		
5	Jadhav Enterprises (8100006737 & 8000003275)	01.11.2019 To 31.10.2020			6	1224205
				3830063		**2373959**

The difference between the MYT approved A&G cost and actual expenses as per audited accounts may be approved by the Hon'ble Commission. MSLDC request the Hon'ble Commission to approve A&G expenses for FY 2019-20 based on actual expenses.

There has been a 31% increase in the A&G expenses in FY 2019-20 as compared to the previous year. Legal charges increased due to payment to lawyers for various court cases. Under consultancy charges, fees towards Technical Advisor was included. For the purpose to give wide publicity to various tenders in the newspaper, there is increase in advertisements. MSLDC being an apex body from Grid Operation, various authorities from Stat Govt, Central Govt, GENCO, DISCOM, TRANSCO and private sector visits SLDC for Grid related issues. For that purpose the expenditure increase on meetings, conferences. Muncipal council, wadi Building Tax for 2009 to 2019 Paid by Ambazari in F.Y 2018-2019. It means 10 years arrears of tax is paid in 2018-19. However in 19-20 only current year tax is paid. So, there is reduction in taxes for FY 2019-20.

The A&G Expense approved by the Hon'ble Commission in Case No. 291 of 2019 and actual A&G expenses incurred by MSLDC shown in Table below.

Table 3: A&G Expense for FY 2019-20

(Rs. Lakh)

Particulars	Approved in MYT order (Case No 291 of 2019)	Actual
A&G Expenses	542.67	785.30

As explained above in employees expenses head, expenses for training has been considered as part of A&G expenses. Thus, to this extent, A&G Expenses claimed under Petition are higher than that appearing in Audited Allocation Statement.

The details of Administrative and General Expenses provided in Form F 2.3 of Petition Formats, annexed as **Annexure 1**.

Repairs and Maintenance Expenditure

The actual R&M Expenses for FY 2019-20 as per the Audited Accounts are Rs.178.78 Lakh as against Rs. 207.5 Lakh approved in Case No. 291 of 2019 by the Hon'ble Commission.

The R&M Expense approved by the Hon'ble Commission in Case No. 191 of 2019 and actual R&M expenses incurred by MSLDC shown in the following Table:

Table 4: R&M Expense for FY 2019-20

(Rs. Lakh)

Particulars	Approved in MYT order (Case No 291 of 2019)	Actual
R&M Expenses	207.5	178.78

The details of Repair and Maintenance Expenditure are provided in Form F 2.4 of Petition Formats.

The R&M expenses can be claimed under the following items:

- Plant & Machinery
- Buildings
- Civil Works
- Hydraulic Works
- Lines & Cable Networks
- Vehicles
- Furniture & Fixtures
- Office Equipment

The R&M expenses as reflected in the audited statement have been claimed in truing up purpose. Details of R&M expenses for are given in Annexure 3.

Total O&M expenses

Considering the above three expenses, the total Operation and Maintenance (O&M) expenses approved by the Hon'ble Commission for FY 2019-20 in Case No. 291 of 2019 and the actual expenses incurred by MSLDC as per Audited Accounts are summarized in Table as below:

Table 5: O&M Expenses for FY 2019-20

(Rs. Lakh)

Particulars	Approved in MYT order (Case No 291 of 2019)	Actual
Employees Expenses	1805.31	1711.25
A&G Expenses	542.67	785.30
R&M Expenses	207.50	178.78
O&M Expenses	**2555.48**	**2675.33**

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2015 under Regulation 8.4 (a) specifies as under:

"8.4 ……

(a) the approved aggregate gain or loss to the Generating Company or Licensee or MSLDC on account of controllable factors for the Years 2015-16 and 2016-17 and provisional Truing-up for the Year 2017-18, and the amount of such gains or such losses that may be shared in accordance with Regulation 11;"

Further, as per Regulation 9 and Regulation 11 of the MYT Regulations, 2015, variation in O&M expense corresponding to approved value is categorized as controllable expenses and hence sharing is required. However, the Hon'ble Commission had issued the MYT (First Amendment) Regulations, 2017 on 29 November, 2017 whereby the provisions related to calculation of normative O&M expenses for MSLDC were amended as follows:

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

93.2 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, 2016, excluding abnormal expenses, if any, subject to prudence check by the Commission, and shall be considered as the Base Year Operation and Maintenance expenses."

Based on the above, in Case No 291 of 2019, the Hon'ble Commission had recomputed the normative expenses and gain/ loss was decided accordingly. The Petitioner has followed the same approach and normative expenses for FY 2019-20 is derived based on approved normative expenses for FY 2018-19 and WPI/CPI data. Also, the normative expenses have been compared with actual expenses without wage revision arrear; the wage revision arrear amount is added after sharing of gain/ loss to obtain the final entitlement of the Petitioner. Thus, impact of sharing of gains/loss has been considered on this account for FY 2019-20 and the same is presented in the following table.

Table 6: Sharing of Gains and Loss on account of O&M Expenses for FY 2019-20

(Rs. Lakh)

Particulars		Amount
O&M Expenses normative for FY 2019-20	(a)	2399.376
Actual O&M expense without wage revision arrear	(b)	2585.996
Total Gain/(Loss) on account of controllable factors	(c)= (a)-(b)	(186.619)
Sharing proposed (two-third to be absorbed by MSLDC)	(d)	(124.413)
Entitlement to MSLDC without wage revision	(b) + (d)	2461.58
Total Entitlement to MSLDC after wage revision		2550.91

3.3. Interest on Working Capital

The expense towards interest on working capital (IoWC) has been calculated as per the provisions under MERC MYT Regulations 2015 and the subsequent amendment made to these regulations dated 29 November 2017. Regulations 31.5 of the MYT Regulations, 2015 specifies following methodology for computation of interest on working capital.

"31.5 MSLDC:—

(a) The working capital requirement of the MSLDC shall cover—

(i) Operation and maintenance expenses for one month;

(ii) One and a half month equivalent of the expected revenue from levy of Annual Fixed Charges:

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 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.*

31.6 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 Beneficiary or consumer as the case may be, in accordance with Regulation 11 :"

MERC MYT Regulations 2015, as amended on 29 November 2017, specifies the **Base Rate as one-year marginal cost of funds – based lending rate (MCLR),** declared by the State Bank of India. The methodology as specified above has been considered for calculation of Interest on Working Capital (IoWC) for FY 2019-20. The normative O&M expense as derived under true-up for FY 2019-20 has been considered. For computing receivables, revenue net of rebate is considered.

As per Regulations 31.5 of MYT Regulations, 2015, 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. Further, it was clarified by the Hon'ble Commission that base rate would be one-year MCLR. The data of one-year MCLR for FY 2019-20 is considered by the Petitioner and the weighted average MCLR is determined as 8.16%. The Petitioner has considered the interest rate as 9.66% for truing up of FY 2019-20. Details are given in Format F6.

The Interest on Working Capital approved by the Hon'ble Commission for FY 2019-20 and normative interest on Working Capital as claimed by the petitioner is shown in Table below:

Table 7: Interest on Working Capital for FY 2019-20

(Rs. Lakh)

Particulars	Approved in MYT order (Case No 291 of 2019)	Actual
Interest on Working Capital	54.98	54.30

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. The Hon'ble Commission in Case No. 291 of 2019 opined that as no actual IoWC has been paid, the entire amount would be considered as efficiency gain and would be shared as per Regulation 11 of MYT Regulations, 2015. So, the entire Rs. 54.30 Lakh gain is proposed to be shared as per Regulation 11 of the MYT Regulations, 2015. Therefore, Rs. 36.02 Lakh (two-third of IoWC) as shown in table below is proposed to be shared as efficiency gain.

Table 8: Net entitlement of Interest on Working Capital for FY 2019-20

(Rs. Lakh)

Particular	Estimated	Efficiency gain	Shared with beneficiary	Net entitlement
Interest on Working Capital	54.98	54.30	36.20	18.10

3.4.RLDC Fees and Western Region Power Committee (WRPC) Charges

The charges towards RLDC Fees are being paid by MSEDCL against the invoices raised by RLDC to MSEDCL. After payment, MSEDCL claims that charges from MSLDC and the same are being paid by MSLDC to MSEDCL. The Central Electricity Regulatory Commission (CERC) has issued an Order in Case No. 241/TT/2015, dated 26thDecember, 2016 approving Fees and Charges of WRLDC for the FY 2014-15 to FY 2018-19. Further, under subsection (4) of section 28 of Electricity Act, 2003 and Regulation 10 of the Central Electricity Regulatory Commission (Fee and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2019, CERC has determined the WRLDC Charges for the control period 01.04.2019-31.03.2024 in Petition No.400/MP/2019 (order dated 09.06.2021)

RLDC Fees considered during FY 2019-20, is Rs. 498.59 Lakh as against Rs. 782.14 Lakh approved in Case No. 291 of 2019. The payments towards RLDC fees is accounted by the Petitioner under Fees & subscription (G/L 440010), which is part of A&G expenses. After deducting RLDC payment from Fees & subscription, remaining Fees & subscription amount is considered under A&G expenses, as reflected in Format 2.3. The RLDC fees are Rs.96.31 Lakh for April to June'19, Rs. 152.32 Lakh for July to September'19 and Rs. 249.96 Lakh for remaining six months' period.

It is to be mentioned that for RLDC fees of April'19 to September '19 period, the Petitioner has not paid the RLDC fees amount and adjusted the same against amount credited by WRLDC to MSEDCL in accordance with true-up of WRLDC for FY 2009-10 to FY 2013-14 period. The amount was already deducted by the Hon'ble Commission while finalizing the FY 2016-17 truing-up order of MSLDC. This amount was deducted as per CERC order issued on 14.3.2016 for truing-up of WRLDC for FY 2009-10 to FY 2013-14 period (the direction for refund was issued by CERC vide its order dated 16.4.2015). However, the Petitioner has considered the said amount (first six months RLDC fees) as expenses during FY 2019-20, (although adjusted as per audited account and not actually paid), as the same amount was deducted earlier by the Hon'ble Commission during FY 2016-17 truing-up.

The detailed TB entries of Fees & subscription (G/L 440010) for FY 2019-20 to FY 2021-22 (true-up period) is attached as (**Annexure- 4**).

The actual payment made on account of RLDC Fees during FY 2019-20 was as follows:

Table 9: RLDC Fee for FY 2019-20

(Rs. Lakh)

Particulars	Approved in MYT order (Case No 291 of 2019)	Actual
RLDC Fees	782.14	498.59

Accordingly, the Petitioner requests the Hon'ble Commission to approve RLDC Fees for FY 2019-20 as given above. The details of RLDC Fees are also provided in Form F 7of Petition Formats.

3.5.Capital Expenditure and Capitalization

MSLDC in its MYT Petition in Case No. 291 of 2019 projected a capitalization of Rs. 1048.36 Lakh for FY 2019-20 on provisional basis. The Hon'ble Commission had approved capitalization of Rs. 1012.36 Lakh for FY 2019-20 in the provisional true-up. However, the actual capitalization for FY 2019-20 as per audited account is Rs. 531.24 Lakh. The capital expenditure for the same period is Rs. 473.42 Lakh. The actual capitalization and the breakup of actual capitalization in terms of DPR and Non-DPR schemes is as shown in the Table below:

Table 10: Capitalization for FY 2019-20

(Rs. Lakh)

Sr. No.	Project Title	Actual Capitalization
	DPR Schemes	
1	S/I/T/C of Hardware IT, Firewall server	138.35
	Non-DPR Schemes	
1	S/I/T/C of BARCO LED based display wall	95.13
2	RTU & DC for SLDC Airoli	44.48
3	RTU & DC for ALDC Ambazari	56.34
4	S/I/T/C of automatic fire suppression	32.07
5	Development of online web based scheduling software	16.90
6	S&I of lead acid GEL VRLA battery system	56.71
7	S/I/T/C hardware, software licence for MERC Reg. RE & FBSM	58.71
8	General asset / infrastructure development	32.55
Total Capitalization		**531.24**

MSLDC humbly submits that actual Capitalization in FY 2019-20 is lower than the Capitalization approved by the Hon'ble Commission in Order in Case No. 291 of 2019. The reduction in capitalization as compared to approved figure in FY 2019-20 is attributable to delayed capitalization towards two DPR schemes (80 RTU and DSM scheme), which got capitalized in the subsequent years. Seven non-DPR schemes which have been completed and capitalized during the year are a) BARCO LED based display wall, b) RTU & DC for SLDC, c) RTU & DC for ALDC, d) automatic fire suppression, e) online web based scheduling software, f) lead acid GEL VRLA battery system, g) hardware, software licence for MERC Reg RE & FBSM, and h) infrastructure development (various assets). As regards capitalization towards non-DPR schemes, MSLDC would like to humbly submit that the schemes capitalized within MSLDC are mostly of low value schemes (less than Rs. 100 Lakhs), and includes capitalization of items procured on an intermittent basis. MSLDC humbly requests the Hon'ble Commission to allow the actual capitalization of Rs. 531.24 Lakh for FY 2019-20. The Petitioner has attached the project wise work completion reports (WCRs) along with scheme-wise capitalization as (Annexure-5).

The details of the Capital Works in Progress (CWIP), actual Capital Expenditure and Capitalization for FY 2019-20 are provided in Form F 3.3 of the Petition Formats, submitted along with this filing.

3.6.Depreciation

The Hon'ble Commission has mentioned the following in MYT order (Case No. 291 of 2019) with regard to capitalization:

"The addition to GFA for FY 2019-20 is not considered for computation of depreciation as the capitalization during FY 2019-20 is considered to be funded from LDCD Fund."

The Hon'ble Commission has considered capitalization from LDCD fund from FY 2018-19 onwards. So, depreciation is available on asset capitalized up to FY 2017-18. Afterwards, no depreciation is available for asset capitalized from FY 2018-19 onwards. Hence, Gross Fixed Asset (GFA), as on 01.04.2018 (starting of FY 2018-19), as submitted by the Petitioner in MYT Petition is considered. Depreciation for FY 2019-20 has been computed considering the actual depreciation rates derived on the basis of gross fixed assets (GFA) as on 01.04.2017 and GFA added during FY 2017-18. For example, the depreciation rate with respect to assets related to Plant and Machinery (P&M) is derived based on actual depreciation amount reflected in audited account for FY 2017-18 with respect to GFA of P&M (actual depreciation claimed before LDCD fund utilization).

MSLDC in its MYT Petition under Case No. 291 of 2019 has claimed a depreciation of Rs. 290.55 Lakh against which the Hon'ble Commission approved depreciation of Rs. 167.01 Lakh in the said Order. The depreciation for IT equipment /software has been calculated separately@ 15% as per MYT Regulations, 2015. It is humbly submitted that the IT related depreciation considers the impact of the asset Computer Software/IT equipment which was recognized by the Hon'ble Commission as

'IT Equipment' and had approved the depreciation at 15% in accordance with the MYT Regulation, 2015. MSLDC further submits that the same has been considered under the IT Equipment and MSLDC has accounted depreciation at the same depreciation rate of 15% as approved by the Hon'ble Commission in earlier orders. The capitalization related to IT equipment and its depreciation has been given in details in Format F4 attached with this Petition. The details of depreciation claim are given below.

Table 11: Depreciation for FY 2019-20

(Rs. Lakhs)

Particulars	Approved in MYT order (Case No 291 of 2019)	Actual
Depreciation	167.01	290.55

The details of the Gross Fixed Assets and depreciation for FY 2019-20 have been provided in Form F 4 of Petition Formats.

The Petitioner humbly submits that, with respect to difference in GFA considered by the Petitioner and approved by the Commission in MYT order, the details were provided in reply to data gap with respect to Case No 291 of 2019. The same concept, that is GFA as per actual up to 31st March 2017, as reflected in the audited account (before capitalization funded through LDCD fund) has been considered by the Petitioner in the present Petition like its earlier MYT Petition.

The Petitioner requests the Hon'ble Commission to consider the following details about non-approved capitalization for kind consideration.

<u>Capitalization to be approved of past years (the difference in GFA as per audited accounts and Hon'ble Commission's approved value)</u>

a) Capitalization disallowed in FY 2013-14 and FY 2014-15 for DPR scheme renovation in existing building in ALDC, Ambazari:

The Hon'ble Commission in its true-up orders for FY 2013-14 and FY 2014-15 opined that MSLDC had not submitted the reasons for cost overrun and hence, the capitalization was denied. The Petitioner respectfully submits the following reasons in this regard.

The said work was entrusted to M/s. N.S.Construction, vide work order W.O.No. CE/LDK/T-192/1188 Dated- 13.07.2010. The amount of work order was Rs. 2,25,32,630.00, being agency's offer is 14.47% above the estimated cost of Rs.1,96,84,310.00 put to the tender. As per the w.o. condition No.6, the time limit allowed for completion of the whole work was six months from the date of handing over of part /full site. The site was handed over to the agency on dated 27/07/2010 and subsequently confirmed to the agency. Accordingly the work was due for completion as on 26/01/2011. However the agency had not completed the work within above stipulation and actually completed the work on 19/06/2012. Thus there appears a delay of 511 days over and above the stipulated date of completion of the work.

Competent authority has considered the request and granted extension of time limit up to 19/06/2012. Following are the reasons in support of justification .

1) Due to late handing over of site
2) Due to initial extra work of strengthening of RCC structure.
3) Due to hindrances/fouling of various important cables like OFC etc.
4) Due to insufficient details in given drawings.
5) Due to non-existence of lintel beam.
6) Due to Delay in handing over of SCADA, Control Room, Conference Room.
7) Due to live Building & Prohibited area
8) Importantly Due to delay in issuing various drawings at various stages.

1) **Due to late handing over of site**: Although the work order for the aforesaid was issued on 13/07/2010 to Agency, however, the actual handover of the site was took place on 27/07/2010. The delay in handing over of the site is justifiable as the site was live i.e live control room / the staff was working initially in the said building and the agency has to work by vacating the area of the said building part by part..

2) **Due to initial extra work of strengthening of RCC structure**: The LD centre Ambazari building was very old. At the time of start of renovation and modification work, it was observed that the RCC structure of the building has some serious damage in terms of crack in beam and columns and corrosion of reinforcement etc. As per the suggestion of the consultant and MSETCL, structural audit of the building has been conducted through independent Structural Engineer. As per the advice of the structural engineer Micro Concreting process for strengthening the RCC structure has been undertaken to protect the RCC structure. Further the dismantling work at the site was commenced on 25/08/2010. It was also suggested to carry out the dismantling with the help of concrete crusher machine only and not through the manual

process. This was suggested with a view to avoid causing further damage to the RCC Structure. Both these items were not included in the original tender & need to get it approved from executing authority and after approval, on 13/09/2010, the agency has started the Micro Concreting work. For this the delay was caused and the explanation given by the agency is genuine one.

4**) Due to insufficient details in given drawings.** The location of the 15TR AC unit needs to be changed during the execution stage. During the excavation of the foundation work for AC unit as per the drawing released initially the live power cables were found and hence the LD Centre stops the work. After joint visit along with Architect/LD centre/ Civil Department it was decided to shift the location of the 15TR unit. The revised drawings were issued thereafter and the agency again restarts the work after some days laps. This also resulted in delay to some extent.

5) **Due to non-existence of lintel beam**: During the initial dismantling of the BB masonry at the various floors, it was observed that the lintel beams were not provided in the existing old construction. During renovation and modernization it was required to provide the lintel beams for the various openings were required be made. Hence there was some delay in the said project. Due to live building the dismantling work has to be executed carefully for avoiding any issuances or accidents. The explanation given by the agency under this head was generally found in order and the various permission to work beyond the time limit was also granted on the said reasons.

6) Due to Delay in handing over of SCADA, Control Room, Conference Room: The entire work has to be executed by the agency part by part as the center was in operational mode . Due to this also the delay was occurred to complete the entire project. The SCADA room and the Control Room was handed over very late even the conference room also handed over at the last and that too shifting all the equipments, computer etc. to the newly executed control room. The delay was occurs due to this also.

7) **Due to live Building & Prohibited area**: As the existing building is strictly Prohibited area, hence the movement of labors and machineries were restricted hence the work has to be executed properly by taking due permissions and completing all formalities etc. This is also on reasons for causing delay in completion of said projects.

8) **Due to changes in working drawings at various stages**: The working drawings were

finalized during the execution of work as per the site condition and requirement. The architecture has to be consulted along with the MSETCL and RCC consultant and the LD centre for any modification or finalization of any drawings. This also result in delay of work to some extent .

b) Capitalisation disallowed in FY 2014-15 for DPR scheme Construction of new SLDC building

The Hon'ble Commission disapproved the part of the said work on the ground that the Petitioner was asked to submit complete documentation and calculations for the completed costs of the scheme along with IDC calculations and copy of Board resolution for revised cost.

The Petitioner submits that the Hon'ble Commission approved the capitalisation during true-up as follows: Rs 1024.62 lakh (FY 12-13) (as submitted), Rs 562.50 lakh (FY 13-14) (as submitted), Rs. 273.16 lakh (FY 14-15) (partly disapproved).

It is pertinent to note the observations made by the Hon'ble Commission in its order in Case No. 178 of 2013 while approving the capitalisation for FY 2012-13.

> *" 4.68 While approving the capitalisation as proposed by MSLDC, the Commission has taken cognisance of the fact that the completed cost of schemes pertaining to construction of the new SLDC control room building at Kalwa and renovation of the existing SLDC buildings at Kalwa and Ambazari is higher than the cost in-principally approved by the Commission at the time of approval of the DPR. The reasons provided by MSLDC for increase in the capital cost are summarised below:*
>
> - *The estimates prepared by the appointed consultants were based on PWD DSR and prevailing market rates for the year 2007-08. Due to price escalations during last 3 years in basic construction materials such as steel, cement, sand, bricks, copper, aluminium etc. the estimated prices are much below the market prices.*
> - *Over the DSR estimated rates, the taxes like VAT, WCT, Octroi, Service Tax, insurance etc., to the extent of 3-5% are to be considered.*
> - *Skilled and unskilled labour charges are drastically increased.*
> - *Material transportation charges are increased due to increase in fuel prices.*
> - *There were also certain changes in the quantities of tendered material which were required for completion of the work.*

- *Revision in the cost of solar system to Rs. 2 lakh/kW for 25 kW.*

- *Cost incurred in shifting of EHV Line in the new Building area by Tata Power Company;*

- *Cost escalation on account of price escalation and increase in the interest during construction.*

4.69 The Commission has considered the above reasons provided by MSLDC and accordingly approved the capitalisation as proposed by MSLDC for the said schemes."

The Petitioner had also got the necessary board approval dated 18 November 2014 for revised cost of Rs 2305 Lakh (without centages) and Rs 2630 Lakh (with centage). The same is attached with the Petition as Annexure 8.

Further, the Commission disallows the claim of IDC of Rs.446.38 lakhs in FY 14-15 as details were not available. The Petitioner respectfully submits to approve the same on the basis of detailed IDC calculation attached with the Petition (in soft copy).

It is to be noted that the Hon'ble Commission has made the following observation in its order in Case No 20 of 2016.

"3.7.6. …………………………..

Accordingly, the Commission has considered the approved total cost of Rs. 2306.66 lakh as per Case No. 178 of 2013 for the purpose of capitalisation for FY 2014-15."

Based on the above, it is to be submitted that the Commission had considered the approved total cost of Rs. 2306.66 lakh; however, actual approval after true-up amount is lower than this, i.e. Rs 1024.62 lakh (FY 12-13), Rs 562.50 lakh (FY 13-14), Rs. 273.16 lakh (FY 14-15) only. Based on the above detailed submission, the Petitioner requests to approve the capitalization as per cost of the project.

c) Capitalisation Disallowed for non-DPR scheme Infrastructure development

The Hon'ble Commission disallowed the schemes due to the fact that Non-DPR scheme capitalisation exceeding 20% of DPR schemes and non-submission of DPR schemes.

The submission of the Petitioner in case of Petition for true-up of FY 14-15 is given below.

"MSLDC would like humbly submit that the schemes capitalised within MSLDC are mostly low value schemes (less than Rs. 100 lakhs), and includes capitalisation of items procured on an intermittent basis such as Furniture for Office, Fire Alarm System, Battery Sets with Charger, Online STOA software/hardware, Office equipment including Servers, PCs, Printers, Laptop, Xerox machine, Firewalls, Routers, LAN Components, cables, switches, etc. Thus, considering the varied and intermittent nature of asset addition of lower value, it is difficult to club the same under DPR scheme. In view of this, it is humbly submitted that the capitalisation claimed by MSLDC towards such non-DPR schemes may please be approved irrespective of what percentage it forms of that of the capitalisation of DPR schemes claimed during the year."

The Hon'ble Commission in case of approval of capitalisation for FY 2015-16, i.e. immediate next year of FY 2014-15, opined the following in Case No. 171 of 2017 with regard to capitalisation of Non-DPR schemes.

"3.8.7 For any scheme with projected capital expenditure above Rs.100 Lakh, MSLDC is expected to submit a DPR for in-principle approval. The Commission observes that most of the capex schemes of MSLDC are small value schemes and Capitalisation against which is intermittent and periodic in nature. Further, the Commission notes that, with new developments and issues in the power sector such as increasing share of renewable energy in the overall energy mix, integration of renewable energy into the grid, grid management to accommodate such smaller capacities and infirm nature of renewable energy, there are operational and technological challenges before SLDCs. Considering the foregoing, the Commission is of the view that the routine operations of MSLDC should not be adversely affected and it should also be equipped to undertake necessary capital expenditure to meet the operational and technological challenges. Therefore, the Commission has reviewed MSLDC's request to approve the capitalisation proposed under DPR and non-DPR schemes as submitted and accordingly, decides not to restrict the non-DPR capitalisation at 20% of DPR capitalisation approved for the year. Accordingly, the Commission approves capitalisation against DPR as well as non-DPR schemes as claimed by MSLDC, after verification from the audited annual accounts."

It is respectfully submitted that the Hon'ble Commission in the above referred order and in subsequent orders, allowed capitalisation of non-DPR schemes without any restriction of 20% of DPR capitalisation. The Hon'ble Commission accepted the proposal of the Petitioner so that operations of the Petitioner should not be adversely affected and it should also be equipped to undertake necessary capital expenditure to meet the operational and technological challenges.
It is also pertinent to submit that some of the non-DPR schemes are clubbed and termed as infrastructural development. These are not a single scheme and hence DPR cannot be prepared for such schemes. These are not a single scheme. These are small fragmented schemes as submitted by the Petitioner in true-up of FY 14-15, as reproduced above. So, DPR is not possible to prepare for those small schemes, which are different in nature and purpose of each of them are different also.

Considering the Hon'ble Commission decision to allow non-DPR capitalisation in excess of 20% of DPR capitalisation, the Petitioner requests to approve the capitalisation as submitted by the Petitioner under previous true-up Petitions, without any disallowance. The costs are reflected in the annual account of the Petitioner and without approval, the Petitioner cannot claim the associated cost elements in the ARR. It is once again requested that the legitimate costs incurred by the Petitioner may be allowed by the Hon'ble Commission.

3.7.Interest and Finance charges

The interest on the existing actual loan for MSLDC has been already repaid and not considered further. The loan in case of MSLDC is normative loan only. Further, the capitalization is funded from LDCD fund only, hence, no new loan has been added. The depreciation calculated for FY 2019-20 is considered as normative loan repayment.

For the purpose of estimation of Interest Cost corresponding to normative loans, opening normative loan amount as on 01.04.2018 has been considered (as submitted in last MYT Petition by the Petitioner and as per GFA submitted above). Further, MSLDC has considered the weighted average interest rate of the actual loan portfolio of MSETCL as communicated by MSETCL for computing the interest expenses for FY 2019-20.

The interest on loan, for FY 2019-20 is shown in below:

Table 12: Interest on Loan for FY 2019-20

(Rs. Lakh)

Particulars	FY 2019-20	
	Approved in MYT order (Case No 291 of 2019)	Actual
Opening Balance of Net Normative Loan	1161.41	1645.89

Particulars	FY 2019-20	
	Approved in MYT order (Case No 291 of 2019)	**Actual**
Less: Reduction of Normative Loan due to retirement or replacement of assets		
Addition of Normative Loan due to capitalization during the year		
Repayment of Normative loan during the year	167.01	290.55
Closing Balance of Net Normative Loan	994.40	1355.34
Average Balance of Net Normative Loan	1077.91	1500.61
Weighted average Rate of Interest on actual Loans (%)	10.12%	10.03%
Interest Expenses	109.08	150.51

MSLDC humbly requests the Hon'ble Commission to approve above expenses towards Interest on Loan. The details of the interest of loan for FY 2019-20 have been provided in Form F 5 of Petition Formats.

3.8.Return on Equity and Income tax

MSLDC has worked out the Return on Equity (RoE) for FY 2019-20 in accordance with the Regulation 28 of the MYT Regulations, 2015. Further, the related provision as given in Regulation 32 is given below.

> *"28. Return on Equity—*
>
> *…………………………….*
>
> *28.2 Return on equity for the Transmission Licensee, Distribution Wires Business and MSLDC shall be allowed on the equity capital determined in accordance with Regulation 26 for the assets put to use, at the rate of 15.5 per cent per annum in Indian Rupee terms, ………..*
>
> *28.3 The 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 cost, for the investments put to use in generation Business or Transmission Business or Distribution Business or MSLDC, for such Year."*

The Hon'ble Commission has considered the following in Case No. 291 of 2019 with respect to return on equity: *"There is no addition to equity considered during the year as the capitalization during the year same is being considered to be funded from LDCD fund and hence no equity addition is* *envisaged."*

MSLDC would like to submit that the Return on Equity for the FY 2019-20 have been calculated as per the opening equity as on 01.04.2018 (because, from FY 2018-19 onwards all capitalization is funded through LDCD fund only). Further, in accordance with the MYT Regulations, 2015, rate of 15.5% have been considered for computing RoE. Hence, the Return on Equity amount is Rs. 246.34 Lakh for FY 2019-20 against Rs. 196.45 Lakh approved in Case No. 291 of 2019.

The Return on Equity for FY 2019-20 is shown in Table as below:

Table 13: Return on Equity for FY 2019-20

(Rs. Lakh)

Particulars	FY 2019-20	
	Approved in MYT order (Case No 291 of 2019)	**Actual**
Regulatory Equity at the beginning of the year	1267.45	1589.27
Capitalization during the year		
Consumer Contribution and Grants used during the year for Capitalization		
Equity portion of capitalization during the year		
Reduction in Equity Capital on account of retirement / replacement of assets		
Regulatory Equity at the end of the year	1267.45	1589.27
Return on Equity Computation		
Return on Regulatory Equity at the beginning of the year @15.5%	196.45	246.34
Return on Regulatory Equity addition during the year		
Total Return on Equity	**196.45**	**246.34**

MSLDC submits that RoE for FY 2019-20 is higher than approved RoE in Case No. 291 of 2019 because of difference of GFA. MSLDC humbly requests the Hon'ble Commission to approve above expenses towards Return on Equity. The details of the Return on Equity for FY 2019-20 have been provided in Form F 9 of Petition Formats.

No income tax has been claimed by the Petitioner, as per earlier practice.

3.9.Revenue True-up for FY2019-20

For FY 2019-20, the Hon'ble Commission in Case No. 291 of 2019 had provisionally approved revenue of MSLDC on account of income from monthly operative charges of Rs. 2901.97 Lakh and on account of open access (OA) income of Rs. 1134 Lakh. Also non-tariff income for the same year was approved as Rs. 256.71 Lakh. During FY 2019-20, MSLDC has recovered the Fees and Charges as per the Order issued by Hon'ble Commission in Case No. 20 of 2016. MSLDC in actual earned 'Income from monthly operating charges' of Rs. 2902.08 Lakh and 'Income from OA Charges' including rescheduling charges and rebate from prompt payment of Rs. 1365.87 Lakh, in FY 2019-20. Rs 3.23 Lakh has been accounted for rebate on prompt payment to transmission system users.

3.10. Non -Tariff Income

As regards to non-tariff income, MSLDC has received major earning from interest on investment made in deposit in Bank and earn interest on such deposits. However, as directed by the Hon'ble Commission in Case No. 291 of 2019, the interest on fixed deposit has not been considered while truing up. The observation of the Hon'ble Commission for not considering the interest income from investment is reproduced below.

> *"As noted by Commission in Case No. 171 of 2017, this income is primarily on account of the fixed deposits created from the surplus available with MSLDC. Considering the similar approach as adopted in MTR Order in Case No. 171 of 2017, the Commission is considering the holding cost on the surplus of FY 2017-18 for the respective year only and as discussed in para 3.17.5, therefore, the income on investments (fixed deposits) is not considered as part of the Non-Tariff Income for FY 2017-18, as it would amount to deducting this amount twice from the ARR."*

The Petitioner has considered the interest rates offered by various banks for deposits kept by SLDC. The weighted average of such fixed deposits interest rates, which is 6.54% for FY 2019-20, is considered for determination of interest income from LDCD fund. The amount of Rs. 340.71 Lakh is derived as interest income from LDCD fund, which is considered under non-tariff income for FY 2019-20. Other non-tariff income as per audited account is Rs. 70.86 Lakh for FY 2019-20.

The revenue of MSLDC in different head for FY 2019-20 is given below.

Table 14: Revenue Components for FY 2019-20

(Rs. Lakh)

Particulars	Approved in MYT order (Case No 291 of 2019)	Actual
SLDC Revenue Components		
Non-tariff income including interest income from LDCD fund	256.71	411.58
Income from OA Charges including scheduling charges	1134.00	1369.10
Income from monthly operating charges	2901.97	2902.08

Particulars	Approved in MYT order (Case No 291 of 2019)	Actual
Prompt payment rebate		(3.23)

The Petitioner considers non-tariff income of Rs. 411.58 Lakh in FY 2019-20 which includes the interest earned on LDCD fund. As mentioned above, to calculate the interest rate (to be used to determine the interest income from LDCD fund), weighted average of actual interest rates of all fixed deposits of SLDC are considered. The LDCD fund created for FY 2019-20 is given at the end of this section. The details of the income earned from various sources (including other receipts) for FY 2019-20 is provided in Form F10 and F11 of Petition Formats.

3.11. Summary of True-Up for FY2019-20

Based on the above submission, the actual expenditure against actual receipts and actual surplus is summarized in the table below. The actual expenditure is considered as net entitlement i.e. after considering gain / loss.

Table 15: Final True-Up for FY 2019-20

(Rs. Lakh)

Sr. No.	Particulars	FY 2019-20			
		Approved in Case No. 291 of 2019	April-March (Audited)	True-Up requirement	Net Entitlement after sharing of gains /(losses)
		(a)	(b)	(c) = (b) - (a)	
1	Operation & Maintenance Expenses	2555.48	2675.33	119.85	2550.91
2	RLDC Fees and WRPC Charges	782.14	498.59	-283.55	498.59
3	Depreciation Expenses	167.01	290.55	123.54	290.55
4	Interest on Loan Capital	109.08	150.51	41.43	150.51
5	Interest on Working Capital	54.98	54.30	-0.68	18.10
6	Reactive Energy Charges paid to Generators/TSUs	0.00	0.00	0.00	0.00
7	Income Tax	0.00	0.00	0.00	0.00
8	**Total Revenue Expenditure**	**3668.69**	**3669.28**	**0.59**	**3508.67**
9	Return on Equity Capital	196.45	246.34	49.89	246.34
10	**Total Expenditure for MSLDC**	**3865.14**	**3915.62**	**50.48**	**3755.01**
11	Less: Non-Tariff Income	256.71	411.58	154.87	411.58
12	Less: Income from Open Access charges	1134.00	1365.87	231.87	1365.87

Sr. No.	Particulars	FY 2019-20			
		Approved in Case No. 291 of 2019	April-March (Audited)	True-Up requirement	Net Entitlement after sharing of gains /(losses)
		(a)	(b)	(c) = (b) - (a)	
13	Less: Income from Reactive Energy Charges	0.00	0.00	0.00	0.00
14	**Annual Fixed Charges for MSLDC**	**2474.44**	**2138.17**	**-336.27**	**1977.56**
15	**Revenue**	**2901.97**	**2902.08**	**0.11**	**2902.08**
16	**Revenue Gap/(Surplus)**	**-427.53**	**-763.91**	**- 336.38**	**-924.52**

*after adjustment of gain/loss as explained in the relevant section above.

Thus, on final truing up for FY 2019-20, there is surplus of Rs. 924.52 Lakh, treatment of which has been discussed under LDCD fund, as given below.

3.12. LDCD fund

The utilization from LDCD fund is considered as capitalization during the year. The LDCD fund at the end of FY 2019-20 is considered as starting fund amount for FY 2020-21.

Table 16: LDCD fund for FY 2019-20

(Rs. Lakh)

Particulars	Amount allocated to the LDCD fund
LDCD fund at the starting of year	4,657.25
Add: Apportionment of gap to be recovered as per Case No. 20 of 2016	711.62
Less: Revenue Gap / (Surplus) of the Year as submitted in the present Petition	- 924.52
Less: Utilisation of LDCD Fund	531.24
LDCD fund at the end of year	5762.15
Average LDCD fund	5209.70
Interest rate	6.54%
Income earned on LDCD fund – transferred to non-tariff income	340.71

The Petitioner has calculated the interest income on the basis of average LDCD fund during FY 2019-20. The same amount is already considered as non-tariff income by the Petitioner. The Hon'ble Commission may approve the details regarding LDCD fund, as submitted above.

4. Truing-up for FY 2020-21 and FY 2021-22

MSLDC has prepared the true-up for FY 2020-21 and FY 2021-22 as per provisions given in Multi Year Tariff Regulation (MYT Regulations), 2019. The Hon'ble Commission has finalized MYT Regulations, 2019 after completion of the control period of MYT Regulation, 2015. The MYT Regulations, 2019 is applicable for five-year period, i.e. FY 2020-21 to FY 2024-25. The approach followed by the Petitioner for truing-up of two financial years is as per MYT regulations, 2019. These true-up details are based on the Audited Accounts and Allocation Statement for FY 2020-21 and FY 2021-22, that have been finalized & attached to the Petition as **Annexure- 2.** MSLDC, therefore, seeks true up of all components for FY 2020-21 and FY 2021-22 as per the Audited Accounts and principles laid down in the MYT Regulations, 2019, published by the Hon'ble Commission. 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 and key issues in the subsequent paragraphs.

4.1.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

The detailed component of each expenses considered by MSLDC is already explained in the previous chapter and so, not reproduced here. Based on the Audited Accounts prepared by MSLDC for FY 2020-21 and FY 2021-22, the O&M expenses are Rs. 3025.95 Lakh and Rs. 3453.80 Lakh, respectively. The actual Operations and Maintenance is marginally differ from approved O&M expenses given in Case No. 291 of 2019.

MSLDC also submits that, as explained in section 3.2, the Training Expenses as given in audited accounts in Employees Expenses (considered under staff welfare), is now included in the A&G Expenses. To this extent, variation exists in claimed and Audited figures of Employees expenses as well as A&G expenses.

It is to be noted that the number employees was around 116 to 119 in those two years and the employee expenses was also similar, without any great divergence. The employee expenses was increased from FY 2020-21 onwards, as new pay scale was already implemented from Oct-2019 and revised salary was applicable for full 12-months period. Further, the remaining three installments of wage arrears were paid in the months of February-21, March-21 and December-21. The impact of payment towards wage arrears are included in the employees expenses. As mentioned above, new scale was implemented from October 2019 and wage arrears were paid for April'18 to September'19 period.

As mentioned in earlier section, due to wage revision existing DA was merged with basic (in case of revised basic) and hence, new DA was lower than old DA. Before wage revision DA reached to 154% and after pay revision, starting DA was 7%, which increased subsequently as per norms. So, in case of determination of wage arrears related to DA, significant DA amount was actually deducted from wage arrears as DA with new pay scale was lower than DA with old pay scale. Leave travel expenses were reduced significantly in FY 2020-21 due to impact of Covid-19 related travel restrictions imposed by various authorities. The same expenses were increased in FY 2021-22, when the travel restrictions were relaxed.

Before Pay-revision HRA has been calculated on Old Basic Pay, but after Pay-revision HRA has been calculated on New Basic. So there is increase in House Rent Allowance. Due to Pendamic year (Covid 19) company has stopped payment of Leave Encashment as per Adm Cir. No 90, dt 25.04.2020. Because of this there is reduction in Earn Leave Encashment. Because of Pay-revision all allowances has been increased. As per Pay-revision, in revised Pay-scale, basic has been increased so CPF has been increased than 2019-2020 as it is dependent on Basic+DA, which is higher due to wage revision.

A&G expenses increased, due to increase in (i) electricity charges, (ii) upkeep of office, (iii) security charges, (iv) Vehicle hiring charges and (v) outsource personnel salary. In TB, above mentioned expenditure related details are provided. The details of outsource personnel related contracts are given below.

Table 17: Details of Outsource Personnel related Contracts (FY 20-21 and FY 21-22)

(Rs. Lakh)

FY 2020-21			Outsource		Hiring		ITI	
Sl. No	**Vendor name (PO number)**	**Period**	**Total no of employees**	**PO amount**	**Total no of employee**	**PO amount**	**Total no of employees**	**PO amount**
1	M/s Adarsh Sush Beroj Sah San Mary 8100008684	01.12.2020 To 30.11.2021					8	24,35,707
2	M/s Jadhav Enterprises 8100006737	01.11.2019 To 31.10.2020					6	12,24,205
3	M/s Jadhav Enterprises 3100041038	01.08.2020 To 31.10.2020					6	6,06,124
4	Vindhyachal Security Detective & Allied Services Pvt. Ltd. 3100042812	01.02.2021 To 31.01.2022	7	18,32,429				
5	M/S Jadhav Enterprises 3100039663	01.01.2020 To 31.12.2020			9	24,64,260		
6	Vindhyachal Security Detective & Allied Servics Pvt. Ltd. 3100039661	01.01.2020 To 31.12.2020			10	27,38,066		
7	M/s Accurate Security Service 3100042288	29.12.2020 To 28.12.2021			21	59,79,666		
8	Real Security Serv Pvt Ltd 3100042287	01.01.2021 To 31.12.2021			21	59,79,666		
9	M/S Jadhav Enterprises 3100039666	01.02.2020 To 31.01.2021	7	18,42,968				
10	Rohit Enterprises 3100039664	01.02.2020 To 31.01.2021	7	18,42,968				
				55,18,365		**171,61,658**		**42,66,036**

FY 21-22			Outsource		Hiring		ITI	
Sl. No	**Vendor name (PO number)**	**Period**	**Total no of employees**	**PO amount**	**Total no of employees**	**PO amount**	**Sl. No**	**Vendor name**
1	M/s Accurate Security Service 3100045316	01.12.2021 To 31.03.2022					8	7,97,348
2	Vindhyachal Security Detective & Allied Services Pvt. Ltd. 8100010507	01.02.2022 To 31.01.2023	13	37,93,525				

3	Real Security Serv Pvt Ltd 3100045716	07.01.2022 To 30.04.2022			18	17,67,860		
4	M/s Accurate Security Service 3100045717	07.01.2022 To 30.04.2022			17	16,69,646		
				37,93,525		**34,37,506**		**7,97,348**

For security guard, SLDC appointed around 17-20 guards in FY 20-21 and around 17-22 guards in FY 21-22.

A&G expenses in FY 20-21: The Petitioner respectfully submits that there were certain issues in entries under A&G expenses and some expenditure was booked in different head in FY 20-21. The same was rectified in FY 21-22 as per opinion of the auditor. That is why head wise comparison of FY 20-21 with FY 21-22 in A&G is not appropriate.

Further, The Petitioner submits that expenditure on account of security, outsource and office upkeep to be considered in totality to consider the year to year variation. The same is given below.

FY 19-20	FY 20-21	FY 21-22
240.95	314.41	378.27

Security Expenses cost was double booked in FY 2020-21 by Rs 24 lakhs and rectified in FY 2021-22 by withdrawing the same. Hence FY 2021-22 cost reduced due to withdrawal effect.

Office upkeep expenses increase due to wrong booking of outsource expenses Rs 82 lakhs in office upkeep GL. In the year 2019-20 rent expenditure includes rent reimbursement to CE SLDC of Rs.2 lakhs which was not there in the year 20-21. So expenditure reduced. Most of the expenditure reduced due to Covid pandemic.

The reasons for increase of A&G expenses in FY 21-22 are given below:

Payment to Nagar Parishad Wadi, for 21-22 is made which was not there in FY 20-21. New connection at Vainganga building for outsource Employee sitting arrangement was made. In FY 2021-22 there is increase in rate of water charges bill. There is 3 no. of work order placed for printing and stationery of Rs.6223421/- (supply of plain white paper (A4 Size/70 GSM, A4 Size/75), for day to day office work order for Rs. 1,09,536/-& Work order for supply of toner/cartridges for printers for Rs 231988/- as well as providing & fixing of fire safety related self-glow radium sign boards on ACP/FRP sheets for Rs 281897/-). Broadband connection provide to higher authorities, so only landline connection is available in 2021-22. Advertisement expenditure was made as per tender floated.

New insurance related expenditure increased due to REMC - SCADA asset; asset insured first time in FY 21-22.

Due to FBSM and DSM related work, additional manpower of 42 numbers (computer operator) was sanctioned for new outsource employees. The cost was increased due to this reason. The work undertaken by them is given below:

- Preparation & uploading of Interstate & Power Exchange Rate for all Distribution licensee &

Deem Distribution licensee from August 2011 to 10th October-2021.

- Meter data Conversion from encrypted to readable format (.CSV) for uploading into billing software from year 2018 onwards.
- Missed Data Preparation in case nodal officers of respective circle have not forwarded all interface location meter data.
- Migrated Consumer data in respect of TPC-D & AEML-D along with adjustment file for difference encountered between day-ahead schedule & actual data received. This file is utilised while computing post facto drawl schedule of these two discoms. This data has to be prepared since March-2013 onwards.
- Mumbai Non-Conventional Energy Resource Data for billing as well as replacement of schedule with actual data for post facto revisions. These files were prepared from March-2013 onwards.
- Meter corrections sent by Discoms and other SPPs needs to be uploaded in the server and reports re-generation for verification.
- Preparation & uploading of post facto schedule revision in respect of State Discom's Wind & Solar, Small Hydro, TPC Hydro, Koyna & Ghatghar since March-2013 onwards.
- Preparation & uploading central sector data and infirm power adjustment for every billing week. This data needs to be taken from WRPC website and has to be punched in pre-defined format of our scheduling software. As bills are revised by WRPC, the data has to be re-uploaded in the software to perform post-facto operation.
- Preparation and uploading of central sector, MSPGCL, IPP & TPC rates based on the audited rates submitted by respective beneficiary. These files were to be prepared from the March-2013 onwards.
- State Balancing Calculation activities which involve downloading of day-ahead MOD operated schedule & implemented schedules for all Distribution licensees. Difference encountered in availability for each Discoms between above two schedules has to be identified block wise and needs to be adjusted in drawl schedules. This activity has to be performed twice as any change in schedule due to discrepancies pointed out SPPs in draft bill results in revision of availability for Discom. These files were to be prepared from March-2013 onwards.

Also, three Advisors were appointed and corresponding remuneration was booked in FY 21-22.

The R&M expenses as per the audited statement have been claimed in truing up purpose. The R&M expenses on account of various civil works, server, AC systems, indoor substation, lift, CC TV are the major expenditure items (Details are in Annexure 3). The variation in FY 20-21 of R&M expenses is majorly due to cost towards AMC of SCADA and Rs 43.42 lakh was due to expenditure for road work at ALDC, Ambazari. For other two years, there is no such variation.

The details of the actual Operation and Maintenance expenses incurred by MSLDC for FY 2020-21 and FY 2021-22 against approved amount are shown in the Table below:

Table 18: Operation and Maintenance Expenses for FY 2020-21 and FY 2021-22

(Rs. Lakh)

Sr. No.	Particulars	Approved in Case No. 291 of 2019 *	Actual FY 20-21	Approved in Case No. 291 of 2019 *	Actual FY 21-22
1	Employees Expenses		2024.37		2262.49
2	Administration and General Expenses		775.22		1020.94
3	Repairs and Maintenance Expenses		226.36		170.37
Total Operation and Maintenance Expenses		**3403.73****	**3025.96**	**3021.35**	**3453.80**

*including estimated impact of wage revision on base employees expenses;

** including wage revision arrears payments (2 instalments)

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:

> *"11 Mechanism for sharing of gains or losses on account of controllable factors*
>
> *11.1 The approved aggregate gain to the Generating Company or Licensee or MSLDC on 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 expense corresponding to approved value are categorized as controllable expenses.

For true-up and sharing, the relevant clause of MERC MYT Regulation 2019 are 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 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% 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."

Under Regulation 96.4 of the MYT Regulations, 2019, it has been mentioned that the impact of wage revision, if any, may be considered the time of true-up for any year, based on documentary evidence and justification. The Petitioner has implemented the revised pay-scale and wage revision related arrears are also paid, which is considered in the audited account. Hence, the same may be approved.

It is to be mentioned that following provisions are given under first proviso to the Regulation 96.4 of the MYT Regulations, 2019:

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

So, following the above provision, the Petitioner kept the impact of wage revision arrear payment outside of the sharing of gain /loss mechanism. The same has been added after sharing calculation to find out total entitlement. For example, Rs 138.35 lakh and Rs 174.52 lakh (arrear due to wage revision for FY 20-21 and 21-22) has not been considered while calculating the sharing of gain / loss. Following the provisions given in the MYT Regulations, the Petitioner considers the O&M expenses for FY 2019-20 as normative expenses after sharing of gain and loss, but excluding wage revision arrear. The normative expenses have been escalated with relevant WPI and CPI data for finding out the normative expenses for FY 20-21 and FY 21-22, which has been compared with actual for determining the sharing of gain / loss. Following the above principle, the impact of sharing of gains/loss has been considered for O&M expenses for FY 2020-21 and FY 2021-22 and the same is presented in the following table.

Table 19: Sharing of Gains and Loss on account of O&M Expenses for FY 2020-21 and FY 2021-22

(Rs. Lakh)

Particulars		FY 2020-21	FY 2021-22
O&M Expenses normative (derived based on O&M expenses for FY 19-20 after sharing of gain /loss but without wage revision arrear)	(a)	2549.40	2773.05
Actual O&M expenses		3025.96	3453.80
Actual O&M expenses without wage revision arrear	(b)	2887.61	3279.27
Total Gain/(Loss) on account of controllable factors	(c)=(a) – (b)	(338.21)	(506.22)
Sharing proposed (gain: two-third rebate/ loss: one-third additional charge)	(d)	(112.74)	(168.74)
Net Entitlement to MSLDC without wage revision arrear	(a) - (d)	2662.14	2941.79
Net Entitlement to MSLDC with wage revision arrear		2800.49	3116.32

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

Further, the Petitioner requests to re-consider the normative expenses, as derived above by the Petitioner on the basis of the MYT Regulations and used for sharing calculation. It can be seen from the above table that, the difference between normative and actual (both without wage revision arrear) is significant. The Petitioner can claim only one-third part of that difference amount. This is real loss to the Petitioner and this is only due to wrong setting of the normative expenses. It is to be submitted that normative O&M Expenses was derived based on O&M expenses for FY 19-20 after sharing of gain /loss but without wage revision arrear. However, the O&M expenses for FY 19-20 has not capture the full impact of new pay scale, as the new pay scale was effective part of the year, implemented from October 2019. Hence, if the impact of wage revision was there for full 12 months (i.e. revised wage in new scale from April-19), then the normative expenses would be different for FY 2019-20 (i.e. higher than present level) and hence, the same would be reflected in normative expenses of FY 2020-21 and FY 2021-22. The Hon'ble Commission approved the O&M expenses in last MYT order (Case No 291 of 2019) considering the similar approach, where separate expenses were approved due to wage revision. **Hence, following the 'Regulations 105: Power to Relax', the Hon'ble Commission may relax the related provisions with respect to normative expenses and approves the normative expenses accordingly, so that the Petitioner can claim its legitimate expenses.**

4.2.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:*
>
> *(i) 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 & 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 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.

MSLDC has considered the aforementioned methodology specified in the MYT Regulations, 2019 for calculation of IoWC. MSLDC has computed IoWC, by considering one month's normative Operation and Maintenance expenses and 1.5 months' receivables, as derived by the Petitioner for the corresponding years. For computing receivables, MSLDC has considered the actual revenue earned. Further, MSLDC submits that there is no actual loan borrowed for meeting its working capital 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 2020-21 and FY 2021-22. The Petitioner has derived the weighted average MCLR (one-year period) for FY 2020-21 and FY 2021-22 based on actual MCLR prevailing during the year. The applicable interest rate for working capital calculation is explained below.

Table 20: SBI base rate (MCLR) prevailing during FY 2020-21 and FY 2021-22 and interest rate considered for working capital

Particulars	Rate (%)	
	FY 2020-21	2021-22
Weighted average MCLR	7.07	7.00
Applicable interest rate (MCLR +150 basis point)	8.57	8.50

The IoWC considered by MSLDC and approved for FY 2020-21 and FY 2021-22 are shown in the table below:

Table 21: Interest on Working Capital for FY 2020-21 and FY 2021-22

(Rs. Lakh)

Particulars	Approved in Case No. 291 of 2019	Actual Claimed FY 20-21	Approved in Case No. 291 of 2019	Actual Claimed FY 21-22
Interest on Working Capital	67.58	54.53	62.35	53.76

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. The Hon'ble Commission in Case No. 291 of 2019 opined that as no actual IoWC has been paid, the entire amount would be considered as efficiency gain and would be shared as per Regulation 11 of MYT Regulations, 2015. So, the entire gain is proposed to be shared as per Regulation 11 of the MYT Regulations, 2019. Therefore, **two-third of IoWC** is proposed to be shared as efficiency gain, 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 22: Sharing of gain / loss in case of Interest on Working Capital for FY 2020-21 and FY 2021-22

(Rs. Lakh)

Particular	Claimed (Rs lakh)	Efficiency gain (Rs lakh)	Shared with beneficiary (Rs lakh)	Net entitlement (Rs lakh)
Interest on Working Capital FY 2020-21	54.53	54.53	36.35	18.18
Interest on Working Capital FY 2021-22	53.76	53.76	35.84	17.92

4.3.RLDC Fees & WRPC Charges

The RLDC Fees and WRPC Charges for the **FY 2020-21** as per the Audited Accounts are Rs. 511.83 Lakh. The same is payment related to RLDC Fees only. The payment for April'20 to October'20 was Rs. 299.46 Lakh and Rs 212.38 Lakh was for remaining five months period. In case of **FY 2021-22**, total RLDC payment is considered as Rs.584.98 Lakh. The Petitioner has considered the RLDC payment under Fees and Subscription (covered 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 Fees and subscription related entries including RLDC fees are given in Annexure 4. The same is reflected in the Fees and subscription related G/L attached with the Petition.

The details, as per entries made in TB, for FY 2021-22, are given below.

Table 23: Details of RLDC fees paid in FY 2021-22

Sl No	Month	Amount	Remarks
1.	April 2021 to Aug 2021	1,67,30,701	Total amount of RLDC fees April – Aug 21 (Rs. 2,47,13,914) minus true-up refund from WRLDC (Rs. 7983213)
2.	Sep-21	53,16,991	
3.	Oct 21 to Nov 21	1,03,95,405	
4.	Dec-21	53,51,711	

Sl No	Month	Amount	Remarks
5.	Jan-22	53,71,071	Total provision of Rs. 16288914 has been made
6.	Feb 2022 to March 2022	1,09,17,843	
7.	April 2019 to May 21	1,67,78,091	Supplementary bill of WRLDC for April'19 to May'21 period; in this period due to pendency of WRLDC Petition (for 2019-24 period fees) before CERC, charges were collected as per charges applicable on 31.3.2019, which was subsequently revised by CERC through its order for WRLDC fees for FY 2019-24 period
8.	*Subtotal*	7,08,61,813	
9.	Less:	1,23,64,163	Excess provision transfer to income Rs. 123.64 lakh: provision of Rs.249.96 lakh was made in FY 2019-20 (for Oct'19 to March'20 period) minus Rs 126.32 lakh actually paid. (Rs 126.32 lakh = Rs. 249.96 lakh minus adjustment due to (i) refund due to true-up of FY 2017-18 and FY 2018-19 of WRLDC and (ii) other adjustment)
10.	Grand total	5,84,97,650	

As submitted in last MYT Petition, the WRPC charges are not being paid by MSLDC from FY 2016-17, as SLDCs are exempted from sharing the charges, and hence not reflected in the Audited Accounts. The actual payment made against the approved charges, as determined by the Hon'ble Commission in Case No. 291 of 2019 is given below.

Table 24: RLDC Fees for FY 2020-21 and FY 2021-22

(Rs. Lakh)

Particulars	Approved in Case No. 291 of 2019	Actual	True- Up Requirement
FY 2020-21	874.41	511.83	-362.58
FY 2021-22	1055.16	584.98	-470.18

MSLDC requests the Hon'ble Commission to approve RLDC Fees claimed for FY 2020-21 and FY 2021-22 on actual basis. The details of RLDC Fees are also provided in Form F7of Petition Formats.

4.4.Capitalization

The Hon'ble Commission approved capitalization of Rs. 1922.80 Lakh for FY 2020-21 and Rs. 1441 Lakh for FY 2021-22 in Case No. 291 of 2019. 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 25: Actual Capitalization for FY 2020-21 and FY 2021-22

(Rs Lakh)

Sr. No.	Project Title	Actual Capitalization
FY 2020-21		
DPR Schemes		
1	H/W S/W at control center	127.44
Non-DPR Schemes		
1	ICCP link b/w SLDC Airoli and REMC at SLDC	17.09
2	General asset / Infrastructure development	36.89
	Total Schemes Capitalization	**181.42**
FY 2021-22		
DPR Schemes		
1	Construction of new UCR wall (Compound wall)	35.41
2	H/W S/W at control center	120.36
3	Development of S/W for S&D , DS, SEA, DSM & Cloud	461.15
4	70 SAS/RTUs Integration	24.78
Total DPR		**641.70**
Non-DPR Schemes		
1.	RE-DSM (REMC)	27.49
2.	RTU-DC SLDC Airoli and Ambazari (two schemes jointly)	1.94
3.	Web based software for STOA application	17.13
4.	ICCP link b/w SLDC Airoli and REMC at SLDC	45.94
5.	Watchman cabin at SLDC main gate	4.30
6.	S/I/C of video conference system at 3rd floor	4.63
7.	Active Dir management solution and maintenance at SLDC	13.10
8.	S/I/T/C of New 240 line Digital EPABX m/c	12.95
9.	General asset	31.51
Total Non-DPR		**158.99**
Total Schemes Capitalization		**800.69**

A new **ICCP link** was required between SLDC SCADA system & REMC SCADA system at Airoli. A scheme was prepared for establishment of ICCP link between SLDC Airoli & REMC at SLDC Airoli amounting to Rs. 17.09 Lakhs. The order was placed to M/s Siemens for Rs. 17.09 Lakhs and work completion report (WCR) for the same has been prepared after capitalization.

UCR wall was partially completed and put to use, which has been considered by the Petitioner. However, there is a dispute with the present contractor and the Petitioner has paid the partial amount against total work order cost of Rs. 111.15 lakh. The Petitioner will complete the remaining part through a new tender.

The **DSM Regulation** was notified by the Hon'ble Commission on 01.03.20219, wherein the Hon'ble Commission has specified the date for coming into force of these Regulation which shall not be later than 1st April 2020. The scheme cost proposed under capex for FY2020-21 was tentatively envisaged for Rs. 259 Lakhs and the same was reflected in the last MYT petition. It is to mention here that the proposed scheme cost was very preliminary in nature. After the notification from MERC, the budgetary offer for developing DSM software were sought from various software developers. MSLDC then prepared the scheme cost based on these budgetary offers and subsequently the scheme got approved for Rs. 1207.58 Lakhs (capex and opex, combined). M/s PwC got the contract and the amount quoted by M/s. PwC is 742.81 Lakhs. This cost includes the cost of DSM software development along with integration DSM software with other software, Cloud hosting charges for 06 years and AMC cost for three years post expiry of 03 years warranty period. The LOA was awarded to M/s PwC for Rs. 509.76 Lakhs through SRM application for DSM software development along with integration DSM software with other software's and cloud hosting for 1st year.

FBSM: Provision of 200 Lakhs in FY 2020-21 is now to be nullified as no capital expenditure is required for FBSM application as it has been replaced by newly notified DSM Regulations. The commercial implementation of the same was started from 11 October 2021. Any modifications/ changes in FBSM will be taken care under FBSM AMC order.

80 RTU and & 70 RTU integration Scheme: The tender for integration work of 10 nos SAS RTU was floated by SLDC on 07/03/2017. Only one bid was submitted even after extension of date. Proposal was forwarded to Hon. CMD, MSETCL for approval of opening of price bid and placing of order on Single bid. M/s Siemens quoted Rs 8.83 Lakhs inclusive of all taxes for integration of one SAS RTU. After negotiation the rate contract order for service towards integration of 150 RTU SAS at the unit rate of 3 lakhs plus GST 18% was placed on M/s Siemens. As per BR no 1035 for SITC of 80 RTU, budget provision of 5.10 Cr for hardware and software at control center SLDC portion in SLDC capital expenditure budget is approved. Then this 5.10 Cr for 80 RTU scheme was short closed for Rs 2.83 Cr for 80 RTU scheme and balance 2.48 Cr was allotted to 70 SAS integration work as 70 RTU integration scheme at SLDC. 70 RTU scheme is DPR scheme and under 70 RTU scheme two work orders were issues and among which 7 RTU integration order of Rs. 24.78 lakh was capitalized.

General asset for infrastructure development has been considered as per audited data regarding capitalization.

MSLDC submits that actual Capitalization is lower than the Capitalization approved by the Hon'ble Commission in Order in Case No. 291 of 2019. Few schemes could not be initiated due to change in requirement at SLDC level as per situation prevailed. Also, COVID related lockdown restrictions impacted the working of SLDC – hence, planning and execution of proposed schemes shifted to future years. The reduction in Capitalization is attributable to reduced Capitalization towards few schemes that were proposed earlier, which however are getting capitalized in the subsequent years. Several schemes planned earlier actually transferred in subsequent years and corresponding capital expenditure and capitalization has been claimed in the respective years. MSLDC humbly requests the Hon'ble Commission to allow the actual capitalization as submitted above.

Regarding infrastructure development schemes, it is submitted that the schemes are low value schemes. The details of the actual Capitalization, including details of capital works in progress (CWIP), are provided in Form F 3.3 of the Petition Formats, submitted along with this filing**.**

4.5.Depreciation

The Hon'ble Commission in its order in Case No. 291 of 2019 opined the following regarding claim of depreciation, during the fourth control period.

> *"The Commission has allowed LDCD Fund to be used for funding Capitalization for the 4th Control Period. The LDCD Fund is enough to meet Capitalization of assets for FY 2020-21, FY 2021-22, FY 2022-23 and part Capitalization of FY 2023-24. Accordingly, the Commission has not considered any addition to GFA to the extent of utilization of LDCD Fund in these years. For rest of the period, the capitalization is assumed to be funded through debt and equity and hence eligible to claim depreciation, interest on loan and RoE."*

MSLDC humbly submits that the MSLDC prepares the present Petition following the directives of Hon'ble Commission with respect of utilization of LDCD fund and hence funding for capitalization during FY 2020-21 and FY 2021-22 has considered from the proceeds accumulated in LDCD (Load Despatch Center Development) fund created by the Hon'ble Commission.

So, as mentioned in the previous section, instead of considering actual depreciation as reflected in its Annual account, MSLDC has computed depreciation for FY 2020-21 and FY 2021-22 as per the rates derived based on actual depreciation for FY 2017-18 and related GFA. The gross fixed asset (GFA) as on 1.04.2018 has been considered for calculation of depreciation with considering no further capitalization as capitalization is funded through LDCD fund. The consumer software / IT equipment as capitalized in the previous years were also considered for depreciation @15%, as directed by Hon'ble Commission in its past orders. To this extent separate depreciation considered for Computer Software/IT equipment, same is presented in Form-4 attached with the petition. Thus, the variation in the value considered in Form-4 is derived depreciation and are not according to the allocation statement and audited account.

Against the approved depreciation of Rs. 142.40 Lakh (FY 2020-21) and Rs. 116.30 Lakh (FY 2021-

22), MLSDC claims the depreciation for truing up as Rs. 290.46 Lakh and Rs. 242.82 Lakh, respectively. The details are given below.

Table 26: Depreciation for FY 2020-21 and FY 2021-22

(Rs. Lakh)

Particulars	FY 2020-21			FY 2021-22		
	Approved in (Case No. 291 of 2019)	Actual	True-Up	Approved in (Case No. 291 of 2019)	Actual	True-Up
Depreciation	142.40	290.46	148.06	116.30	242.82	126.52

MSLDC humbly requests the Hon'ble Commission to allow the depreciation as claimed above. The details of the Depreciation for FY 2018-19 are provided in Form F-4 of the Petition Formats, submitted along with this filing.

4.6.Interest &Financial Charges

The interest on the existing actual loan for MSLDC has been repaid and hence, not considered further. 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 in previous section, the capitalization from FY 2018-19 is funded through LDCD fund and hence, no new additional normative loan has been considered. Further, MSLDC has considered the interest rate as per weighted average rate of interest on MSETCL loan portfolio as communicated by MSETCL which is 10.13% and 8.93% during FY 2020-21 and FY 2021-22. The depreciation, calculated above, is considered as loan repayment as per MYT regulations, 2019.

The detailed calculation for the Interest on Normative Loan for FY 2020-21 and FY 2021-22 is shown below:

Table 27: Interest on normative Loan for FY 2020-21 and FY 2021-22

(Rs. Lakh)

Particulars	Approved in (Case No. 291 of 2019)	Actual FY 20-21	Approved in(Case No. 291 of 2019)	Actual FY 21-22
Opening Balance of Net Normative Loan	994.40	1355.34	852.00	1064.88
Less: Reduction of Normative Loan due to retirement or replacement of assets				
Addition of Normative Loan due to capitalization during the year				
Repayment of Normative loan during the year	142.40	290.46	116.30	242.82

Particulars	Approved in (Case No. 291 of 2019)	Actual FY 20-21	Approved in(Case No. 291 of 2019)	Actual FY 21-22
Closing Balance of Net Normative Loan	852.00	1064.88	735.70	822.06
Average Balance of Net Normative Loan	923.20	1210.11	793.85	943.47
Weighted average Rate of Interest on actual Loans (%)	10.12%	10.13%	10.12%	8.93%
Interest Expenses	93.43	122.58	80.34	84.25
Actual loan payment		0.00		0.00
Total Interest & Financing Charges	**93.43**	**122.58**	**80.34**	**84.25**

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.

4.7.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 linked to actual performance:

Provided further that Additional Return on Equity shall be allowed at time of truing up for respective year based on actual performance, after prudence check of the Commission:"

MSLDC would like to consider the observations of the Hon'ble Commission related to Return on Equity as given below.

"5.9.8 Considering the provisions of the said Regulations, presently MSLDC is eligible for base Return on Equity @ 14% for MYT Control period i.e. FY 2020-21 to FY 2024-25. The additional RoE can be claimed by MSLDC at the time of truing up for the relevant years.

5.9.9 The MYT Regulations, 2019 presently do not specify any performance parameters for

MSLDC as it does for other generators and licensees for claiming the performance linked RoE at the time of truing up. Accordingly, it is important to identify performance parameters which highlight the level of performance of MSLDC operations and at the same time, these parameters should be measurable / quantifiable and verifiable.

5.9.10 Such performance parameters have been identified by the CERC for the National and Regional Load Despatch Centres in the CERC (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2019. The performance parameters have been categorised into four categories viz. Stakeholder satisfaction, financial prudence, learning & growth and internal processes and weightages have been assigned to each of these parameters. POSOCO has been assigned the responsibility of preparing a detailed procedure for calculations of specific metrics for the key performance indicators. Similarly, the previous CERC (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2015 also had an identified set of performance indicators for the National and Regional Load Despatch Centres. Based on these Regulations, the performance of WRLDC was assessed and the performance linked incentives for the FY 2017-18 was decided by CERC vide its Order dated 28 June, 2019.

5.9.11 In addition to the above, The Forum of Regulators (FOR) issued a report on Capacity Building of Indian Load Despatch Centres (CABIL) in December 2018 which also identified the Key Performance Indicators (KPI) for the Indian Load Despatch Centre. These KPIs are structured into 4 dimensions for measuring the overall performance: Stakeholder satisfaction; Learning and Growth; Adequacy and Efficiency of Internal Process; and Financial prudence. Different weightages can be assigned to each of these dimensions such that the total weight comes to 100%. However, presently there is no framework for measurement and validation of these KPIs in place.

5.9.12 Accordingly there are various different KPIs identified by CERC and FOR for measuring the performance of the Load Despatch Centre, however, it is important for MSLDC also to study these KPIs and come up with its recommendations regarding the KPIs which can be considered by the Commission for linking it to the recovery of performance linked RoE. The recommendations could be accompanied with an entire framework for measuring, comparing and validating the KPIs.

5.9.13 In view of the above discussion, the Commission hereby directs MSLDC to approach the Commission with the proposal to fix the performance norms or Key Performance

Indicators based on which MSLDC will be entitled to claim Additional RoE of 1.5% at the time of truing up within 3 months of this Order."

In this context, it is humbly submitted that MSLDC has already submitted the proposal before the Hon'ble Commission for kind consideration vide its letter dated CE/MSLDC/Airoli/ No. 00683 dated 16.04.2022. The detailed rational with performance indicators has been submitted. The proposal given buy the Petitioner is: if MSLDC achieved 85 % of the actual target, then MSLDC will be entitled to claim additional RoE of 1.5 %. On the basis of Performance Evaluation on Key Result Areas (KRAs), following weighted has been proposed.

- Stakeholder Satisfaction – 47%
- Adequacy and Efficiency of Internal Processes – 28%
- Financial Prudence -15%
- Learning and growth aspects -10%

However, the proposal is not approved till now. Without approval on the said mechansim proposed by the Petitioner, RoE @ 14 % (base RoE only) has been considered. Further, as explained earlier, no additional equity has been considered as funding for capitalization is considered from LDC development fund. The Return on Equity for FY 2020-21 and FY 2021-22 is shown in Table below:

Table 28: Return on Equity for FY 2020-21 and FY 2021-22

(Rs. Lakh)

Particulars	**Approved in (Case No. 291 of 2019)**	**Actual FY 20-21**	**Approved in(Case No. 291 of 2019)**	**Actual FY 20-21**
Regulatory Equity at the beginning of the year	1267.45	1589.27	1267.45	1589.27
Equity portion of capitalization during the year				
Reduction in Equity Capital on account of retirement / replacement of assets				
Regulatory Equity at the end of the year	1267.45	1589.27	1267.45	1589.27
Return on Equity Computation				
Return on Regulatory Equity at the beginning of the year @14% (base RoE)	177.44	222.50	177.44	222.50
Return on Regulatory Equity addition during the year				

Particulars	Approved in (Case No. 291 of 2019)	Actual FY 20-21	Approved in(Case No. 291 of 2019)	Actual FY 20-21
Total Return on Equity	**177.44**	**222.50**	**177.44**	**222.50**

MSLDC humbly requests the Hon'ble Commission to approve above expenses towards Return on Equity. The additional RoE of 1.5% will be claimed with detailed information once the proposal is approved by the Hon'ble Commission. The details of the Return on Equity for FY 2020-21 and FY 2021-22 have been provided in Form F- 9 of Petition Formats.

4.8.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 liberty to submit the relevant details, if required. In view of above, MSLDC has not claimed Income Tax.

4.9.Non-Tariff 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 increase in the actual Non-Tariff Income is due to the interest income earned on the Investment made by MSLDC in the past years. Vide BR No. 97/12 dated 2nd February, 2015 and subsequent note approved by MSETCL management dated 14 July, 2015, it was proposed that MSLDC should invest fund in flexi deposit in Bank and earn interest on such deposits. On account of such investments made by MSLDC in the past years, MSDLC earned an interest income. However, the interest income is not considered as non-tariff income as discussed in Case No. 291 of 2019, as mentioned in the previous section. The same approach has been followed and MSLDC has not considered income from fixed deposits towards non-tariff income. Further, the Hon'ble Commission had instructed to include the interest earned from LDCD fund. The details of LDCD fund and details of such interest income is given at the end of this section. The same is considered as part of non-tariff income. 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 also given in Form F-10 of Petition Formats.

Table 29: Non-Tariff Income for FY 2020-21 and FY 2021-22

(Rs. Lakh)

Particulars	FY 2020-21			FY 2021-22		
	Approved in (Case No. 291 of 2019)	Actual	True-Up Requirement	Approved in (Case No. 291 of 2019)	Actual	True-Up Requirement
Non-Tariff Income	210.71	456.04	245.33	124.56	357.75	233.19

4.10. 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 of Rs. 854.33 Lakh for FY2020-21 and Rs. 1572.47 Lakh for FY 2021-22 including Rescheduling Charges. The rebate given to the consumers is also included in this income.

Table 30: Income from Open Access charges for FY 2020-21 and FY 2021-22

(Rs. Lakh)

Particulars	FY 2020-21			FY 2021-22		
	Approved in (Case No. 291 of 2019)	Actual	True-Up Requirement	Approved in (Case No. 291 of 2019)	Actual	True-Up Requirement
Income from open access charges (scheduling, re-scheduling and rebate)	1156.68	854.33	-302.35	1179.81	1572.47	392.66

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 of FY 2021-22. 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.

4.11. Income from Monthly Operating Charges

MSLDC has received actual income from Monthly Operating Charges of Rs. 3388.77 Lakh for FY 2020-21 and Rs. 3211.24 Lakh for FY 2021-22. 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. 291 of 2019. The details are given below.

Table 31: Income from Monthly Operating Charges for FY 20-21 and FY 2021-22

(Rs. Lakh)

Particulars	FY 2020-21			FY 2021-22		
	Approved in (Case No. 291 of 2019)	Actual	True-Up Requirement	Approved in (Case No. 291 of 2019)	Actual	True-Up Requirement
Income from Monthly Operatin g charges	3391.60	3388.77	-2.83	3208.57	3211.24	2.67

The details of the Monthly Operating Charges for are provided in Form F-12 of Petition Formats.

4.12. Summary of True-Up for FY 2020-21 and FY 2021-22

In the Hon'ble Commission's Order, in Case No.291 of 2019, the ARR forecast for FY 2020-21 and FY 2021-22 was Rs. 3391.60 Lakh and Rs. 3208.57 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 32: Truing -Up for FY 2020-21 and FY 2021-22

(Rs. Lakh)

FY 2020-21

Sr. No.	Particulars	Approved	Actual	Deviation	Net Entitlement after sharing of gains/(losses)
1	Operation & Maintenance Expenses	3403.73	3025.96	- 377.77	2800.49
2	RLDC Fees and WRPC Charges	874.41	511.83	-362.58	511.83
3	Depreciation Expenses	142.40	290.46	148.06	290.46
4	Interest on Loan Capital	93.43	122.58	29.15	122.58
5	Interest on Working Capital	67.58	54.53	-13.05	18.18
6	Reactive Energy Charges paid to Generators/TSUs	0.00	0.00	0.00	0.00
7	Income Tax	0.00	0.00	0.00	0.00
8	**Total Revenue Expenditure**	4581.55	4005.35	-576.20	3743.53
9	Return on Equity Capital	177.44	222.50	45.06	222.50
10	**Total Expenditure for MSLDC**	4758.99	4227.85	-531.14	3966.03

Sr. No.	Particulars	Approved	Actual	Deviation	Net Entitlement after sharing of gains/(losses)
11	Less: Non-Tariff Income	210.71	456.04	245.33	456.04
12	Less: Income from Open Access charges	1156.68	854.33	-302.35	854.33
	Less: Income from Reactive Energy Charges	0.00	0.00	0.00	0.00
13	**Annual Fixed Charges for MSLDC**	3391.60	2917.48	-474.12	2655.66
14	**Revenue**	3391.60	3388.77	-2.83	3388.77
15	**Revenue Gap/(Surplus)**	**0.00**	**-471.29**	-471.29	**-733.11**

FY 2021-22

Sr. No.	Particulars	Approved	Actual	Deviation	Net Entitlement after sharing of gains/(losses)
1	Operation & Maintenance Expenses	3021.35	3453.80	432.45	3116.32
2	RLDC Fees and WRPC Charges	1055.16	584.98	-470.18	584.98
3	Depreciation Expenses	116.30	242.82	126.52	242.82
4	Interest on Loan Capital	80.34	84.25	3.91	84.25
5	Interest on Working Capital	62.35	53.76	-8.59	17.92
6	Reactive Energy Charges paid to Generators/TSUs	0.00	0.00	0.00	0.00
7	Income Tax	0.00	0.00	0.00	0.00
8	**Total Revenue Expenditure**	4335.50	4419.61	84.11	4046.29
9	Return on Equity Capital	177.44	222.55	45.06	222.50
10	**Total Expenditure for MSLDC**	4512.94	4642.11	129.17	4268.79
11	Less: Non-Tariff Income	124.56	357.75	233.19	357.75
12	Less: Income from Open Access charges	1179.81	1572.47	392.66	1572.47
	Less: Income from Reactive Energy Charges	0.00	0.00	0.00	0.00
13	**Annual Fixed Charges for MSLDC**	3208.57	2711.89	-496.68	2338.56
14	**Revenue**	3208.57	3211.24	2.67	3211.24
15	**Revenue Gap/(Surplus)**	0.00	-499.36	-499.36	**-872.68**

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

Thus, on final truing up for FY 2020-21 and FY 2021-22, there is surplus of Rs. 733.11 Lakh and Rs. 872.68 Lakh, respectively, treatment of which has been discussed as given below.

4.13. 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 are given below.

Table 33: LDCD fund for FY 2020-21 and FY 2021-22

(Rs. Lakh)

Particulars	**Amount allocated to the LDCD fund FY 2020-21**	**Amount allocated to the LDCD fund FY 2021-22**
LDCD fund at the starting of year	5762.15	6313.85
Revenue Gap / (Surplus) of the Year as submitted in the present Petition	-733.11	-872.68
Utilisation of LDCD Fund	181.42	800.69
LDCD fund at the end of year	6313.85	6385.84
Average LDCD fund	6038.00	6349.84
Interest rate	6.04%	5.20%
Income earned on LDCD fund – transferred to non-tariff income	364.70	330.19

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.

4.14. Indicative True-up for FY 2019-20 to FY 2021-22 as per Approved GFA

As mentioned above, the Petitioner has considered the GFA as per its audited account. If the Hon'ble Commission's approved GFA has been considered as per MYT order (Case No 291 of 2019), the indicative true-up values would be as follows.

Sr. No.	Particulars	FY 19-20	FY 20-21	FY 21-22
1	Operation & Maintenance Expenses	2550.91	2800.49	3116.32
2	RLDC Fees and WRPC Charges	498.59	511.83	584.98
3	Depreciation Expenses	167.01	142.40	116.30
4	Interest on Loan Capital	104.10	79.14	67.48
5	Interest on Working Capital	18.10	18.18	17.92
6	Reactive Energy Charges paid to Generators/TSUs	0.00	0.00	0.00
7	Income Tax	0.00	0.00	0.00
8	**Total Revenue Expenditure**	3338.71	3552.03	3902.99
9	Return on Equity Capital	196.45	177.44	177.44
10	**Total Expenditure for MSLDC**	3535.16	3729.47	4080.43
11	Less: Non Tariff Income	411.58	456.04	357.75
12	Less: Income from Open Access charges	1365.87	854.33	1572.47
	Less: Income from Reactive Energy Charges	0.00	0.00	0.00
13	**Annual Fixed Charges for MSLDC**	1757.71	2419.10	2150.21

Sr. No.	Particulars	FY 19-20	FY 20-21	FY 21-22
14	**Revenue**	2902.08	3388.77	3211.24
15	**Revenue Gap/(Surplus)**	-1144.37	-969.67	-1061.04

5. Provisional True-Up for FY 2022-23

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. As per Regulation 3.1 of MYT Regulations, 2019, 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, 2019 including MSLDC.

Regulation 4.2 of MYT Regulations, 2019 has given the details of multi-year framework and details of multi-year and mid-term tariff petition. The relevant provisions are given below.

> *"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, Transmission Licensees, Distribution Wires Business, Retail Supply Business, and Fees and Charges of MSLDC:*
>
> *(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, 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 Licensee or MSLDC:*
>
> *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, Transmission Licensees, Distribution Wires Business, Retail Supply Business, and MSLDC by the Commission for each year of the Control Period, at 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 for the Control Period;*
>
> *(iii) Petition for Mid-term Review of operational and financial performance vis-à-vis the approved forecast for the first three years of the control period; and revised forecast of Aggregate Revenue Requirement, expected revenue from existing Tariff, expected revenue gap, and proposed category-wise Tariffs for the fourth and fifth year of the Control Period,*

shall be submitted by the Generating Company or Licensee or MSLDC;

(iv) True-up for the first and second years of the Control Period based on the audited accounts and provisional true-up for the third 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 Licensee or MSLDC along with its Petition for Mid-term Review;

(v) Determination of the revised Aggregate Revenue Requirement and Tariff or Fees and Charges for Generating Companies, Transmission Licensees, Distribution Wires Business, Retail Supply Business, and MSLDC by the Commission for the fourth and fifth year of the Control Period based on the Mid-term Review;"

Following the same provision, the present Multi-Year Tariff Petition comprises of forecast of Aggregate Revenue Requirement, expected revenue from existing Fees and Charges, expected revenue gap, and proposed Fees and Charges for each year of the Control Period, i.e. from FY 2020-21 to FY 2024-25.

Part I of MYT Regulations, 2019 has detailed out the provisions related to 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 present petition and the detailed of each component of Aggregate Revenue Requirement is given below.

5.1.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:

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 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.

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 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, where base year expenses is mentioned as for FY 2019-20. The Petitioner humbly submits that, O&M expenses due to wage revision is increased and employee expenses as per new scale has been considered in FY 2020-21 and FY 2021-22. However, in FY 2019-20, employee salary with new scale had been paid from October month only; hence, full year employees expenses with new scale is not captured. Therefore, the Petitioner has considered average O&M expenses, before gain and loss, and after deducting wage revision arrear payment of FY 2020-21 and FY 2021-22 as base O&M expenses for FY 2020-21. The Petitioner requests the Hon'ble Commission to consider the above mentioned approach and relax the provisions under 'Regulations 105: Power to Relax'. Without this approach, the projected expenses would be lower than actual expenses of FY 2021-22, which is not possible. This is also due to fact that the O&M expenses after gain/loss has been reduced significantly due to different setting of normative expenses. This has been already requested in the last chapter.

Further, for projecting the O&M expenses for FY 2021-22 and FY 2022-23, the escalation factors of 3.57% and 4.17%, respectively has been considered. The escalation factor is derived after considering the WPI and CPI of relevant year and after deducting 1% from the resultant escalation factor.

For deriving inflation factors, the Commission has considered the WPI and CPI index of past five years. It has observed that the Labour Bureau, an attached office of the Ministry of Labour & Employment, Government of India, has released the new series of Consumer Price Index for Industrial Workers (CPI-IW) with base year 2016. The new series of CPI (IW) with base 2016=100 has replaced the existing series with base 2001=100. In the Press Information Bureau (PIB) release dated 22 October 2020[1], it was noted that 2.88 would be the linking factor vis-a-vis the new series with the old series. The relevant section is reproduced below.

> *"Shri D.P.S.Negi, Director General, Labour Bureau said that the linking factor of new series 2016=100 to old series of CPI-IW (2001=100) is 2.88."*

The CPI index is modified accordingly to consider all data with base 2001=100.

Table 34: WPI and CPI index of past five years and derived escalation factor

Particulars	**FY 2016-17**	**FY 2017-18**	**FY 2018-19**	**FY 2019-20**	**FY 2020-21**	**FY 2021-22**
WPI						
Index	111.6	114.9	119.8	121.8	123.4	139.4
Growth / inflation	1.73%	2.96%	4.26%	1.67%	1.31%	12.97%
Average of five years					*2.39%*	*4.63%*
CPI						
Index	276.00	284.00	300.00	323.00	339.84	357.12
Growth / inflation	4.15%	2.90%	5.63%	7.67%	5.21%	5.08%
Average of five years					*5.11%*	*5.30%*
Weighted average					**4.57%**	**5.17%**
Effective escalation factor after 1% reduction					3.57%	4.17%
Above rate use to determine the expenses for					FY 21-22	FY 22-23

So, for projecting the provisional true-up figure for FY 2022-23, MSLDC considers the O&M expenses of FY 2020-21 as base (average of FY 2020-21 and FY 2021-22) and escalated the same with relevant escalation factors, which is derived as the provision with CPI: WPI weightage for 80: 20 has to be considered. On the basis of above, it is humbly requested to approve the approach considered by the Petitioner.

Further, additional O&M expenses (over and above as per projection methodology stated above) for

[1] https://pib.gov.in/PressReleasePage.aspx?PRID=1666782

the following schemes, which are actually newly added in SLDC functioning, is requested by the Petitioner.

Table 35: Additional O&M Expenses for FY 2022-23 to FY 2024-25

(Rs. Lakh)

Sr. No.	Scheme name/Year	OPEX (Rs. Lakhs)			Remarks		
		2022-23	2023-24	2024-25		Cost benefit analysis of scheme as against capex schemes	Savings in O&M expenses, if any
1	Demand Forecasting Services	0	44.84	44.84	It is proposed that the Demand Forecasting Services shall be availed from expert vendors for 3 years. In this proposal, the vendor shall develop State specific Demand Forecasting model and provide Month-ahead, Week-ahead, Day-ahead & Intra-Day demand forecasts for the State. The system shall be web-based, hence, no infrastructure will be required.	It is proposed to avail forecasting services from the vendor. Hence, demand estimation will be carried out with scientific methods at MSLDC. This forecast will be base for comparing the demand estimates carried out by various Discoms. Also, such forecast shall be available to take appropriate measures so as to reduce additional Deviation penalties and sign change violation penalties. By comparing demand estimates through this scheme with estimates by Discoms on the basis of actual catered demand corrective actions can be taken by the Discoms while demand estimation which shall further reduce penalties on the State. Further, the demand forecasting services shall enable MSLDC to dispatch generators in the Grid more techno-commercially and enhance the performance of the System Operators to maintain stable & reliable grid in real time. At the same time, it shall be beneficial in the interest of end consumers. Also, the work is proposed in order to fulfil the regulatory requirements of the IEGC, 2010 as	As this scheme is purely meant for reliable & secure grid operations in teal time by anticipating demand variations in advance, no any existing O&M expenses will be saved.

Sr. No.	Scheme name/Year	OPEX (Rs. Lakhs)			Remarks		
		2022-23	2023-24	2024-25		Cost benefit analysis of scheme as against capex schemes	Savings in O&M expenses, if any
						amended from time to time and the MERC (State Grid Code), Regulations, 2020 thereof. Hence, with the implementation of the said scheme, grid operations will be more smoothened.	
2	Alert Messaging System	0	11.8	17.7	On the backdrop of Mumbai Grid failure on 12.10.2020, for streamlining the communication among various stake holders under emergencies and for broadcasting System Alerts, it is proposed to develop said system. It is proposed to develop the Software and host the same on Cloud. Under OPEX, the cost of Cloud services, AMC, SMS charges, etc. has been proposed.	Presently, there is no any mechanism available at MSLDC to generate alerts based on system conditions and issue instructions at large No. of stake holders at single instance. Only telephonic & e-mail communication is available for transmitting such information which is very time consuming and having lapses of mis-communication. If the said scheme is implemented, all the stake holders will be made alert whenever system is in alert mode so as to avoid any partial or full grid disturbance. Any single grid disturbance wherein large quantum of load loss or loss of supply to large no of consumers, generation instability resulting in to damage to any generator, etc, is expected, if avoided, the cost benefit can be obtained which is very high compared to cost of the Scheme. With the implementation of the said scheme performance of the System Operators to maintain stable & reliable grid in real time will be enhanced. At the same time, it shall be beneficial in the interest of large no. of end	As this scheme is purely meant for reliable & secure grid operations in teal time by intimating the alertness of the grid to all the stake holders in the State in advance, no any existing O&M expenses will be saved.

Sr. No.	Scheme name/Year	OPEX (Rs. Lakhs)			Remarks		
		2022-23	2023-24	2024-25		Cost benefit analysis of scheme as against capex schemes	Savings in O&M expenses, if any
						consumers due to avoidance of any power failure.	
3	RE Forecasting Services	34.25	46.13	87.69	As per the Regulation No. 5.12 of the MERC (Forecasting, Scheduling & Deviation Settlement for Solar & Wind Generation) Regulations, 2018, MSLDC is mandated to carry out RE Forecasting. Accordingly, RE forecasting is carried out in REMC System through external agencies. For 66 Nos. of PSS, the charges are covered under grant, whereas for additional PSS, the charges are to be borne by MSLDC. Hence, these charges have been proposed in the OPEX. Presently, total 128 Nos. of PSS is being carried out. As day by day RE installation is increasing, the no. of PSS will increase. Hence, the cost is increasing every year. The grant is available till Dec' 2023. Hence, from Jan-2024, the forecasting charges for all the PSS is to be borne by MSLDC. Hence, there is increase in the cost for the year 2024-25.	Prior to the implementation of RE F&S framework, forecast of RE generation was not available. Now Week ahead, Day ahead and Intra-day RE Forecast is available for operational purpose of the grid in advance and also in real time. RE Generation forecasts & trends are available to MSLDC Control Room Engineers. Hence, by observing the trends, grid operations are managed in real time. The conventional generators & Hydro generators are scheduled according to the RE forecasts. During 'Nisarga Cyclone' (2nd & 3rd June'2020) & 'Tauktae Cyclone' (15th to 18th May'2021), the forecast of Wind Generation was available in advance, based on which Grid operations were managed on Day ahead & in Real time. The advantage of forecasting was, maximum RE was accommodated in the Grid during 'Tauktae' Cyclone. Also, minimum RE curtailment was carried out during 'Nisarg' Cyclone as a last resort. During Solar Eclipse dated 21-06-2020, the eclipse impact was known in advance so that the corrective measures for ramping of conventional and hydro generation was carried out.	As this scheme is purely meant for reliable & secure grid operations in teal time by anticipating RE variations in advance, no any existing O&M expenses will be saved.

Sr. No.	Scheme name/Year	OPEX (Rs. Lakhs)			Remarks		
		2022-23	2023-24	2024-25		Cost benefit analysis of scheme as against capex schemes	Savings in O&M expenses, if any
						Thus, with the RE Forecasting, techno-commercial dispatch of conventional generators can be carried out. Also, any RE curtailment can be avoided with known forecasted generation. This in turn will provide the cost benefit for the whole State.	
4	Dynamic Stability Study for Mumbai Islanding	0	97.94	0	On the backdrop of Mumbai Grid failure on 12.10.2020, all the Committees viz. High Level Committee (HLC), CEA & GoM, has recommended to validate various relay settings in Mumbai Islanding Scheme through Dynamic Stability Studies. Hence, budgetary offers from IIT-B, VJTI & Siemens were called and based on the comparative statement, administrative approval has been received from the Competent Authority for providing Order to VJTI for carrying out said studies.	Mumbai is the financial capital of India having high importance in the growth of the Country & State. Any power failure in Mumbai due to Grid disturbance is hampering the business as well as the image of the State & Country. For avoiding the recurrence of partial grid failure occurred on 12.10.2020 resulting in to power failure in MMR & Mumbai area, it is necessary to validate the relay settings of the Mumbai Islanding Scheme through studies. With the studies, appropriate settings for various relays i.e. UFR, ROCOF for Load shedding in island, relay settings to avoid tripping of internal generating units, will be obtained through which Mumbai island would be survived. Thus, with execution of the said scheme, Mumbai Islanding Scheme settings can be validated and modified, thereby increasing the survival of the island operation thereby increasing the reliability and reduction of load loss in the financial capital of the Country.	As this scheme is purely meant for reliable & secure grid operations in teal time in Mumbai, no any existing O&M expenses will be saved.
5	AMC of SCADA	51.71	78.84	66.72	The total cost for AMC of SCADA for ALDC Ambazari and SLDC Airoli	The scheme is not like above OPEX schemes, the claimed expenditure is additional	It is O&M expenses only.

Sr. No.	Scheme name/Year	OPEX (Rs. Lakhs)			Remarks		
		2022-23	2023-24	2024-25		Cost benefit analysis of scheme as against capex schemes	Savings in O&M expenses, if any
	system (Netra-240)				was Rs 7,41,357/- per Quarter. After the expiry of AMC period new order is placed for the period 7/07/2022 to 6/07/2025 for 3years. The rate for first two year is 27,12,447.12/- per quarter including taxes. And for third year is Rs 24,09,580/- per quarter. The increase in cost in year 22-23 is Rs 51,71,910/-, in year 23-24 is Rs 78,84,357/- and in year 24-25 Rs 66,72,891/-. The reason for increase in cost are given below: A) The previous AMC order prices are more than 8 years old and entire system is supplied in 2008-09 and system was commissioned in 2013. Entire hardware under AMC is has already reached end of Life. B) The arranging support for this aged system is costly affair, since many components are already obsolete and effort required for any trouble shooting and other operation error are exorbitantly higher than normal AMC. The cost of hardware support is increased more than 3 times due to above reason. C) Due to aged system, as per experience of last two years, multiple times rise in repair failures in the system/Components. This has resulted in increase of manpower support	expenditure with respect to present AMC cost. Hence, additional O&M cost is claimed. So, comparison with respect to capex is not applicable. It can be termed as additional O&M expenditure and not purely OPEX scheme.	

Sr. No.	Scheme name/Year	OPEX (Rs. Lakhs)			Remarks		
		2022-23	2023-24	2024-25		Cost benefit analysis of scheme as against capex schemes	Savings in O&M expenses, if any
					exponentially compared to earlier AMC period and greater number of failures anticipated in future, resulting in increased the manpower support. The manpower power cost is also more than three times from 2015 to 2022. Further, apart from the scope of AMC of SCADA 4.5.1, the Vendor has also included following scope: Possible VAPT compliance every year, CSRP connectivity for remote connection, additional cyber security through web application firewall.		
6	AMC of SCADA system(T-4)		25	25	Comprehensive AMC for additional hardware equipment's 10 Nos of SUN SPARC T4-1 servers and software for SINAUT Spectrum SCADA Systems at SLDC Airoli and ALDC Ambazari for the period of 2 Years. The CAMC period is 29/01/2021 to 28/01/2023. The CAMC rate was Rs 6,32,468 per Quarter including taxes. The revised rate for increase in cost of CAMC consider for year is Rs 1250000/- per quarter for year 23-24 and 24-25. The increment in cost of CAMC is by 25lakh in FY 23-24 and FY 24-25.	The scheme is not like above OPEX schemes, the claimed expenditure is additional expenditure with respect to present AMC cost. Hence, additional O&M cost is claimed. So, comparison with respect to capex is applicable. It can be termed as additional O&M expenditure and not purely OPEX scheme.	It is O&M expenses only.
Total (Rs. Lakhs)		**85.96**	**304.55**	**241.95**			

In this context, the expense of FY 2022-23 is projected as below. The Operation and Maintenance (O&M) expenses approved by the Hon'ble Commission for FY 2022-23 in Case No. 291 of 2019 and the expenses projected by MSLDC are summarized in Table as below:

Table 36: O&M Expenses for FY 2022-23

(Rs Lakh)

Sr. No.	**Particulars**	**FY 2022-23**		
		Approved in Case No. 291 of 2019	**April - March (Estimated)**	**Provisional True-Up Requirement**
1.	Normative O&M Expenses		3326.50	
2.	Additional O&M Expenses		85.96	
3.	Total O&M Expenses	3117.88 (including impact of wage revision)	3412.46	294.58

As per CABIL report, MSLDC already has separate HR (employee) expenses and will try to give emphasis on training expenses. 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 2022-23.

5.2.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 2022-23. 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 loan from any outside agency. The same approach was approved by Hon'ble Commission in its earlier orders. For FY 2022-23, the SBI base rate (MCLR) prevailing as on the date of filing the petition (8.05% applicable for Nov-22) with 150 basis point has been considered.

Table 37: Interest on Working Capital for FY 2022-23

(Rs. Lakh)

Sr. No.	**Particulars**	**FY 2022-23**		
		Approved in Case 291 of 2019	**Estimated**	**Prov True Up Requirements**
1.	**Working Capital Requirement**	694.77	675.66	
2.	Rate of Interest (% p.a.) - SBI Base Rate (MCLR) plus 150 basis points	9.55%	9.55%	
3.	**Interest on Working Capital**	66.35	64.53	-1.82

5.3.RLDC Fees

RLDC Fees and Charges for FY 2022-23 has to be decided as per Central Electricity Regulatory Commission (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2019. WRLDC has filed a petition before Hon'ble CERC for determination of WRLDC charges for FY 2019-20 to FY 2023.24 and Hon'ble CERC has issued the order on 09.06.2021 (Petition No.400/MP/2019). WRLDC is currently billing the users as per the said order. As per present mechanism, MSEDCL has been paying the bill to WRLDC and MSLDC is reimbursing the same to MSEDCL. Considering the average monthly expenses for Jan –March 2022 period, RLDC charges for FY 2022-23 have been estimated. The same is given below.

Table 38: RLDC Fee for FY 2022-23

(Rs. Lakh)

Particulars	Approved in Case 291 of 2019	Estimated	Provisional True Up Requirements
RLDC Fees	1195.43	651.52	-543.91

Accordingly, MSLDC requests the Hon'ble Commission to approve RLDC Fees and WRPC Charges for FY 2022-23. The details of RLDC Fees and WPRC Charges are also provided in Form F-7 of Petition Formats.

5.4.Capital Expenditure Plan and Capitalization

The Hon'ble Commission in Case No.291 of 2019 has approved capitalization amount of Rs. 1203 Lakh for FY 2022-23. MSLDC has now revised its capitalization estimates for FY 2022-23 considering capitalization anticipated of various existing as well as new schemes during the year. Accordingly, for the purpose of provisional truing up of FY 2022-23, MLSDC proposes a revised estimate for capitalization to the tune of Rs. 1169.41 Lakh.

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

Table 39: Revised Capex and Capitalization for FY 2022-23

(Rs. Lakh)

Project Code	Capital expenditure	Capitalisation
a) DPR Schemes		
(i) In-principle approved by MERC		
SLDC - SITC of 80 RTU	24.78	32.95
S/I/T/C of auto FSS and MS at ALDC Ambazari	115.85	226.79
70 SAS/ RTUs integration	100.00	60.00
DSM	107.00	
(ii) Yet to receive in-principle MERC approval		
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b) Non-DPR Schemes		

Project Code	Capital expenditure	Capitalisation
RTU-DC SLDC Airoli and Ambazari (two schemes jointly)		0.73
S/I/T/C of electric wiring and A/c Equipment		0.13
S/I/T/C of 3 DCs	13.27	44.24
S/I/T/C 2 No of elevator at MSLDC Airoli	15.27	38.18
Vehicle parking shed	20.20	20.20
S/I/T/C of New 240 line digital EPBAX	6.30	6.30
DG set with DDC in new SLDC building	62.61	62.61
S/I/T/C of video wall display unit 2X2	51.49	51.49
S/I/T/C of 7 No of Backup appliance	99.50	99.50
S/I/T/C of 7 No of desktop computer with MS office licence	8.09	8.09
S/I/T/C of anti-virus software along with server	15.00	15.00
S/I/T/C of video conferencing system at SLDC conference room	16.00	16.00
Development of new MSLDC website and hosting on cloud	10.00	10.00
7 LED screen at control room to show operational data	49.00	49.00
Integration of 20 DC at SLDC Airoli and ALDC	70.00	70.00
S/I/T/C VC at control room	22.34	22.34
Integration of NEW S/S at SLDC Airoli and ALDC SCADA (27 RTU integration)	20.00	
PSSE system study software (2nd keys)	49.00	49.00
State specific customization in REMC software and allied additional requirement of hardware through change order	70.80	70.80
Life extension of new MSLDC building	47.06	47.06
Staff recreation and rejuvenation facilities	45.00	45.00
BMS Automation	90.00	90.00
Battery set with charger	10.00	10.00
Security cabin	3.00	3.00
ALDC Misc expenses - landscaping, water supply, Testing equipment, VC, staff recreation	16.00	16.00
ALDC IT infrastructure	5.00	5.00
Total	**1162.56**	**1169.41**

80 RTU / 70 RTU Scheme: the project was initiated in 2017. After tendering and negotiation, the rate contract order for service towards integration of 150 RTU SAS at the unit rate of 3 lakhs plus GST 18% was placed on M/s Siemens. As per BR no 1035 for SITC of 80 RTU, budget provision of Rs 5.10 Cr for hardware and software at control centre (SLDC portion) in SLDC capital expenditure budget is approved. Then this 5.10 Cr for 80 RTU scheme was short closed for Rs 2.83 Cr for 80 RTU scheme and balance 2.48 Cr was allotted to 70 SAS integration work as 70 RTU integration scheme at SLDC.

Two work orders were issued against 80 RTU scheme and work completed for 36 Nos RTUs (against 39 RTUs) and 34 Nos RTUs (against 38 RTUs). Hence, balance provision of Rs. 24.78 Lakh has to be made for year 2022-2023 as 7 nos of balance RTU integration is expected in FY 2022-23 and total capitalization is proposed in FY 22-23.

For 70 RTU scheme, which is DPR scheme, two work orders were issues. 7 RTU integration order of Rs. 24.78 lakh (capitalized in FY 21-22) and 63 RTU integration order, which would be capitalized in FY 22-23 and FY 23-24. The work is in progress.

DSM scheme: Hon'ble MERC has issued Suo-motu Order in the matter of Commercial implementation of the MERC (Deviation Settlement Mechanism and related matters) Regulations, 2019, post expiry of stabilization period and related issues thereof dated 02.08.2022. Vide this order, the Hon'ble Commission has directed MSLDC to update DSM software by incorporating the principle stipulated in the MERC Suo-motu order dated 02.08.2022. Following is the gist of changes to be done in DSM software for DSM billing point of view:

1. Replacement of actual generation of RE generators in schedule of corresponding buyers:

Hon'ble MERC has directed MSLDC to replace the RE schedule in buyers' drawl schedule by RE actual generation till the RE generators are brought under schedule-based payment regime through a separate regulatory process. Further directed that such post facto replacement should be based on metered energy for PSS wise RE Generators (wind and solar) connected at InSTS. Same treatment should be given to the Bagasse based Cogeneration plants.

In addition to above, it is also directed that incremental ADSM charges due to RE schedule replacement by RE actual injection in Buyer's drawl schedule should be waived off by MSLDC and DSM Pool should be funded for this shortfall from REDSM pool. Thus, MSLDC has to compute these incremental charges and show the corresponding amount in the bills to be raised on the buyers, however, the buyers are not be required to pay these incremental charges to MSLDC from the date of commercial implementation of DSM Regulations i.e., 11 October 2021 till a further Order issued in this regard by the Commission.

2. Treatment for actual Hydro generation in schedule of corresponding buyers:

Hon'ble MERC has directed for the hydro deviations shall be accounted through VSE at rate for VSE (Up/Down) of Hydro = variable cost of such hydro resource or DSM + ADSM charges at State periphery, whichever is higher. The quantum for Quantum for VSE for Hydro is difference of actual block generation and Decentralized Schedule of Hydro.

3. Rate for compensation under VSE operation excluding Hydro:

Rate for VSE compensation is Energy Charge under PPA with Distribution Licensee including Fuel Surcharge Adjustment (in case of thermal plants) as considered for the purpose of MOD stack for the applicable period. This rate is to be made effective from 11.10.2021 onwards.

Further, power exchange market is also evolved with day ahead & real time power trading in Green Energy. Also, Hindustan Power Ex-change (HPX) is introduced as a new power exchange in which power trading is started from 27.07.2022. All these changes are need to be incorporated in scheduling software as well.

The above modifications are to be carried out in Scheduling and Energy Accounting modules of DSM software and hence the related cost is projected.

Auto FSS and MS at ALDC Ambazari: The scheme was approved by the Hon'ble Commission and the scheme is being implemented. The Petitioner initially considered Rs 48.47 Lakh as per original scope. However, in FY 2022-23, there was a need for additional work as per suggestions made by Chief Fire Officer, MSETCL. For that reason, MSLDC already informed the Hon'ble Commission about this additional work (Rs. 67.38 Lakh) vide letter no CELDK/Maint/FM-28/No 1282 dated 21.07.2022.

Purchase of 3 no. of DCs: A scheme of 3 nos. of DCs has been prepared to show CPP/IPP, SOLAR and WIND/ Bagasse data to Control Room Operators as existing DCs have expired their useful life. The scheme amounting to Rs 49.56 Lakhs. For this purpose, a work order was placed amounting to Rs 44.24 Lakhs. The vendor has supplied the 3 DCs at SLDC, Airoli. Budget provision is proposed of Rs 44.24 Lakhs for FY 2022-23.

Misc infra activities; Work order amounting to Rs. 38.18 Lakhs for commissioning of 2 Nos. of Thyssenkrupp make Elevators is awarded in the F.Y. 2022-23 and both the lifts will be commissioned shortly. 12 years old EPABX system is replaced with the latest type of EPABX System. Also the extension order was given to extend the intercom facility to various security posts in the premises and main gates. 2 Nos. of 250KVA DG Sets are commissioned in the month of Aug-22. Provision amounting to Rs. 7.06 Lakhs for Civil works for providing and fixing UPVC vertical fins for duct provided for ventilation and Rs. 40 Lakhs for life extension of new MSLDC Building by water-proofing of complete terrace, ACP Sheets are proposed in F.Y. 2022-23. ALDC specific various infrastructural work and ALDC specific IT infrastructure work has been proposed.

IT infra: For establishment of Security Operation Centre (SOC), Video Wall Display Unit along with desktop Computers are required in SOC Room at SLDC Airoli. Further, high end desktop are required for carrying out VAPT (Vulnerability Assessment and Penetration Testing) of Web

Applications and SCADA applications. For this purpose, Work order amounting Rs.51,48,540/- was issued on 31 march 2022 in FY 2021-2022. Accordingly, delivery of Desktop computers was completed in FY 2022-2023 and Delivery of Video Wall Display Unit will be completed in FY 2022-2023. Further MSLDC has initiated process of developing new mahasldc.in website and hosting it on cloud.

Automated Backup System Implementation: Implementation of Automated Backup System is under process by the MSLDC. Considering the critical applications hosted at MSLDC Data Centre, it is necessary to have the automated backup system in place for the critical applications and data. This system will be responsible for automated backup based on the predefined backup schedule such as daily, weekly & monthly. Backup Strategy for incremental backup, full backup and BMR (Bare Metal Recovery) will be designed. Additionally, backup will also be taken on Tape Library automatically. Tapes can be placed at ALDC Ambazari or any other Location at periodic interval. In case of any disaster occurs to the Backup Appliance, Data can be recovered through Tapes.

Purchase of VPS screen for operational data: For Grid monitoring and to show operational real-time data of URTDSM, REMC and various kinds of SCADA screens, supply, installation and commissioning of LED Video wall display with controller and collaboration Software at SLDC, Airoli was prepared. For this purpose, a proposal was prepared and tendering was done and work order has been placed. The benefits of additional screen for data monitoring for System Operator is given below:

- It helps to increase overall efficiency of System Operator due to availability of continuous display on screen.
- It helps in taking corrective preventive action during contingency condition involved in the Grid and it helps to minimize the penalty to the Utility due to proper monitoring of DSM and FBSM mechanism.
- It helps to increasing the overall efficiency of State Load Despatch Centre in Grid Operations.

Integration of 20 DCs at SLDC, Airoli and ALDC, Ambazari: CE (ACI&P) has placed LOA for supply, installation, testing and commissioning of 20 nos. of Data Concentrators for data acquisition from various RTUs installed at various Substations in MSETCL Network for real-time data transmission in existing SCADA System with new proposed Communication architecture at SLDC, Airoli and ALDC, Ambazari. The new Communication architecture will ensure redundancy of real-time SCADA data at DC and RTU level. These 20 DCs need to be integrated in existing SCADA Spectrum 4.5.1 at SLDC, Airoli and ALDC, Ambazari with proposed new architecture. The tentative cost for integration activity is around 70 Lakhs in FY 2022-23.

Supply, Installation and Commissioning of Video Conferencing System in Control Room for Real-Time Grid Management at SLDC Airoli: Presently the communication infrastructures available in control room are PLCC based PNT phones, M/s orange make fiber optic based VOIP phones for voice communication with WRLDC, Two sets of Vodafone network mobile phone and MTNL Landline phone communication. All these communication infrastructures are provided individually for Executive Engineer (CR. OP), Executive Engineer (Sub LD. Mumbai), Additional Executive Engineer (CR. OP), and Deputy Executive Engineer (CR. OP) at four numbers of desks in control room. The Executive Engineer (control room operation) PC provided with web camera and PGCIL internet network. However, these are the legacy protocols of talking over telephone.

This year several black start drills in Maharashtra could have been carried out by coordination with WRLDC, the generating stations and intermediate substations over the video if video conferencing system would be available. The daily day to day work of outage management, system monitoring and control purpose in addition to existing communication system, additional redundant communication system along with video is necessary to have a one-on-one effective communication.

WRLDC has recommended innovative deployment of video conferencing add-on of establishing secure video communication between WRLDC and MSLDC for better real-time co-ordination and efficient System Operation. Bandwidth for this video conferencing has been procured by WRLDC from M/s BSNL/MTNL and communication media made available. Accordingly, the WRLDC has placed order to M/s. BSNL Tower Corporation Ltd. to supply of Video Conference System at WRLDC control room for Real -Time Grid Management. It is presently installed and working in WRLDC control room and the same kind of Video Conferencing System proposal was prepared and is installed now in control room of MSLDC and testing work is under process. Accordingly, scheme was prepared amounting to Rs. 22.34 Lakhs.

Purchase of two (2) Nos. of PSS/E User Licenses along with Maintenance & Support (M&S) up to Sept'2025:

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 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 16.02.2022. After receipt of approval, the LoA was issued to the vendor on 18.02.2022 and on 18.08.2022, the PSSE Software License has been delivered by the vendor.

Additional developments/modifications in the existing REMC Forecasting & Scheduling

software through Change request:

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 & commissioned before the introduction of the said G-TAM Order, no 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 auto-modelled 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. Thus, the total cost can be capitalized in FY 2022-23.

Capitalization of non-DPR schemes over the Control Period

As regards capitalization towards non-DPR schemes, the Hon'ble Commission has specified the following as 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 scheme and not apply the criteria 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.

…………………..

5.5.17 Accordingly, the Commission provisionally approves the capitalization proposed under both DPR and non-DPR schemes as mentioned herein above and accordingly, decides not to restrict the non-DPR capitalization at 20% of DPR capitalization approved for the year. This approval is provisional and subject to prudence check at the time of Truing up……………….."

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 291 of 2019.

MSLDC humbly requests the Hon'ble Commission to approve the revised Capital Expenditure and Capitalization submitted above for FY 2022-23. As directed by the Commission, funds for capitalization for FY 2022-23 is proposed to be used from LDCD fund.

5.5.Depreciation

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

"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 depreciable asset and its cost shall be excluded from the 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 2022-23 is assumed to be funded from LDCD fund; hence, the depreciation of asset capitalized during FY 2022-23 has not been considered. Depreciation for FY 2022-23 has been computed considering the depreciation rates as derived based on actual depreciation amount and asset addition up to FY 2017-18, as already explained in the previous section.

The projected Depreciation for FY 2022-23 is Rs. 237.09 Lakh as against the Commission's approved depreciation of Rs. 114.02 Lakh in Order in Case No. 291 of 2019. The revised depreciation for FY 2022-23 is estimated as below.

Table 40: Depreciation for FY 2022-23

(Rs. Lakh)

Particulars	FY 2022-23		
	Approved in (Case No. 291 of 2019)	**Revised Estimate**	**Provisional True up requirement**
Depreciation	114.02	237.09	123.07

Accordingly, MSLDC humbly requests to approve the projected depreciation for FY 2022-23. The GFA considered by the Petitioner as per audited account and its explanation is already provided in the previous chapters. The details of the depreciation claimed for FY 2022-23 have been provided in Form F4 of Petition Formats.

5.6.Interest & Financial Charges

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019 under 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 normative average loan of the concerned year shall be considered on the basis of the actual asset capitalization 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 2022-23 is envisaged to be funded by normative loans only, and no additional loan allocation from MSETCL has been considered for FY 2022-23. 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 2022-23, interest expense pertaining to normative loan for capitalization up to FY 2017-18 has been considered. Further, there is no outstanding actual loan allocated by MSETCL. MSLDC has considered the weighted average rate of interest as available for FY 2021-22, as informed by 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 2022-23 is shown in Table as below:

Table 41: Interest on Loan for FY 2022-23

(Rs. Lakh)

Particulars	FY 2022-23		
	Approved (Case No. 291 of 2019)	Revised Estimate	Provisional True up requirement
Interest on Loan	68.68	62.82	-5.86

5.7.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, …….:

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 truing up for respective year based on actual performance, after prudence check of the Commission:

29.2 Base 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 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 cost, 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 2022-23 in accordance with the aforementioned Regulations. However, as mentioned above, the capitalization is assumed to be funded from LDCD fund and hence, no new equity would be added during FY 2022-23. The equity, as considered for FY 2021-22, is considered for FY 2022-23 also. So, RoE projected for FY 2022-23 is based on the opening equity as on FY 2018-19 only (as submitted in the last MYT Petition) and no new equity added owing to the projected Capitalization has been considered. MSLDC has considered RoE at rate of 14% on the opening equity. As submitted in the previous section, the proposal for additional RoE has been already submitted and hence, claim of additional RoE @ 1.5% will be submitted after actual data is available for kind consideration of Hon'ble Commission. The projected RoE for FY 2022-23 is shown in the table below:

Table 42: Return on Equity for FY 2022-23

(Rs. Lakh)

Sr. No.	Particulars	FY 2022-23		
		Approved (Case No. 291 of 2019)	**Estimated**	**Provisional True-Up requirement**
	Return on Equity Computation			
1	Return on Regulatory Equity at the beginning of the year @14% (base RoE)	177.44	222.50 (on the basis of GFA of Rs 1589.27 lakh)	
2	Return on Regulatory Equity addition during the year		0.00	
	Total Return on Equity	177.44	222.50	45.06

MSLDC humbly requests the Hon'ble Commission to approve above Return on Equity as projected for FY 2022-23. The details of the Return on Equity for FY 2022-23 have been provided in Form F 9 of Petition Formats.

5.8.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 2022-23.

5.9.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 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."

The non-tariff income, except interest from LDCD fund, for FY 2022-23 is proposed to be same level as per actual non-tariff income received by MSLDC in FY 2021-22. As discussed in earlier sections, interest income from LDCD fund, on average LDCD fund basis during FY 2022-23, is also considered under non-tariff income. The details of the Non- Tariff Income for FY 2022-23 have been provided in Form F10 of Petition Formats.

Table 43: Non-Tariff Income for FY 2022-23

(Rs. Lakh)

Particulars	**FY 2022-23**		
	Approved in (Case No. 291 of 2019)	**Estimated**	**Provisional True-Up Requirement**
Interest on LDCD Fund	41.94	311.30	
Other Non-Tariff Income	14.90	27.56	
Non-Tariff Income	56.84	338.86	282.02

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

5.10. Income from Open Access Charges

MSLDC has estimated income from Open Access Charges of Rs. 1203.41 Lakh for FY 2022-23 as approved in Case No. 291 of 2019. The same has been considered as per approval given by the Hon'ble Commission.

Table 44: Income from Open Access charges for FY 2022-23

(Rs. Lakh)

Particulars	**FY 2022-23**		
	Approved in (Case No. 291 of 2019)	**Estimated**	**Prov. True-Up Requirement**
Income from open access charges	1203.41	1203.41	0.00

5.11. Income from Monthly Operating Charges

MSLDC has estimated income from Monthly Operating Charges of Rs. 3479.56 Lakh for FY 2022-23 as approved by the Hon'ble Commission in Case No. 291 of 2019.

Table 45: Income from Monthly Operating Charges for FY 2022-23

(Rs. Lakh)

Particulars	**FY 2022-23**		
	Approved in (Case No. 291 of 2019)	**Estimated**	**Prov. True-Up Requirement**
Income from Monthly Operating Charges	3479.56	3479.56	0.00

5.12. Summary of provisional True-Up for FY 2022-23

Based on the above discussion, the head-wise projected expenses for FY 2022-23 for provisional true up are summarized in Table below:

Table 46: Summary of Provisional True-up of FY 2022-23

(Rs. Lakh)

Sr. No.	**Particulars**	**FY 2022-23**		
		Approved in case 291 of 2019	**April to March (Estimated)**	**Provisional Truing Up Requirement**
1	Operation & Maintenance Expenses	3117.88	3412.46	294.58
2	Depreciation Expenses	114.02	237.09	123.07
3	Interest on Loan Capital	68.68	62.82	-5.86
4	Interest on Working Capital	66.35	64.53	-1.82
5	RLDC Fees and WRPC Charges	1195.43	651.52	-543.91
6	Reactive Energy Charges paid to Generators/TSUs			0.00
7	Income Tax			0.00
8	**Total Revenue Expenditure**	4562.36	4428.42	-133.94
9	Return on Equity Capital	177.44	222.50	45.06
10	**Total Expenditure for MSLDC**	4739.80	4650.92	-88.88

Sr. No.	Particulars	FY 2022-23		
		Approved in case 291 of 2019	**April to March (Estimated)**	**Provisional Truing Up Requirement**
11	Less: Non-Tariff Income	56.84	338.86	282.02
12	Less: Income from Open Access Charges	1203.41	1203.41	0.00
13	Less: Income from Reactive Energy Charges			0.00
14	**Annual Fixed Charges for MSLDC**	3479.56	3108.64	-370.92
15	**Revenue approved/actual**	3479.56	3479.56	0.00
16	**Stand-alone Revenue gap/(surplus)**	0.00	-370.92	-370.92

Thus, on Provisional Truing up for FY 2022-23, there is surplus of Rs. 370.92 Lakh, treatment of which has been considered as part of the LDCD fund.

5.13. LDCD Fund

The provisional surplus, after considering net entitlement, is transferred to LDCD fund and interest income earned from LDCD fund is considered as non-tariff income. The Hon'ble Commission in Case No. 291 of 2019 has opined the following.

> *"3.13.8 Accordingly, the surplus available with LDCD fund post utilisation of the amount for capitalization is considered for calculation of Income from Fixed Deposit Receipts (FDR) at the average Interest rate on which the FDR is actually invested by MSLDC."*

The Petitioner has calculated the interest income on the basis of average LDCD fund during FY 2022-23, as per approach already adopted by the Hon'ble Commission. The interest income from LDCD fund is already considered as non-tariff income by the Petitioner in FY 2022-23. For calculating the interest income, interest rate considered for FY 2021-22 has been anticipated by the Petitioner. The details are given below.

Table 47: LDCD fund for FY 2022-23

(Rs. Lakh)

Particulars	Amount allocated to the LDCD fund FY 2022-23
LDCD fund at the starting of year	6385.84
Less: Revenue Gap / (Surplus) of the Year as submitted in the present Petition	-370.92
Less: Utilisation of LDCD Fund	1169.41
LDCD fund at the end of year	5587.35
Average LDCD fund	5986.60
Interest rate	5.20%
Income earned on LDCD fund – transferred to non-tariff income	311.30

The Petitioner requests the Hon'ble Commission to approve the details regarding LDCD fund, as submitted above.

6. Operational performance of SLDC during the 4th Control Period

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 2017-18 to FY 2021-22 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 2019-20, FY 2020-21 and FY 2021-22 for kind information of the Hon'ble Commission.

Sr. No.	Key result Area and Corresponding Key Performance Indicator	Achievement during FY 2019-20	Achievement during FY 2020-21	Achievement during FY 2021-22
1	**EFFICIENT GRID OPERATION AND CONTROL**			
A	Demand & energy catered	Max. Peak demand 24550 MW on 19.02.2020 & Total energy catered 157860.6 MU. (Max. 522.116 MUs on 23.05.2019)	Max. Peak demand 25513 MW on 18.03.2021 & Total energy catered 154938 MU. (Max. 554.51 MU on 17.03.2021)	Max. Peak demand 28016 MW on 24.03.2022 & Total energy catered 176641.9 MU. (Max. 610.508 MUs on 30.03.2022)
B	To follow DSM discipline and maintain deviation in permissible limit (250 MW).	i. Less than -250 MW: 10.70 %. ii. -250 to +250 MW: 81.75 % (allowed as per IEGC) iii. Greater than 250 MW: 7.55 %	i. Less than -250 MW: 17.46 %. ii. -250 to +250 MW: 76.38 % (allowed as per IEGC) iii. Greater than 250 MW: 6.16 %	i. Less than -250 MW: 23.41 %. ii. -250 to +250 MW: 68.54 % (allowed as per IEGC) iii. Greater than 250 MW: 08.05 %
C	Improvement in Grid Parameters	i. Less than 49.90 Hz: 06.465 % of time	i. Less than 49.95 Hz: 5.32 % of time	i. Less than 49.90 Hz: 7.85 % of time

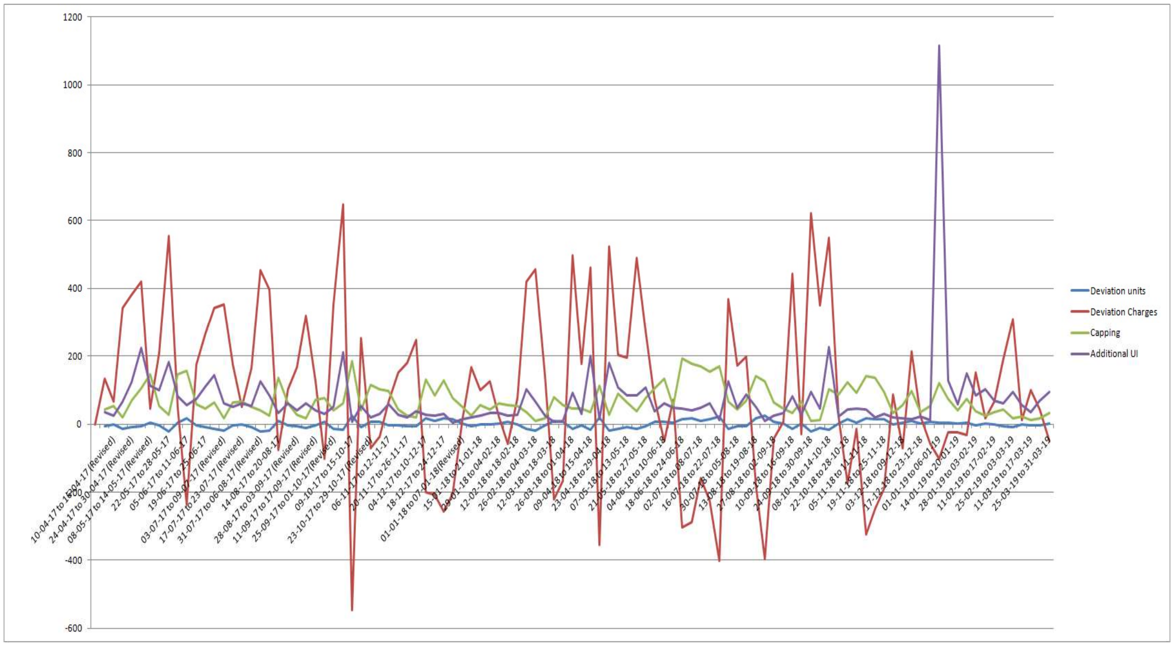
Sr. No.	Key result Area and Corresponding Key Performance Indicator	Achievement during FY 2019-20	Achievement during FY 2020-21	Achievement during FY 2021-22
	(f)	ii. Between 49.90 – 50.05 Hz: 72.814% of time iii. Above 50.05 Hz: 20.721 % of time	ii. Between 49.95 – 50.05 Hz: 77.50 % of time iii. Above 50.05 Hz: 17.18 % of time	ii. Between 49.90 – 50.05 Hz: 75.52% of time iii. Above 50.05 Hz : 16.63 % of time
D	Scheduling of power as per contracts.	The scheduling is carried out as per FBSM regime in new scheduling software (MiPDDSS) w.e.f. 01.01.2019 which was developed by M/s Power Research and Development Consultants Pvt. Ltd. (PRDC), Bangalore.	Daily scheduling is carried out in the scheduling software (MiPDDSS). In this software, scheduling activities are continuous as per FBSM regime.	For the implementation of DSM Regulations-2019, SLDC has developed Software through M/S PWC (Kolkata). The commercial operation of DSM framework is commenced in the State of Maharashtra from 11th October 2021 Thereby the scheduling through MiPDDSS scheduling software has been stopped after 10th October 2021.
E	Development of Scheduling Software as per new DSM Mechanism.	DSM mechanism is mandated to be implemented from 1st April 2020 & hence no activities related to Development of Scheduling Software as per DSM Mechanism were taken up.	DSM mechanism is mandated to be implemented from 1st April 2020 and the Development of Scheduling Software as per new DSM Mechanism is under progress. Work order placed to M/s PWC.	For the implementation of DSM Regulations-2019, SLDC has developed Software through M/S PWC (Kolkata). The commercial operation of DSM framework is commenced in the State of Maharashtra from 11th October 2021.
F	Daily Reporting & Quarterly feedback report to STU for Transmission constraints, congestion, GCC etc.	Daily reporting is done to all higher authorities. Quarterly feedback report to STU is submitted for all quarter in FY 2019-20.	Daily reporting is done to all higher authorities. Quarterly feedback report to STU is submitted quarterly for FY 2020-21. Emergency Outage Management system developed and implemented at SLDC w.e.f 08.03.2021. One GCC meeting was conducted.	Daily reporting is done to all higher authorities. Quarterly feedback report to STU is submitted quarterly for FY 2021-22. DSM Mechanism is implemented w.e.f 11.10.2021. Two OCC and two GCC meetings were conducted.
G	Coordination with WRLDC/ GENCO/ DISCOM/ TSU/OA	Coordinated with WRLDC/GENCO/DISCOM/TSU/OA as & when required. OCC/TCC- WRPC meetings participated actively.	Coordinated with WRLDC/GENCO/DISCOM/ TSU/OA as & when required. OCC/TCC- WRPC meetings participated actively.	Coordinated with WRLDC/GENCO/DISCOM/TSU/OA as & when required. OCC/TCC- WRPC meetings participated actively.

Sr. No.	Key result Area and Corresponding Key Performance Indicator	Achievement during FY 2019-20	Achievement during FY 2020-21	Achievement during FY 2021-22
2	**OUTAGE MGMT. AND CONTINGENCY PLANNING**			
A	400 kV and above system elements in coordination with WRLDC/WRPC.	Total 1185 No. of 400kv and above, system elements outages provided	Total 942 No. of 400kv and above, system elements outages provided	Total 1418 No. of 400kv and above, system elements outages provided
B	220 KV level system elements outages.	Total 3488 No. of 220kV level system elements outages provided.	Total 3444 No. of 220kV level system elements outages provided.	Total 4642 No. of 220kV level system elements outages provided.

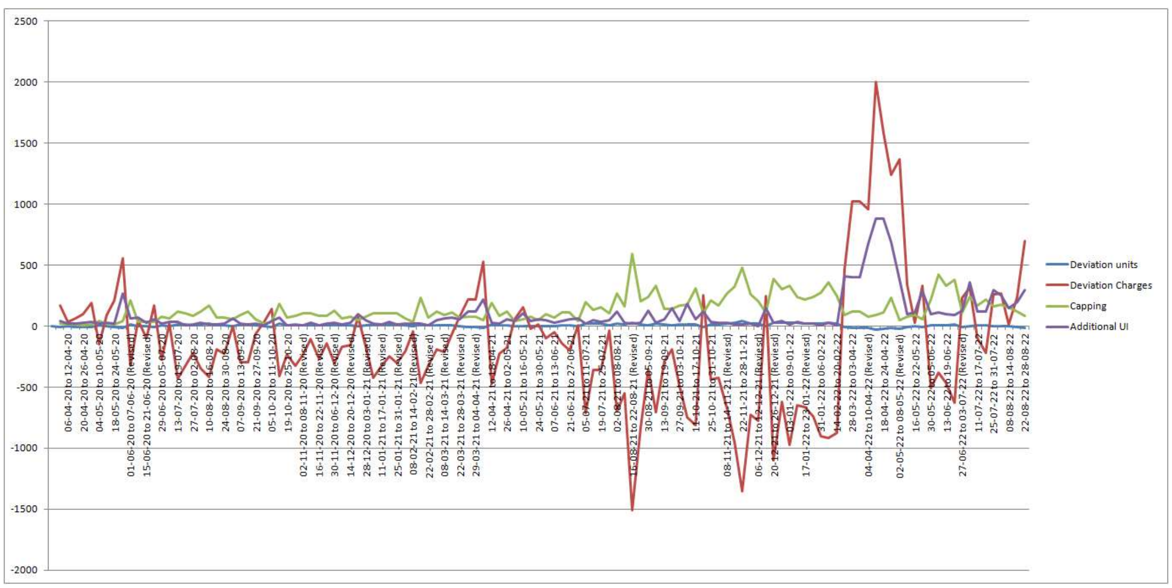
Sr. No.	Key result Area and Corresponding Key Performance Indicator	Achievement during FY 2019-20	Achievement during FY 2020-21	Achievement during FY 2021-22
3	**ENERGY ACCOUNTING /OA/ REGULATORY and MSPC**			
A	Timely issuance of FBSM weekly bills.	i. Weekly FBSM bills up to third week of February-18 (Total 13 nos. weekly bills) issued as Hon'ble MERC vide its order dated 26.09.2019 in Case No. 297 of 2018 had directed to issue bills with inclusion of PX/CPP rates in WASMP with immediate effect. ii. As there was no provision in Software for punching of above rates & logic for SMP computation, upgradation in software was carried out by the developer. iii. Analysing repercussion in the modules of FBSM system took considerable time along with significant quantum of work carried out to incorporate necessary changes which include web page design to upload rates, new logic development to consider rates in the SMP calculation or all discom's delayed the speed of issuance of bills.	i. Fixed Cost Reconciliation for FY 2011-12 to FY 2019-20 along with carrying cost issued (9 nos. annual bills) as per orders issued in Case Nos. 297 of 2018 & 90 of 2020. ii. Provisional Supplementary Variable Charge for FY 2011-12 to FY 2017-18 as per Order issued in Case No. 90 of 2020. iii. Provisional Variable Charge of FBSM Pool for FY 2018-19 as per Order issued in Case No. 90 of 2020. iv. rovisional Variable Charge of FBSM Pool for First half (6 months) of FY 2019-20 bill issued as per final order issued in Case No. 90 of 2020. v. Revised FBSM bills issued for May-12, June-12 & September-12 (Total 13 nos. weekly bills) with re-	a) Provisional Monthly FBSM Bills for the months April-2020 to September-2021 (18 nos.) issued as per the Orders issued in Case No. 225 of 2020. b)Provisional Variable Charge of FBSM Pool for Second half (6 months) of FY 2019-20 bill issued as per final order issued in Case No. 90 of 2020. c) Revised FBSM bills issued till third week of February-2013 (Total 70 nos. weekly bills) with re-computation of WASMP as per order in Case No 297 of 2018. 8 nos weekly FBSM bills issued for year 2018. Therefore, 88 nos. weekly bills issued.

Sr. No.	Key result Area and Corresponding Key Performance Indicator	Achievement during FY 2019-20	Achievement during FY 2020-21	Achievement during FY 2021-22
			computation of WASMP as per order in Case No 297 of 2018.	
B	Computation of Transmission Loss for the intra-state system.	Computation of InSTS loss through EAS for 12 months (March 19 to Feb 20) published on MSLDC website.	Computation of InSTS loss through EAS for 12 months (March 20 to Feb 21) published on MSLDC website.	Computation of InSTS loss through EAS for 7 months (March 21 to September 21) & DSM Software (Transmission Loss Accounting Module) for subsequent 5 months (October-21 to February-22) published on MSLDC website.
C	Development of comprehensive software for FBSM	Modification in the billing software module for calculation of SMP of each state entity for incorporation of Power exchange and CPP rates.	A new patch has been developed on .NET platform to speed up the process of reports downloading and also reduce frequent instances of software malfunctioning.	Additions of New deem licensee along with some modification in the modules related to scheduling billing were undertaken to have multi-tasking& smooth functioning.
D	Development of new web based software for STOA.	SAT carried out, training provided to the end users & now software is under trial run.	STOA Software has been fully functional & live to all entities for from 1st November-2020. Applicant can apply, track the status of application & receive approval automatically through web portal with intimation via SMS/Email	Around 100-120 Short Term OA applications have been submitted online by the applicant and subsequent approvals are processed within the timelines specified in the Regulations. Online payment facility is provided for making payment through payment gateway

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 graph and 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.



Graph: Weekly deviation units and charges (Maharashtra April 2017 to March 2019)



Graph: Weekly deviation units and charges (Maharashtra April 2020 to March 2022)

Table 48: ADMC for FY 2019-20 to FY 2021-22

(Rs. Lakh)

Particulars	FY 2019-20	FY 2020-21	FY 2021-22
Annual Additional Deviation Management Charges payable by the State	3108	4413	7123.54

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.

	New Projects Planned/Under execution	
Sr. No.	**Projects**	**Status**
A	1)80 RTUs data integration for 220 KV sub-stations 2)70 RTUs data integration for 220 KV sub-stations	In progress. Detailed orders placed by CE (PAC). Order for integration in existing SCADA at SLDC is placed on M/s Siemens: The scheme has been implemented in two phases: 1. In Phase-I, 36 of 39 RTUs have been integrated. 2. In Phase-II 34 of 38 RTUs have been implemented so far. 3. 7 RTUs are yet to be implemented under the scheme. Work is ongoing for completing the integration of these 7 RTUs. A total of 70 RTUs have been integrated so far and are visible at SLDC. The work for implementing the remaining 7 RTUs in ongoing. Progress of 70 RTUs integration scheme is as follows: Order for integration in existing SCADA at SLDC is placed on M/s SIEMENS. 1 First order 7RTUs Integration all the 7 RTUs has been integrated 2 Second Order 63 RTUs Integration placed on M/s SIEMENS on dtd.31.12.2021. Integration work is in progress.
B	Development of DSM Software	In Maharashtra DSM mechanism is commercially implemented w.e.f.11.10.2021
C	(i)Implementation of REMC	REMC Centre has been established and taken over by MSLDC on dt. 01.01.2020. 15 Nos. of QCAs have been appointed by the Generators for carrying out various responsibilities intrusted in the F&S Regulations. All these QCAs have been registered in the REMC. Presently, scheduling of 128 Nos. of PSS having installed capacity of 7618 MW (Wind: 4992 MW; Solar: 2626 MW) is being carried out through REMC.
	(ii)Additional developments/modifications in the existing REMC	In view of regulatory changes in respect of G-DAM, it is necessary to make changes in the REMC Software which was designed and commissioned prior to the order of Hon'ble

Note: - The following schemes contain only software integration part for RTUs at SLDC level.

1) 80 RTUs data integration for 220 kV sub-stations

	New Projects Planned/Under execution	
Sr. No.	**Projects**	**Status**
	Forecasting & Scheduling software through Change request	CERC. Work order has been placed to M/s Siemens and work is progress.
	(i) Development of Alert Messaging Software	On the back drop of partial black out in MMR & Mumbai o 12.10.2020, MSLDC has proposed to develop a software f broadcasting messages to all the Stake holders for intimatin alerts on overloaded lines or depletion of network. DPR of this scheme has submitted to MERC.
D	Development of web based STOA software	Work completed & STOA software put into operation fro 1st November 2020.in progress

2) 70 RTUs data integration for 220 kV sub-stations

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7. ARR forecast for FY 2023-24 to FY 2024-25

The Hon'ble Commission has published 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. As per Regulation 3.1 of MYT Regulations, 2019 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, 2019 including MSLDC.

Regulation 4.2 of MYT Regulations, 2019 has given the details regarding multi-year framework and mid-term review Petition. The mid-term review related provision are given below.

> *"4.2 The Multi-Year Tariff framework …………………..:*
>
> *(iii) Petition for Mid-term Review of operational and financial performance vis-à-vis the approved forecast for the first three years of the control period; and revised forecast of Aggregate Revenue Requirement, expected revenue from existing Tariff, expected revenue gap, and proposed category-wise Tariffs for the fourth and fifth year of the Control Period, shall be submitted by the Generating Company or Licensee or MSLDC;*
>
> *(iv) True-up for the first and second years of the Control Period based on the audited accounts and provisional true-up for the third 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 Licensee or MSLDC along with its Petition for Mid-term Review;*
>
> *(v) Determination of the revised Aggregate Revenue Requirement and Tariff or Fees and Charges for Generating Companies, Transmission Licensees, Distribution Wires Business, Retail Supply Business, and MSLDC by the Commission for the fourth and fifth year of the Control Period based on the Mid-term Review;"*

Following the same provision, the present Mid-term Review Petition has been prepared, where the Petitioner has submitted the first two years' true-up, provisional true-up of third year, and revised ARR for last two years. In this section, forecast of Aggregate Revenue Requirement, expected revenue from existing Fees and Charges, expected revenue gap, and proposed Fees and Charges for last two years of the present Control Period, i.e. from FY 2023-24 to FY 2024-25, has been presented.

Part I of MYT Regulations, 2019 has detailed out the provisions related to 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 present petition and in this section the ARR projection for last two years of the present Control Period is presented. The details of each component of Aggregate Revenue Requirement is discussed below.

7.1.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.

"96.3 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:*

As explained in the previous section, as per projection of O&M expenses for FY 2022-23 on the basis of O&M expenses for the base year, the same approach is continued for projection of O&M expenses for FY 2023-24 and FY 2024-25. Following the above approach, average of true-up O&M expenses, before adding/deducting the share of efficiency gains/losses of FY 2020-21 and FY 2021-22 has been calculated. Considering the derived average O&M expenses, the same has been escalated, with suitable escalation factor. The escalation factor considered for projecting the O&M expenses for FY 2022-23 (i.e. on the basis of past five years data up to FY 2021-22), the same escalation factor is considered for projecting the expenses for FY 2023-24 and FY 2024-25. The escalation factor has been derived 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. The detailed methodology for deriving the escalation factor is not repeated in this section. Considering the escalation factor and O&M expenses for FY 2022-23, the O&M expenses for last two years of present control period, have been estimated.

Further, the Petitioner requests the Hon'ble Commission to consider additional O&M expenses, over and above projected O&M expenses, in the total O&M expense. The rationale is presented by the Petitioner with details of such additional O&M expenses is the previous section. On the basis of the same, the projected O&M expenses are given below.

Table 49: Projected O&M Expenses for FY 2023-24 and FY 2024-25

(Rs. Lakh)

Particulars	FY 2023-24		FY 2024-25	
	Approved in Case No 291 of 2019	Revised projection	Approved in Case No 291 of 2019	Revised projection
Normal O&M Expenses		3465.10		3609.47
Additional O&M Expenses		304.55		241.95
Total O&M Expenses *	3217.49	3769.65	3320.29	3851.42

* O&M Expenses including impact of wage revision

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

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

The working capital requirement of the MSLDC shall cover:

(i) 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:

…………………………………….

(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:"

The Petitioner has considered the aforementioned methodology specified in the MYT Regulations, 2019 for calculation of IoWC for FY 2023-24 and FY 2024-25. For computing the interest on working capital for future years, MSLDC has considered the interest rate of 9.55%, i.e. current base rate (MCLR) of 8.05% plus 150 basis points (1.5%). The Working Capital and interest computation for MSLDC for FY 2023-24 and FY 2024-25 are shown in the table below:

Table 50: Interest on Working Capital for FY 2023-24 and FY 2024-25

(Rs. Lakh)

Sl No	Particulars	FY 2023-24		FY 2024-25	
		Approved in Case No 291 of 2019	Revised projection	Approved in Case No 291 of 2019	Revised projection
1.	Interest on Working Capital Requirement	737.78	696.73	759.83	765.55

Sl No	Particulars	FY 2023-24		FY 2024-25	
		Approved in Case No 291 of 2019	Revised projection	Approved in Case No 291 of 2019	Revised projection
2.	Rate of Interest (% p.a.)	9.55%	9.55%	9.55%	9.55%
3.	Interest on Working Capital	70.46	66.54	72.56	73.11

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, 2019. WRLDC had filed a petition before Hon'ble CERC for determination of WRLDC charges for FY 2019-20 to FY 2023.24 and Hon'ble CERC has issued the order on 09.06.2021 (Petition No.400/MP/2019). The present RLDC fees is billed based on the said order. The Petitioner has noted the WRLDC Fees approved by Hon'ble CERC, and it has been observed that the growth rate of approved RLDC fees (in Rs Lakh) is around 4.8% (in FY 21-22 to FY 23-24 period), as given below.

FY 21-22: 6282.54
FY 22-23: 6698.22
FY 23-24: 6900.27
CAGR: 4.80%

As per the observed growth rate, MSLDC assumes 5% escalation in RLDC fees. So, for FY 2023-24, 5% escalation on fees projected for FY 2022-23 is considered. Similarly, for FY 2024-25, 5% escalation on projected fees for FY 2023-24 has been considered. Considering the above, RLDC fees for the remaining two years of the present control period have been projected as given below.

Table 51: RLDC Fees and Charges for FY 2023-24 and FY 2024-25

(Rs. Lakh)

Particulars	FY 2023-24		FY 2024-25	
	Approved in Case No 291 of 2019	Revised projection	Approved in Case No 291 of 2019	Revised projection
RLDC Fees and Charges	1361.35	684.10	1361.35	718.30

Accordingly, MSLDC requests the Hon'ble Commission to approve RLDC Fees as proposed above. Also, WRPC charges are not applicable for MSLDC w.e.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

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 de-centralized approach of controlling and management is expected to be more effective.

In this context, so as to overcome these challenges, MSLDC has planned for various schemes for implementation in the past Control Period during the 3rd control period (FY 2016-17 to FY 2019-20) and submitted to the Hon'ble Commission. Actual capitalization was also approved in Case No 291 of 2019. In the present Petition, MSLDC submitted its progress and actual capitalization in this regard up to FY 2021-22. The capitalization for FY 2019-20 to FY 2021-22 has been submitted for approval. MSLDC capitalized various schemes and implementation of various other schemes is under progress. 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 4th control period. For the ensuing years, viz. FY 2023-24 to FY2024-25, 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 ensuring years have been projected as per the requirement of different section of SLDC together with ALDC.

> *"93 Capital Investment Plan*
>
> *93.1 The MSLDC shall submit a detailed capital investment plan, 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 of India or any such other statutory authorities, to the Commission for approval, as a part of the Multi-Year Aggregate Revenue Requirement for the entire Control Period.*
>
> *93.2 The Capital Investment Plan shall be a least cost plan for undertaking investments and shall cover all capital expenditure projects of a value exceeding Rs. One crore or*

any other limit as may be stipulated by the Commission from time to time and shall be in such form as may be stipulated by the Commission.

93.3 The Capital Investment Plan shall be accompanied by such information, particulars and documents as may be required showing the need for the proposed investments, alternatives considered, cost/benefit analysis and other aspects that may have a bearing on the MSLDC Fees and Charges.

93.4 The Commission shall consider the Capital Investment Plan along with the Multi-Year Aggregate Revenue Requirement for the entire Control Period submitted by the MSLDC taking into consideration the prudence of the proposed expenditure and estimated impact on MSLDC Fees and Charges."

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 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, 2019 is given below.

"24.5 The actual capital expenditure on a scheme as on COD for the original scope of work based on audited accounts of the Generating Company or Licensee or MSLDC or Project, as the case may be, shall be considered subject to prudence check by the Commission.

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.

24.7 The cumulative amount of capitalization against non-DPR schemes for any Year shall not exceed 20% 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 the Commission may allow capitalization against non-DPR schemes for any Year in excess of 20% or such other limit as may have been stipulated by the Commission through Order, on a request made by the Generating Company or Licensee *or MSLDC:"*

Following the first proviso to Regulation 24.7 of the MYT Regulations, 2019, MSLDC proposes non-DPR capitalization as per requirement and not restricted the same at 20% of DPR capitalization. Also, Hon'ble Commission approved non-DPR capitalization as more than 20% of approved DPR capitalization in its order in Case No. 291 of 2019. The Hon'ble Commission's observation in this regard is already given in the previous section, and is not elaborated again here.

So, to meet the operational and technological challenges, MSLDC proposes the capital expenditure and capitalization plan of MSLDC from FY 2023-24 to FY 2024-25, as shown below.

Table 52: Projected Capitalization for FY 2023-24 to FY 2024-25

(Rs. Lakh)

Project details	Expenditure	Capitalization
FY 2023-24		
a) DPR Schemes		
(i) In-principle approved by MERC		
70 SAS/ RTUs integration	122.00	162.00
DSM		107.00
(ii) Yet to receive in-principle MERC approval		
Development of alert messaging software at MSLDC	172.28	172.28
Renovation and modernization of existing SCADA at SLDC and ALDC	4000.00	4000.00
b) Non-DPR Schemes		
Integration of NEW S/S at SLDC Airoli and ALDC SCADA (27 RTU integration)	75.50	95.50
Upgradation of WAMS	20.00	20.00
CCTV, Security system, voice recording	15.00	15.00
Life extension of Krishna and Kaveri building	40.00	
Structural strengthening of new MSLDC building	95.00	
Energy efficient building upgradation and solar lighting	40.00	
Furniture and office equipment	7.00	7.00
staff recreation and rejuvenation activity	15.00	
IT infrastructure (Firewall, 2 No of FTP, WIFI device, new desktop and laptop)	75.00	75.00
Hardware for reserve and ancillary services software (GAMS software)	50.00	
Development of load forecasting software	14.16	
ALDC Misc. expenses - landscapping, rooftop solar scheme, CCTV, staff recreation, office furniture	39.00	39.00
Development of reserve and ancillary service software for intrastate generation (GAMS)	50.00	50.00
REC	50.00	50.00
Total	**4879.94**	**4792.78**

Project details	Expenditure	Capitalization
FY 2024-25		
a) DPR Schemes		
(i) In-principle approved by MERC		
DSM	48.58	48.58
(ii) Yet to receive in-principle MERC approval		
Class I type staff quarter and guest house and recreation hall and gymnasium	1000.00	
Replacement of existing VPS at ALDC	0.00	0.00
Renovation and modernization of existing SCADA at SLDC and ALDC	4000.00	4000.00
b) Non-DPR Schemes		
Life extension of Krishna and Kaveri building		40.00
Structural strengthening of new MSLDC building		95.00
Energy efficient building upgradation and solar lighting		40.00
Staff recreation and rejuvenation activity	5.00	20.00
Hardware for reserve and ancillary services software (GAMS software)		50.00
Development of load forecasting software	14.16	28.32
S/I/T/C for 2 nos of CISCO routers and switches for SCADA MPLS	90.00	90.00
S/I/T/C of new desktop laptop	25.00	25.00
Building renovation and modernisation/life extension of building	20.00	20.00
Furniture for office and equipment	7.00	7.00
A/C Plant	60.00	60.00
UPS system	20.00	20.00
ALDC Misc expenses - life extension of building, Testing equipment, furniture	23.00	23.00
Total	**5312.74**	**4566.90**

The Petitioner has already elaborated details of some schemes in the previous chapters. Here, in the following paragraphs, the information on remaining schemes, which are not elaborated earlier, have been summarized.

70 SAS / RTU: For remaining 63 RTU integration work, expenditure is projected in FY 2023-24 and the capitalization is projected in FY 2023-24. Presently the work is in progress.

DSM: On successful completion of operational support and maintenance for 03 years, post Go-Live, the amount of Rs.48.58 Lakhs shall be released to M/s. PWC as per work order Clause 7 (Payment Terms/Schedule). The same expenditure is capitalized in FY 2024-25.

Development of an "Alert Messaging Software" for declaration of "Alerts" based on System Conditions to various Stake Holders in the State

Scheme details: To perform the real time operational activities, MSLDC has 24x7 operational Control

Room with experienced engineers. The MSLDC Control room monitors the Real time grid operations and take decisions to ensure safe & secure grid operations. In case of any contingencies in real time, appropriate instructions are passed to the concerned Stake holders so as to maintain the Grid secure. One of the recommendations of the Committee constituted by the Govt. of Maharashtra for analyzing the Mumbai Grid Disturbance occurred on 12.10.2020, is reproduced below:

> *"Clause No. 6.2:*
>
> - *A comprehensive SOP should be prepared for better coordination between SLDC and other stakeholders. This may include the following features:*
> - *Categorization of Alert State according to Severity (e.g., Red/Orange/Yellow).*
> - *A formal mechanism to broadcast messages to relevant stakeholders depending on category of alert. For example, a Red Alert could be sent to all 400 kV and 220 kV substations, generating stations and other LDCs.*
> - *Chain-of-command protocols and formal mechanisms for rapid exchange of data/alerts/acknowledgement of actions and mid-course corrections (if needed in an alert situation). If an alert situation exists, it should be conveyed to field personnel as well."*

An "Alert Messaging System" for declaration of various Alerts based on System Conditions to Stake holders in MMR & Mumbai was deployed at MSLDC as a pilot project for 3 months on "No Cost No Obligation" basis. This Pilot project was carried out by M/s. RE Connect Energy Solutions Ltd. The pilot operation period was Oct'2021 to Dec'2021.During the said period, alert messages having 'Red', 'Orange' & 'Yellow' based on line loading of various 400 kV lines connected to Airoli & Kharghar, Mumbai demand, MSETCL-Mumbai exchange were sent to the Stake holders viz. MSETCL, TPC, AEML & MSLDC Authorities. During the pilot period operation, it is observed that the said system is beneficial for MSLDC as System specific alerts along with instructions have been sent to all the concerned Stake holders thereby reducing the time of communication. With such alert messages, the concerned Stake holders and Control Centres of TPC, AEML & MSEDCL were made aware of the System conditions so as to avoid any disturbance in the System.

Scope of work based on the benefits observed during the pilot operation, the scheme has been proposed to expand the scope of said system for the whole State for generating alerts in case of:

- Tripping or any 765kV, 400kV Transmission elements viz. Lines, ICTs.
- Demand Curtailment in the event of heavy Overdrawal, Load-Generation imbalance of any Discom, etc.
- RE Curtailment in the extreme emergency conditions,

- Mumbai Transmission Constraints.

The DPR of the Scheme has been submitted to Hon'ble MERC vide letter No. MSLDC/TECH/REMC-OP/MERC/1506 dated 25.08.2022 for approval.

Renovation and modernization of existing SCADA at SLDC and ALDC

The SCADA system has been established at SLDC Airoli and ALDC Ambazari to Monitor and Control operations of elements of State Grid. Real Time data required for SCADA system is being brought over communication links on IEC 104 Protocol to SLDC Airoli and ALDC Ambazari. Present Siemens Make SCADA System is in operation at SLDC Airoli and ALDC Ambazari since 07th Jan 2013 (a period of more than 7 years).

The SCADA System was in warranty for 2 years from 07th Jan 2013 followed by 5 years of AMC from 07th Jan 2015 to 06th Jan 2020. This AMC has been further extended up to 07th July 2022. And further it is extended up to July-2025. Also MSLDC had placed a separate AMC for T4 -1 servers at SLDC, Airoli and ALDC, Ambazari for the period of 3 years from 10th June 2016 to 09th June 2019 and further extended the same from 10th June 2019 to 09th Dec 2020; which was further extended up to Jan-2023.

At present 563 RTUs of MSETCL substations, CPPs, IPPs, solar, wind etc. and 3 Control centers are reporting to Sinuate Spectrum 4.5.1 SCADA system. 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 technology.

For this purpose tentative budget provision was proposed as 14 Crores, divided in 2 two years as 7 Cr and 7 Crs. This cost was not based on budgetary offer from any vendor but mere estimation based on previous experience of SCADA costing.

M/s POSOCO (Power system Operation Corporation Limited) has requested MSLDC to be a part of ULDC scheme. Under this arrangement, POSOCO shall act as consultant for new SCADA at no consultancy cost and MSETCL has to pay the project cost for replacement of MSLDC SCADA system discovered through open tendering process by WRLDC. The region wise package tender shall be carried out by POSOCO for the stake holders under Western region viz Gujarat, Madhya Pradesh, Chhattisgarh, Goa, WRLDC. For this purpose, CGM, WRLDC has proposed MSLDC to sign MOU with POSOCO to confirm willingness to participate in the project of Unified up-gradation/replacement of SCADA/EMS in WR. Thus, initially upgradation work was to be prepared by Maharashtra state. Afterwards it was decided to go with POSOCO under ULDC SCADA scheme for SCADA upgradation work. BR no 144/09 and revised BR no 149/21 were approved for this purpose. MSLDC is participating in ULDC SCADA as per principle approval for participation in ULDC scheme through POSOCO for upgradation of existing SCADA /EMS i.e. SITC of new SCADA at SLDC, Airoli & ALDC Ambazari vide BR. NO.144/09 dated 29.12.2020 and revised B.R. NO. 149/21 dated 14/10/2021.

The technical specifications are finalized by WRLDC considering latest technological & architectural aspects used in SCADA & IT industry and the BOQ is finalized by SLDC. WRLDC was requested to provide the tentative cost estimate of New SCADA system. WRLDC consulted with M/s. GE for the tentative cost estimate. Budgetary estimate is proposed based on costs provided by WRLDC from M/s. GE. The budgetary offer is around Rs 78.14 Crore including Software cost of Rs. 49.57 Crore and Hardware cost of Rs 17.30 Crore. MOU has been signed between POSOCO and MSLDC for participation in ULDC SCADA project of WR region, on 14/10/2021. Considering the above, Rs 40 Crore per year has been estimated during the two year period.

Upgradation / replacement of VPS system at ALDC Ambazari:

The control Room display screen at ALDC, Ambazari and SLDC, Airoli was lamp-based VPS Screen. The screen at SLDC, Airoli was upgraded to new LED based BARCO make VPS; but, the screen at ALDC, Ambazari was not upgraded to LED based. Considering the AMC of lamp-based screen was only up to 07.02.2022 and ULDC SCADA upgradation work will take more time, ALDC, Ambazari had proposed upgradation / replacement of VPS system at ALDC Ambazari amounting to Rs 1.5 Cr for FY 2022-23.

Afterwards M/s Siemens agreed to consider ALDC’s lamp-based VPS System in AMC and thus, the present AMC of lamp-based VPS System installed at ALDC Ambazari has been extended for a period of 2 years. During this period, execution of ULDC SCADA project is expected to be completed. Thus, now i.e. for FY 2022-23 and FY 2023-24 this provision is not required.

As ULDC SCADA upgradation project will be tenderised by POSOCO, and if it is not executed in stipulated time till the completion of AMC, the VPS screen at ALDC, Ambazari needs to be replaced. For this purpose, budget provision is proposed of Rs 1.50 Crore for the FY 2024-25. However, currently, the same is not included in the capitalisation. If the SCADA scheme is not implemented in time, the Petitioner will approach the Commission in suitable time.

Integration of new S/S at SLDC / ALDC SCADA (27 Number RTUs Integration)

The Chief Engineer (ACI) submitted action plan for visibility of 27 Number Partially working 132KV Substation/SAS substation. The rates for services towards integration of SAS/DCs/RTUs of any make over IEC-104 protocol into SCADA systems at SLDC Airoli and ALDC Ambazari shall be as under as per letter of award for rate contract issued to M/s Siemens Ltd. & rates are as below.

S.N.	Description	Unit Rates (Excluding taxes) per SAS/DCs/ Third party RTUs/ RTUs of any make in Rs.	QTY No.	Total amount in Rs. Lakh
1	Integration activities for SCADA visibility	3,00,000.00	27	81.00
2	Total cost including Taxes	Including 18% on item no. 1		95.58

Accordingly, scheme for 27 RTUs Integration is projected for an amounting of Rs. 95.58 Lakh. The same is projected to be capitalized in FY 2023-24. Real time visibility of MSETCL s/s is very important for Grid Monitoring and Control. Hence these s/s are to be integrated in SCADA at SLDC.

Development of software tools for Dynamic Line Rating (DLR) application in WAMS System by reputed government engineering institutions in Maharashtra to provide Decision support systems using Artificial Intelligence/Machine learning/Data Analytics for control room operator at SLDC, Airoli

There is a fast-growing demand of power in Mumbai and MMR and also extensive use of electric vehicles will play major role in enhancing the demand of electricity. Hence, it’s a need of time to increase the power handling capacity of Mumbai Corridor. There are four major lines which feeds power to Mumbai and MMR region from Padghe, Airoli, and Talegaon (Pune PG) substations. At present MSLDC don’t have any tools to ascertain real time capacity of these critical lines. The DLR project is pilot project for determining the specific line loadability & assurance of transmission capability of that particular line in real time. After implementation of PMUs at all Mumbai system corridor critical lines, the dynamic line rating application may help grid operator to address the real time ATC/TTC revision considering Mumbai embedded generation above context and the current scenario, it will helpful to develop application which will assist system operator while performing real time grid operations. Accordingly, it is proposed to develop Dynamic Line Rating (DLR) system to ascertain real time loading capacity of critical lines.

Advantages of DLR - The PMU data-based DLR as transmission line temperature monitoring tool with an intended application towards facilitating dynamic line rating. The tool is required to estimate and track the temperature of a 3-phase transmission line segment. The novelty of this temperature monitoring tool is that no additional temperature measurement sensors are required to be placed along the line. The tool is based on an algorithm which gives accurate resistance estimates in presence of bias errors in the measurement sensors. The performance of the tool is demonstrated utilizing data from PMUs installed at both the ends of line. The temperature estimates given by the monitoring tool can predict the dynamic thermal state of the line for forecasted power-flow scenarios. Rs. 20 Lakhs approved in MYT vide order no. 291 of 2019 is being proposed during FY 2023-24 under head of Upgradation of WAMS system.

Misc. Infrastructure work: MSLDC proposes various infrastructural development work in its campuses. CCTV for security purposes has been proposed. Structural strengthening and life extension works by external re-plaster, water-proofing and painting are planned. Similarly, energy efficiency and solar lighting related works are proposed.

IT infrastructure: Budget of Rs.75 Lakh is proposed during FY 2023-24 for the following:

i) 2 No's of NGFW Firewalls were procured on dated 16.11.2017 to enhance the cyber security for SCADA Network. License and Support from OEM is valid till 24.01.2024. Thereafter, these Firewalls will be out of support. Therefore, for protection of SCADA network from any cyber threat, 2 No's of NGFW Firewalls has to be procured before end of support of existing Firewall i.e. before 24.01.2024.

ii) 2 No's of FTP Servers are used for uploading of SCADA data on www.mahasldc.in website. These FTP servers were used at Data center of MSLDC, Airoli since 2015. In view of development of new mahasldc website, these servers needs to be upgraded with latest H/W configurations in FY 2023-2024.

iii) Since 05.10.2018, MSLDC has implemented Wi-Fi network connectivity for using internet on Laptops & Mobile devices of SLDC employees. In view of cyber security aspects, existing network of Wi-Fi devices has to be replaced with better and enhanced security features of Wi-Fi H/W devices.

Similarly, Budget of Rs.115 Lakh is proposed during FY 2024-2025 for the following:

(i) 2 No's of Cisco Routers were procured in FY 2017-2018 for SCADA Network. License and Support from OEM will be valid till APRIL 2024. Thereafter, these Cisco routers will be out of support. Therefore, 2 No's of Cisco routers needs to be procured before end of life of existing Cisco routers.

(ii) As some of the Desktop computers and its OS will be out of support from OEM, New Desktop Computers/Laptop/Multifunction Printer needs to be procured to carry out day to day office work by various sections of SLDC.

Demand / load forecasting services for the period of 3 years including a 6 months period for demonstrating the capabilities and accuracy factor for MSLDC

Scheme details: 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.

Further due to an increased penetration of RE Generation in the State, it is essential that Generation despatch should be planned and operated techno-commercially. In this regard Renewable Energy Management Centre (REMC) has been commissioned at MSLDC by PGCIL through the funding of MOP, New Delhi for effective management of Renewable energy through accurate Forecasting & scheduling. Further MERC (Forecasting, Scheduling & Deviation Settlement for Solar & Wind Generation) Regulations, 2018 are initiated w.r.t. 01.07.2019 and commercially implemented in the State w.r.t. 06.01.2020. The Forecasted Wind & Solar Generation through External Forecasting agencies under REMC and schedules from Qualified Coordinating agency (QCA) for respective Discoms are available. However, for effective utilization of this schedule along with the available conventional resources, an accurately forecasted block wise Demand estimation is essential. The CERC (DSM) (Fourth Amendment) Regulations, 2018 have been implemented in the Country. With the said amended regulations, additional penalties have been imposed for deviations above permissible volume limit of 250 MW. Also, the rates of penalties have been linked with the Average Area Market Clearing Prices (ACP), resulting in to heavy financial implications. Hence, in order to avoid deviations & hence, penalties, accurate demand estimation is required.

As MERC (DSM) Regulations, 2019 have been implemented in the State, the demand estimation at a SLDC level will act as a counter-check for the individual demand estimation carried out by the Buyers and estimates can be utilized for operational purposes. 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. In view of the regulatory requirements and the benefits as pointed out above, the scheme has been proposed to initiate a Discom-wise Demand Forecast at the MSLDC level.

Justification of change of cost and delay in scheme implementation: The cost considered for Demand Forecasting System while submission of ARR petition of MSLDC was tentative. Based on the discussions held with other States, the cost was arrived. However, on 25.04.2020, MSLDC sought budgetary offers from various vendors for providing Demand Forecasting Services. Based on the offers received, the lowest offer rates have been considered for the scheme. Administrative approval for the scheme was received on 28.08.2020 for the total estimated cost of Rs. 177 Lakhs (Capex: Rs. 42.48 Lakhs) and DPR was submitted to Hon'ble MERC on 25.09.2020 for approval. On dated

23.05.2021, Hon’ble MERC has informed that the total Capex amount is only Rs.42.48 Lakhs, below Rs.100 Lakhs, the scheme is not required approval. Accordingly, the tenderization activities have been initiated and the draft tender document has been prepared. Suitable provision has been made in this regard in capitalization.

REC: The development of software for online REC application was envisaged and accordingly the provision of 25Lakhs was made during the in FY 2020-21. However, due to poor response from software developers, the same could not be materialized. This provision shall be carried forward and the provision may be increased to 50 Lakhs for FY 2022-23 considering present cyber security audit and other IT related expenditure along with development cost.

GAMS: In the FY 2021-22, MSLDC had proposed hardware and software for implementation of ancillary Reserve (GAMS) in the State, for which Rs. 50 Lakhs CAPEX expenditure was proposed. However, same scheme was not implemented and expenditure was not booked due to following reason:

As per SANTULAN report of NLDC dated 27th December 2019, for implementation of Reserve Regulatory Ancillary Services at Intra-State Level, it was recommended to establish robust framework as per SAMAST report, equip the SLDCs with IT infrastructure, notification of Regulation by State Commissions for availability of Reserves and facilitation for deployment of reserves through suitable mechanism for compensation. Further it has been recommended to adopt suitable algorithm for optimization of reserves despatch.

SANTULAN committee recommended GAMS software (algorithm) for implementation this mechanism, which may be implemented after notification of state regulatory commission guidelines or regulations in this subject. In this SANTULAN report it was proposed to give suitable regulation for implementation of this mechanism in the state. However, such regulation or guidelines about implementation of this mechanism are not yet notified. Now, the same scheme of hardware and software for implementation of ancillary Reserve (GAMS) is proposed for FY 2023-2024 with CAPEX of Rs. 50 Lakhs, subject to any regulatory guidelines or regulations notification for implementation of this mechanism.

MSLDC humbly requests the Hon’ble Commission to approve the Capital Expenditure and Capitalization submitted above for FY 2023-24 to FY 2024-25.

Further, the summary of objective and benefits of all schemes (DPR and non-DPR), already capitalized and proposed schemes, are given at the end of this chapter.

Utilization of LDC fund

As per the directive of Hon'ble Commission with respect to creation and utilization of LDC fund in Case No. 171 of 2017 and in Case No. 291 of 2019, the fund can be used for capitalization. The Hon'ble Commission had made the following observations:

> *"5.6.11 Moreover, the MERC MYT Regulations, 2019 also contain an enabling provision for creation of the LDCD Fund. The relevant Regulation is reproduced below for reference:*
>
> *"94 LDC Development Fund*
>
> *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."*
>
> *5.6.12 Having reviewed the provisions in the Regulations issued by other Regulators in the country, the Commission presently intends to continue with the philosophy of using surplus available in LDCD Fund for the purpose of supporting the capital expenditure required for operations of MSLDC. From the perspective of ensuring utilisation of the LDCD fund only for schemes approved by the Commission and also for the cost approved by the Commission against these schemes and also ensuring ease of tracking of the utilisation of the funds, the Commission has linked the utilisation against the capitalization approved by the Commission at the time of truing up for respective years. Accordingly, the Commission will not consider any addition to the normative loan and equity capital against the approved capitalization and hence MSLDC will not be eligible to claim RoE, interest on Loans and depreciation on account of asset addition which is funded through the LDCD Fund."*

Following above approach, the capitalization for FY 2023-24 to FY 2024-25 is proposed to be funded from LDC fund, considering the proposed capitalization and amount of LDC fund. Subsequent claims for RoE, interest on Loans and depreciation have not been projected by MSLDC for the asset created from LDC fund. For those years, only assets created up to FY 2017-18 have been considered for the purpose of depreciation, interest on loan and RoE. Considering the LDCD fund amount at the starting of FY 2024-25 (Rs. 794.57 Lakh) and asset creation projected during the year (Rs. 4566.90 Lakh), partial asset (of Rs. 794.57 Lakh) would be created from the fund. For remaining asset (Rs. 3772.33 Lakh), which is not funded through LDCD fund, depreciation, interest on loan and RoE have been calculated. So, in FY 2024-25, depreciation, interest on loan and RoE have been calculated on old asset created up to FY 2017-18 and new asset created in FY 2024-25, without the support of LDCD fund. 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 2018-19 to FY 2024-25. 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 2018-19 to FY 2024-25 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 2018-19 to FY 2024-25 which 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 earned through these investments will be passed on to the Beneficiaries as part of the Non-Tariff Income. Including this income as a part of the LDCD Fund may be dealt with by the Commission at the time of the next MTR Order or through separate direction as deemed appropriate.

Considering the above guidelines, the fund utilization and interest income from LDCD fund (to be treated under non-tariff income) is given below.

Table 53: LDCD fund for FY 2023-24 and FY 2024-25

(Rs. Lakh)

Particulars	Amount allocated to the LDCD fund FY 2023-24	Amount allocated to the LDCD fund FY 2024-25
LDCD fund at the starting of year	5587.35	794.57
Utilisation of LDCD Fund	4792.78	794.57
LDCD fund at the end of year	794.57	0.00
Average LDCD fund	3190.96	397.29
Interest rate	5.20%	5.20%
Income earned on LDCD fund – transferred to non-tariff income	165.93	20.66

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 considered for FY 2021-22 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 above details.

7.5.Depreciation

MSLDC has calculated depreciation for FY 2023-24 to FY 2024-25 in accordance with the MERC MYT Regulations, 2019 and based on the projected capitalization during each year of the Control Period. The depreciation for the asset created from LDC 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, 2019 and the same is reproduced below.

> *"28 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:*

…………

(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:

………….

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."

The depreciation has been calculated as per rates derived based on actual depreciation of FY 2017-18 amount and asset value for asset not funded through LDCD fund. In FY 2024-25, partial asset is supposed to be funded without LDCD fund, for which depreciation is claimed. For asset addition during any year, average value of asset has been assumed for depreciation. For computer software/IT equipment, 15% rate of depreciation has been assumed as per earlier directive of Hon'ble Commission. The depreciation from FY 2023-24 to FY 2024-25 has been estimated as shown in Table below:

Table 54: Depreciation Estimated for FY 2023-24 and FY 2024-25

(Rs. Lakh)

Particulars	FY2023-24		FY2024-25	
	Approved in Case No 291 of 2019	Revised projection	Approved in Case No 291 of 2019	Revised projection
Depreciation	116.38	202.90	127.63	249.72

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, 2019 is referred, which is reproduced below:

"27 Debt-equity ratio

27.1 For a capital investment Scheme declared under commercial operation on or after April 1, 2020, debt-equity ratio as on the date of commercial operation shall be 70:30 of the amount 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 Licensee or MSLDC 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 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 for determination of Tariff:"

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, 2019. The debt is considered as normative loan as per the above provision. At present, 100% funding is assumed to be funded through equity only. However, the amount in excess of 30% of equity is considered as normative loan only. The addition in normative loan in is projected as 70% of capitalization, which is not funded through LDCD fund.

The repayment of loan and interest on loan related provisions as given in MYT Regulations, 2019 are shown 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:

………………………

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."

Considering the above provisions, the yearly depreciation as calculated above, is considered as loan repayment for each year. MSLDC has considered the rate interest of 8.93% as per provision given in MYT Regulations 2019. This interest rate is as per information available from MSETCL for FY 2021-22. The interest on Loan for FY 2023-24 and FY 2024-25 is shown in Table as below:

Table 55: Interest expenses for FY 2023-24 and FY 2024-25

(Rs. Lakh)

Particulars	FY 2023-24		FY 2024-25	
	Approved in Case No 291 of 2019	Revised projection	Approved in Case No 291 of 2019	Revised projection
Interest and finance Expenses	60.17	43.18	62.30	140.87

The interest expenses increases in FY 2024-25 due to the fact that additional normative loan is considered for capitalization, without availing LDCD fund. MSLDC requests to approve the projected loan expenses as given above. The details of interest expenses from FY 2023-24 to FY 2024-25 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, 2019. RoE is based on the projected year-wise equity quantum. Up to FY 2023.24, no new equity has been added as yearly capitalization are assumed to be funded through LDCD fund. Hence, opening equity amount prevailing during FY 2023-24 is continued in FY 2024-25. In FY 2024-25, partial capitalization is assumed from LDCD fund (as per availability of fund) and therefore, 30% of remaining capitalization (not funded from LDCD fund) is projected as additional equity. The provision as given in MYT regulations, 2019 is given below.

> *"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 truing up for respective year based on actual performance, after prudence check of the Commission:*
>
> *29.2 Base 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 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 cost, for the investments put to use in Generation Business or Transmission Business or Distribution Business or MSLDC, for such Year:"

MSLDC has considered RoE at rate of 14% (base RoE, as explained earlier) on the opening equity as well as on 50% of the equity contribution during year, which is 30% of the asset addition during the year. The submission of MSLDC with respect to claiming 14% RoE (base) is already submitted in provisional true-up section. The projected RoE for the remaining two years of the control period is shown in the table below:

Table 56: Return on Equity for FY 2023-24 and FY 2024-25

(Rs lakh)

Particulars	FY 2023-24		FY 2024-25	
	Approved in Case No 291 of 2019	Revised projection	Approved in Case No 291 of 2019	Revised projection
Return on Equity @14%	179.31	222.50	187.89	301.72

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. The additional RoE of 1.5% will be claimed after actual data is available based on approved guidelines of the Commission.

7.8.Income Tax

In continuation of MSLDC's submissions regarding Income Tax in the previous chapters, MSLDC has not claimed Income Tax. However, if the status changes in between, the Petitioner will approach Hon'ble Commission to review the same.

7.9.Non-Tariff Income

Regulation 98 of the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019 specifies provision for non-tariff income for MSLDC. The same is reproduced below.

"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 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."

Considering the above provision, non-tariff income as assumed for FY 2022-23 is considered for FY 2023-24 and FY 2024-25. The interest income from LDCD fund is considered as non-tariff income, as considered by the Hon'ble Commission. The details are already provided under paragraph deals with 'LDCD fund'. The projected non-tariff income is shown in the table below:

Table 57:Non-Tariff Income for FY 2023-24 and FY 2024-25

(Rs. Lakh)

Particulars	FY 2023-24		FY 2024-25	
	Approved in Case No 291 of 2019	Revised projection	Approved in Case No 291 of 2019	Revised projection
Non-tariff income	20.47	193.49	14.90	48.22

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 / re-scheduling charges for FY 2023-34 and FY 2024-25 as approved by the Hon'ble Commission in Case No. 291 of 2019. The same is given below.

Table 58: Income from Open Access Charges for FY 2023-24 and FY 2024-25

(Rs. Lakh)

Particulars	**FY 2023-24**		**FY 2024-25**	
	Approved in Case No 291 of 2019	**Revised projection**	**Approved in Case No 291 of 2019**	**Revised projection**
Income from Open access	1,227.48	1,227.48	1,252.03	1,252.03

7.11. Summary of ARR for Control Period from FY 2023-24 to FY 2024-25

Based on the above discussion, the projected expenses from FY 2023-24 to FY 2024-25 is summarized in Table below:

Table 59: Summary of Annual Fixed Charges for FY 2023-24 to FY 2024-25

(Rs. Lakh)

S. No	**Particulars**	**FY 2023-24**		**FY 2024-25**	
		Approved in Case No 291 of 2019	**Revised projection**	**Approved in Case No 291 of 2019**	**Revised projection**
1	Operation & Maintenance Expenses	3,217.49	3769.65	3,320.29	3851.42
2	Depreciation Expenses	116.38	202.90	127.63	249.72
3	Interest on Loan Capital	60.17	43.18	62.30	140.87
4	Interest on Working Capital	70.46	66.54	72.56	73.11
5	RLDC Fees and WRPC Charges	1,361.35	684.10	1,361.35	718.30
6	Reactive Energy Charges paid to Generators/TSUs				
7	Income Tax				
8	**Total Revenue Expenditure**	**4,825.85**	**4766.36**	**4,944.13**	**5033.42**
9	Return on Equity Capital	179.31	222.50	187.89	301.72
10	**Total Expenditure for MSLDC**	**5,005.15**	**4988.85**	**5,132.02**	**5335.14**
11	Less: Non-Tariff Income	20.47	193.49	14.90	48.22
12	Less: Income from Open Access charges	1,227.48	1227.48	1,252.03	1252.03
13	Less: Income from Reactive Energy Charges				
	Gross Annual Fixed Charges for (AFC) MSLDC	**3,757.21**	**3567.88**	**3,865.10**	**4034.89**

7.12. *Details of cost benefits and objective and purpose of DPR and non-DPR projects (capitalized and proposed capitalization)*

DPR scheme capitalised

Name of the scheme	approval letter number	Date	approved cost	approved phasing (year wise expenditure)	approved scope	envisaged objective	capitalization incurred	item/equipment installed	benefits achieved
S/I/T/C of Hardware IT, Firewall server	MERC/Capex/MSLDC/2018-19/1249	28-Sep-18	142		Supply , Installation, testing & commissioning of following items ; 1. Next Generation Firewall (External Firewall) 2. UTM Firewall (Internal Firewall) 3. Web server. 4. Red Hat Enterprise Linux 5. Other Hardware equipments i.e.KVM Switch,Layer 2 Switch, Network Rack.	a) To protect data and information infrastructure in cyberspace. b) Build capabilities to Prevent and respond to cyber threats, c) reduce vulnerabilities and minimize damage from cyber incidents	In FY 2019-20 : 138	1. Next Generation Firewall (External) in HA Mode: Checkpoint 5100 NGTX 2. UTM Firewall (Internal) in HA Mode : SOPHOS XG 430 3. Web server : Make NEC , Model : Express5800/R320e-M4 N8800-202F 4. Red Hat Enterprise Linux 7.2 Operating System 5. KVM Switch 4 QTY : ATEN, Layer 2 Switch 2 QTY: CISCO SG 300 , Network Rack : NetRack 42 U.	a. Data & Information infrastructure protection in cyberspace by complying to the IOCs shared by CERT-IN, CERT-GO, CSK, NCIIPC, CEA b. Cyber threat mitigation by advanced threat prevention features. Prevention of known & zero day cyber threat. c. Reduced vulnerabilities and minimized damage from cyber incidents d. Access control by separation of Server Network (DC)& User Network e. Improved network performance by blocking unwanted traffic
Construction of new UCR wall (Compound wall)	MERC/Capex/MSETCL/2018-19/079	11-Mar-19	111.15	Work order for amount of Rs. 85,73,722/- was placed on Dt. 11.06.2019 for renovation of damaged	Renovation of damaged UCR wall with barbed wire compound fencing with RCC compound wall at SLDC premises, MSETCL's Kalwa Complex, Airoli, Navi Mumbai	For Security of MSLDC Building and its premises	Rs. 35,41,814 /- for the F.Y. 2019-20	Only 40% of the total work is completed by the vendor and shown inability to complete remaining 60% work. Hence only 40% amount paid to the vendor. Remaining 60% work will be carried out with new E-Tender.	40% area of the MSLDC premises compound wall is now under safety. For safeguarding remaining 60% area of compound wall, security guards deployed.

DPR scheme capitalised

Name of the scheme	approval letter number	Date	approved cost	approved phasing (year wise expenditure)	approved scope	envisaged objective	capitalization incurred	item/equipment installed	benefits achieved
				UCR Compound Wall for the F.Y. 2019-20.					
H/W S/W at control center(80 RTUs/SAS Integration)	MERC/Capex/MSETCL/2015-16/01611	03-Mar-16	538(Short closed to 283 Lakh)		Services for integration of real time of MSETCL RTUs under 80 RTUs scheme with control centre at SLDC Kalwa &ALDC Ambazari	Integration of MSETCL S/s in SCADA System.	Year 19-20: 127.44 lakhs, Year 21-22: 120.36 Lakhs	Integration and Configration work in SCADA Spectrum4.5.1 Software	Data acquisition of MSETCL S/s for monitoring of real time operation of Maharashtra State Power Grid at SLDC Kalwa and ALDC Ambazari
Development of S/W for S&D , DS, SEA, DSM & Cloud	MERC/Capex/SLDC/2019-20/538	09-Aug-19	838		Development of Comprehensive Software for Scheduling & Despatch, Deviation Settlement and State Energy Accounting activities and Implementation of DSM Mechanism in State Load Despatch Centre (MSLDC) of Maharashtra along with hosting of Entire Data Base and Application Software on Cloud for 1st year at Maharashtra State Load Despatch	Implementation of Hon'ble MERC DSM Regulations-2019	1) Rs. 2,91,69,600 in 2020-21 and 2) Rs. 1,69,44,800 in 2021-22. Totalling to Rs.4,61,14,400	M/s. PWC developed the Comprehensive Software for Scheduling & Despatch, Deviation Settlement and State Energy Accounting activities and Implementation of DSM Mechanism in State Load Despatch Centre (MSLDC) of Maharashtra along with hosting of Entire Data Base and Application Software on Cloud for 1st year at Maharashtra State Load Despatch Centre, Airoli, Navi Mumbai	Hon'ble MERC DSM Regulations-2019 is commercially implemented in the state from 11.10.2021.

DPR scheme capitalised

Name of the scheme	approval letter number	Date	approved cost	approved phasing (year wise expenditure)	approved scope	envisaged objective	capitalization incurred	item/equipment installed	benefits achieved
					Centre, Airoli, Navi Mumbai				
70 SAS/RTUs Integration	MERC/Capex/MSETCL/2015-16/01611	03-Mar-16	538(248 Lakh allocated after short closing 80 RTUs integtation Scheme)		Services for integration of real time of MSETCL RTUs under 70 RTUs scheme with control centre at SLDC Kalwa &ALDC Ambazari	Integration of MSETCL S/s in SCADA System.	Year 21-22: 24.78Lakh	Integration and Configration work in SCADA Spectrum4.5.1 Software	Data acquisition of MSETCL S/s for monitoring of real time operation of Maharashtra State Power Grid at SLDC Kalwa and ALDC Ambazari

Capitalisation of Non-DPR schemes - Purpose and objectives

Scheme	Purpose	Objective
S/I/T/C of 3 DCs	For data acquisition from IPPs/CPPs and RE pooling S/s in MSETCL N/w for real-time data acquisition to existing SCADA/REMC System	For real-time visibility of IPPs/CPPs and RE pooling S/s
S/I/T/C 2 No of elevator at MSLDC Airoli	smooth running of elevators for MSLDC Staff and visitors	Replacement of old and faulty elevators
S/I/T/C of New 240 line Digital EPABX m/c	smooth running of intercom system for MSLDC Staff and visitors	Replacement of old and faulty EPABX
Vehicle parking shed	Provide all weather shelter for departmental vehicles	Reduce damage to departmental vehicle
DG set with DDC in new SLDC building	Stability to the AC power supply	Give uninterrupted AC power supply to MSLDC building
REC	Online application for REC	Digital processing of REC application, without manual intervention, and time optimization
S/I/T/C of video wall display unit 2X2	For establishment of Cyber Security Operations Center (C-SOC) at MSLDC.	To monitor the cyber threats to IT and OT infrastructure installed at MSLDC around the clock
S/I/T/C of of Backup appliance	For automated backup of the Data of applications hosted at MSLDC, Critical Systems & Servers	Information / Data availability in case of any incident or disaster
S/I/T/C of 7 No of desktop computer with MS office licence	For VAPT of IT and OT infrastructure installed at MSLDC & for establishment of Security Operations Center (C-SOC) at MSLDC.	To monitor, prevent, detect, investigate, and respond to cyber threats around the clock and Cyber Security Compliance.
S/I/T/C of anti virus software along with server	For preventing viruses and other kinds of malicious software attacks on Desktops, Laptops, Servers and applications hosted at MSLDC.	To ensure the smooth functioning of IT infrastructure installed at MSLDC for Information availability & integrity
S/I/T/C of video conferencing system at SLDC conference room	For attending Video Conference Meeting with the various stakeholder	For attending Video Conference Meeting with the various stakeholder
Development of new Maha SLDC website and hosting on cloud	To display the upto date Information of MSLDC to the stakeholders	Upgradation of MSLDC Website by using latest web technologies and Securing website from cyber threats.

Capitalisation of Non-DPR schemes - Purpose and objectives

Scheme	Purpose	Objective
SCADA incedental expense	To meet emergency expenses as and when required.	To meet emergency expenses as and when required.
7 LED screen at control room to show operational data	To show operational data of SCADA, REMC and PMUs and scheduling software at MSLDC Control Room	For effective Grid Management
Integration of 20 DC at SLDC Kalwa and ALDC	To enable Integration of new architecture of 20 DCs proposed by CE(ACI) in SCADA System at SLDC.	To improve redundancy and reliability of SCADA data.
S/I/T/C VC at control room	Real-time video conferencing with WRLDC whenever required.	For effective Communication with WRLDC and efficient Grid Management.
Integration of NEW S/S at SLDC Kalwa and ALDC SCADA (27 RTU integration)	Integration of MSETCL S/s in SCADA System.	Data acquisition of MSETCL S/s for monitoring of Maharashtra State Power Grid.
PSSE system study software (2nd keys)	Presently SLDC is having one PSSE Software license for carrying out Load Flow studies required for outage management and contingency analysis. The network complexity has increased tremendously, hence, all the outages are to be granted only after simulation studies and contingency analysis so as to avoid any grid failure. Due to availability of onely one license, it is becoming difficult to carry out studies by multiple engineers at a same time. Hence, it has been proposed to procure 2 Nos. of PSSE Software licenses.	To carry out load flow studies and contingency analysis prior to approval of outages. To carry out simulation studies for validation of various LTS/SPS and islanding schemes.
State specific customization in REMC software and allied additional requirement of hardware through change order	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, to incorporate the new	To incorporate the regulatory change of G-DAM notified by Hon'ble CERC. To make flexibility in modelling Inter-State & Intra-State transactions expected in future. To ease out day to day functions.

Capitalisation of Non-DPR schemes - Purpose and objectives

Scheme	Purpose	Objective
	regulatory changes and making software future ready, the scheme has been proposed.	
Renovation and modernization of existing SCADA at SLDC and ALDC	Replacement of old SCADA due to end of life.	New SCADA with upgraded and secure (Cyber) Software/Applications and Hardware will assist in better Grid Monitoring and decision support.
Life extension of new MSLDC building	Office building life gets increased as water seepage reduces the life of RCC structure.	Water-proofing of complete terrace and ACP sheets
Staff recreation and rejuvenation facilities	Benefits the health of Staff and increases their productivity and efficiency.	Construction of full-fledged gymnasium
BMS Automation	Ease of operation and reliability of electrical supply system.	Automation of electrical supply system and redundancy in the flow of electrical supply system.
Battery set with charger	Existing 48V DC Battery source is overloaded. Hence need extra battery set and charger.	provide 48V DC power supply to servers in the telemetry room
Security cabin	to give proper shelter to Security Guards during every season	to give proper shelter to Security Guards during every season
ALDC Misc expenses - landscapping, water supply, Testing equipment, VC, staff recreation	To cater the requirement of ALDC office and staff	smooth working of ALDC
ALDC IT infrastructure	To cate the regular IT infrastructure need	smooth working of ALDC
Upgradation of WMS	To monitor the real-time thermal rating of critical lines.	Efficient Grid monitoring.
CCTV, Security system, voice recording	for better security & vigilance	Upgradation of CCTV system and its accessories

Capitalisation of Non-DPR schemes - Purpose and objectives

Scheme	Purpose	Objective
Life extension of Krishna and Kaveri building	Krishna & Kaveri building life gets increased as water seepage reduces the life of RCC structure.	external Water-proofing and re-plastering of both the buildings
Structural strengthening of new MSLDC building	for life extension of the new building	Structural strengthening of beams and columns of new building
Energy efficient building upgradation and solar lighting	to reduce electricity bills	Solar rooftop panel electrical lighting system is proposed
IT infrastructure (Firewall, 2 No of FTP, WIFI device, new desktop and laptop)	For Secured internet access & for performing day to day official activities	To support the business functions in secured manner
Hardware for reserve and ancillary services software (GAMS software)	As per SANTULAN report of NLDC dated 27th December 2019, for implementation of Reserve Regulatory Ancillary Services at Intra-State Level, It was recommended to establish robust framework as per SAMAST report, Equip the SLDCs with IT infrastructure, Notification of Regulation by state commissions for availability of Reserves and facilitation for deployment of reserves through suitable mechanism for compensation. Further recommended to adopt suitable algorithm for optimization of reserves despatch.	SANTULAN committee recommended GAMS software (algorithm) for implementation this mechanism, which may be implemented after notification of state regulatory commission guidelines or regulations in this subject. In this SANTULAN report it was proposed to give suitable regulation for implementation of this mechanism in the state. However, such regulation or guidelines about implementation of this mechanism are not yet notified. Now, the same scheme of hardware and software for implementation of ancillary Reserve (GAMS) is proposed for FY 2023-2024 with CAPEX of Rs. 50 Lakhs, subject to any regulatory guidelines or regulations notification for implementation of this mechanism.
Development of load forecasting software	Presently no load forecasting is carried out at SLDC. As per MEGC, SLDC needs to carry out load forecasting for operational purpose. Hence, it has been proposed to avail the services of load forecasting services from reputed vendors for a period of 3 years. After gaining the experience about load forecasting accuracy, further decision of development of software can be taken.	To forecast load on Month-ahead, Week ahead, Day Ahead & Intra day basis for the whole state and for individual Discoms for operational purpose. Forecasted load can be compared with the load forecasted by Discoms, which will provide suitable comparative parameter for further improvement to achieve better accuracy and avoid deviations.
Development of reserve and ancillary service software for intrastate generation (GAMS)	As per SANTULAN report of NLDC dated 27th December 2019, for implementation of Reserve Regulatory Ancillary Services at Intra-State Level, It was recommended to establish robust framework as per SAMAST report, Equip the SLDCs with IT	SANTULAN committee recommended GAMS software (algorithm) for implementation this mechanism, which may be implemented after notification of state regulatory commission guidelines or regulations in this subject. In this SANTULAN report it was proposed to give suitable

Capitalisation of Non-DPR schemes - Purpose and objectives

Scheme	Purpose	Objective
	infrastructure, Notification of Regulation by state commissions for availability of Reserves and facilitation for deployment of reserves through suitable mechanism for compensation. Further recommended to adopt suitable algorithm for optimization of reserves despatch.	regulation for implementation of this mechanism in the state. However, such regulation or guidelines about implementation of this mechanism are not yet notified. Now, the same scheme of hardware and software for implementation of ancillary Reserve (GAMS) is proposed for FY 2023-2024 with CAPEX of Rs. 50 Lakhs, subject to any regulatory guidelines or regulations notification for implementation of this mechanism.
S/I/T/C for 2 nos of CISCO routers and switches for scada MPLS	For retrieval of substation data into SCADA System.	Monitoring of Grid parameter at MSLDC Control Room.
S/I/T/C of new desktop laptop	To perform day to day official activities.	To perform day to day official activities.
Furniture for office and equipment	to replace the old furniture and purchase of new furniture requirement	smooth working of SLDC
A/C Plant	for energy efficiency, fast cooling and quick operations	Old AC will be replaced with the VRF Air Conditioners
UPS system	Reliable AC power supply to servers and PCs	Replacement of old UPS System with latest system.

8. Sharing of MSLDC Charges

As per Regulation 99 of MERC MYT Regulations, 2019, 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, the proviso to Regulations 99.1 of the MYT Regulations, 2019 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) / ∑[BaseTCR(u)](t))*
>
> *Where,*
>
> *AFC(u)(t) = MSLDC Charges to be shared by the Beneficiary (u) for the Yearly period(t);*
>
> *AFC(t) = Total MSLDC Charges to be shared by the Beneficiaries for the Yearly period(t);*
>
> *Base TCR (u) = [CPD(u)(t) + NCPD(u)(t)] /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 Yearly period(t);*
>
> *NCPD(u)(t) = Average Non-Coincident Peak Demand of the Beneficiary (u) for the Yearly period(t):*
>
> *Provided that the Allotted 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 2018-19 to FY 2021-22 is submitted below.

Table 60: Base TCR of past three years

(MW)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	CAGR
Base TCR	21416	21260	20457	23418	3.02%

Considering the above data, the cumulative average growth rate (CAGR) is worked out as 3.02%.

The CAGR has been used to project the base TCR. The projected base TCR is given below.

Table 61: Projected base TCR for next control period (MW)

Particulars	FY 2022-23	FY 2023-24	FY 2024-25
Base TCR	24127	24856	25608

As per sharing of base TCR prevailed during FY 2021-22, sharing of the same is proposed for next two years period, the same is given below.

Table 62: Sharing of base TCR

Transmission System Users	Sharing of base TCR
MSEDCL	86.415%
TPC-D	3.172%
AEML-D	5.751%
BEST	2.983%
Indian Railway	1.528%
Mindspace Properties	0.029%
Gigaplex Properties	0.015%
KRC infrastructure	0.011%
Nidar Utilities	0.010%
MADC	0.047%
E ON Phase-1	0.025%
E ON Phase-2	0.010%
JNPT	0.002%
Laxmipati Balaji	0.002%
Total	**100.00%**

Considering the above sharing of base TCR and ARR proposed, the yearly charges to be paid by the TSUs are given below.

Table 63: Sharing of MSLDC Charges for FY 2023-24 to FY 2024-25

(Rs. Lakh)

Users	FY 2023-24	FY 2024-25
MSEDCL	3083.17	3486.73
TPC-D	113.19	128.00
AEML-D	205.18	232.04
BEST	106.42	120.35
Central Railway (Indian Railways)	54.50	61.64
Mindspace Business Parks Pvt. Ltd. (MBPPL)	1.04	1.17

Users	FY 2023-24	FY 2024-25
Gigaplex Estates Pvt. Ltd. (GEPL)	0.55	0.62
KRC Infrastructure Projects and Private Ltd	0.40	0.45
Nidar Utilities Panvel LLP	0.35	0.40
Maharashtra Airport Development Corporation	1.69	1.91
E ON Phase-1	0.89	1.00
E ON Phase-2	0.37	0.42
JNPT	0.06	0.07
Laxmipati Balaji	0.09	0.10
Total	3567.88	4034.89

Further, as per the MYT Regulations, 2019, MSLDC Charges per MW per month shall be computed in accordance with the following formula:

Monthly MSLDC Charges (Rs. / MW / Month) = [AFC(u)(t) ÷ ∑[Base TCR(u)] (t)] ÷ 12

Accordingly, the projected MSLDC Charges works out as under:

Table 64: Proposed MSLDC Charges for FY 2023-24 to FY 2024-25

Monthly MSLDC Charges	FY 2023-24	FY 2024-25
Total MSLDC Charges (Rs. Lakh)	3567.88	4034.89
Base Transmission Capacity Right (MW)	24856	25608
Proposed MSLDC charges (Rs/MW/Month)	1196.18	1313.04

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 each year of next two years.

Further as per Regulation 37 of MYT Regulations, 2019, 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, 2019, 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 ARR of MSLDC.

9. Fees to be charged by MSLDC

The Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2019 under Regulation 100 specifies as under:

"100. Fees to be charged by MSLDC

100.1 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."

9.1.Registration or Connection Fees

The Hon'ble Commission in MSLDC MYT Order in Case No. 291 of 2019 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. 2250 per revision as approved under Case No. 291 of 2019.

9.3.Short Term Open Access Application Processing Fees

MSLDC requests the Hon'ble Commission to retain the Short Term Open Access (STOA) Application Processing Fee of Rs.7500 per application as approved under Case No. 291 of 2019.

9.4.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. 291 of 2019. MSLDC humbly requests the Hon'ble Commission to allow MSLDC to levy and recover proposed fees and charges for FY 2023-24 to FY 2024-25.

10. Compliance to Directives

MSLDC submits its compliance to various directives of the Hon'ble Commission under Case No. 291 of 2019.

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 Despatch Centre (SLDC) from MSETCL on the same lines as formation of Power System Operation Corporation (POSOCO) and its separation from Power Grid Corporation of India Ltd (PGCIL)*

  ii. *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 necessary approvals, sanctions, permission, etc. as may be required for this purpose; and

v. Engagement 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.
  b. 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 recommended setting up of a new 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.

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 in its earlier submissions in Case no 171 of 2017 had submitted its initiatives towards continuous technology upgradation and operational system upgradation. MSLDC had stated that it 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 challenges. MSLDC in its earlier submissions in Case no 291 of 2019 had submitted its initiatives towards continuous technology upgradation and operational system upgradation. Further, MSLDC would like to submit specific initiatives for meeting the various challenges.

- **REMC:** Under Green Energy Corridor initiative of MoP, GoI has entrusted responsibility of implementation of Renewable Energy Management Centre (REMC) in all RE rich states including Maharashtra. PGCIL is nominated as Nodal Agency for REMC implementation. Implementation by PGCIL includes deployment of Hardware and REMC Application Software at Control Centre which will be funded through Grant Benefit Scheme from Indo-German consortium. The real time data required for REMC from RE generators/pooling stations shall be in scope of respective states to be arranged through concerned RE Generators. Forecasting & Scheduling Software has been implemented in the State w.e.f. 01.07.2019 on trial basis and implemented commercially w.e.f. 06.01.2020. As on date 128 Nos. of PSS having installed capacity of 7618 MW (Wind: 4992 MW; Solar: 2626 MW) has been registered in REMC and scheduling of the said capacity is carried out through REMC.

  At the time of DPR preparation, MSLDC had identified 66 Nos. of RE Pooling Sub-stations connected to intra-state transmission system for availing forecasting services. However, day by day, the RE installation is increasing and hence, to integrate the additional capacity for forecasting, separate order for availing Power & Weather forecasting services has been issued to the vendor vide PO No. 3100040986 dt: 07-08-2022. Thus, forecasting of total 121 Nos. of PSS having installed capacity of 7381 MW (Wind: 4992 MW; Solar: 2389 MW) is presently carried out through REMC. As the estimated No. of PSS for the year 2022 has increased above 121 Nos., administrative approval for integration of additional PSS (20 Nos. for 2022 & 34 Nos. for 2023) for availing forecasting services has been sought. The forecasting of remaining 7 Nos. of PSS has been started. Thus, provision of additional 13 Nos. & 27 Nos. of PSS is available for year 2022 & year 2023 respectively.
- The **DSM Regulation** was notified by the Hon'ble Commission on 01.03.20219, wherein the Hon'ble Commission has specified the date for coming into force of these Regulation which shall not be later than 1st April 2020. After the notification from the Hon'ble Commission, the budgetary offer for developing DSM software were sought from various software

developers. After tendering the contract was finalized and total cost quoted by the vendor includes the cost of DSM software development along with integration DSM software with other software, Cloud hosting charges and AMC cost for three years post expiry of 03 years warranty period.

- **Addressing difficulties in FBSM:** The Hon'ble Commission had issued final order in Case No. 297/2018 wherein MSLDC is directed to consider the rate of power purchased from the Power Exchange and Captive Power Plants (CPPs) for Weighted Average System Marginal Price (WASMP) calculation in FBSM bills. Therefore, MSLDC had awarded work order to M/s SIEPL (formerly L&T) to carry out necessary changes in the software so as to incorporate those changes along with some feature for speeding up processing time. Accordingly, a new patch has been developed on .NET platform to speed up the process of reports downloading along with bill generation and also reduced frequent instances of software malfunctioning. Also additions of New deem distribution licensee along with some modification in the modules related to scheduling billing was undertaken for multi-tasking & smooth functioning.
- **Monthly Transmission Loss assessment through SAP-ERP:** MSETCL and MSLDC had developed a system for loss computation on monthly basis through ERP-EAS system and Transmission System Loss figures for last month are being displayed on MSLDC website by 20th of every month. However, Transmission Loss Accounting is one of the module developed in the DSM software and as per the Hon'ble MERC Suo-Motu order dated 07.10.2021, the commercial settlements as per DSM Regulations commenced in the state from 11.10.2021. The monthly Transmission Loss is calculated through this module from the month of October-2021.
- **IT infrastructure:** For establishment of Security Operation Centre (SOC), Video Wall Display Unit along with desktop Computers are required in SOC Room at SLDC Airoli. Further, high end desktop are required for carrying out VAPT (Vulnerability Assessment and Penetration Testing) of Web Applications and SCADA applications. For this purpose, Work order was issued on 31 march 2022 in FY 2021-2022. Further MSLDC has initiated process of developing new mahasldc.in website and hosting it on cloud. Further, for protection of SCADA network from any cyber threat, 2 No's of NGFW Firewalls has been proposed to be procured before end of support of existing Firewall i.e. before 24.01.2024. In view of development of new mahasldc website, the servers needs to be upgraded with latest H/W configurations in FY 2023-2024. 2 No's of Cisco routers needs to be procured before end of life of existing Cisco routers.

- **Renovation and modernization of existing SCADA at SLDC and ALDC:**

  SLDC control center: 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

  c. 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, 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.

  POSOCO (Power system Operation Corporation Limited) has requested MSLDC to be a part of Unified Load Despatch Center Scheme (ULDC scheme). Under this arrangement POSOCO shall act as consultant for new SCADA for Western region LDCs 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.

- **DLR application in WAMS System**

  The Development of software tools for DLR application in WAMS System by reputed government engineering institutions in Maharashtra to provide Decision support systems using Artificial Intelligence/Machine learning/Data Analytics for control room operator at SLDC, Airoli is under process. The Dynamic Line Rating (DLR) system to ascertain real time loading capacity of critical lines. A brief description of the DLR using Synchrophasor technology and AI tools is given below:

  a) The PMU data-based DLR as transmission line temperature monitoring tool with an intended application towards facilitating dynamic line rating. The tool is required to estimate and track the temperature of a 3-phase transmission line segment. The novelty of this temperature monitoring tool is that no additional temperature measurement sensors are required to be placed along the line. The tool is based on an algorithm which gives accurate resistance estimates in presence of bias errors in the measurement sensors. The performance of the tool is demonstrated utilizing data from PMUs installed at both the ends of line. The temperature estimates given by the monitoring tool can predict the dynamic thermal state of the line for forecasted power-flow scenarios.

  b) To improve the accuracy of estimates, Machine learning tools is used. This application is selected to utilize some critical transmission lines up to thermal limits as the thermal limits are based on conductor temperatures which depends upon ambient temperatures, wind speed and solar irradiance settings for transmission line overloads can be varied seasonally based on DLR data. DLR using AI/ML is having advantage of higher accuracy.

  c) DLR offers many applications and benefits to the existing powers system. One such characteristic is to reduce congestion in the power system and utilisation of total transmission capacity / available transfer capacity of the power system as it improves efficiency by optimal utilisation of the lines. DLR can contribute to improved MMR region TTC/ATC by effectively utilizing existing capacity of lines. The MMR TTC/ATC of approximately 1750 MW/1800 MW along with DLR of the lines selected viz. 400 kV Airoli-Talegaon ckt, 400 kV Padge - Airoli ckt I, 400 kV Padge - Airoli ckt II and 400 kV Kharghar-Talegaon can be effectively utilized dynamically to manage the Mumbai region internal power generation as currently static parameters are in consideration.

- **Alert Messaging:** One of the recommendations of the Committee constituted by the Govt. of

Maharashtra for analyzing the Mumbai Grid Disturbance occurred on 12.10.2020 was related to alert messaging depending on the situation. Based on the same, pilot project for three months was initiated by MSLDC. After analyzing the results, a scope of work of the scheme has been proposed to expand the scope of said system for the whole State for generating alerts in case of:

- Tripping or any 765kV, 400kV Transmission elements viz. Lines, ICTs.
- Demand Curtailment in the event of heavy Overdrawal, Load-Generation imbalance of any Discom, etc.
- RE Curtailment in the extreme emergency conditions,
- Mumbai Transmission Constraints.

- **Scheduling Software:** The Hon’ble Commission has notified MERC (Deviation Settlement Mechanism and Related Matters) Regulation 2019 on 01.03.2019. For the implementation of DSM Regulation in the State of Maharashtra, SLDC has developed web-based scheduling Software which is commercially commenced from 11.10.2021.

  Generators with installed capacity exceeding 25 MW and (Distribution Companies) Discoms have been brought under deviation regime in the state of Maharashtra. As per the applicability Generators enter their day ahead availability and Discoms enter their forecasted drawal through web access of DSM- scheduling software. As per the constraints/condition both sellers & buyers have access to revise their schedules in the software.

  The schedule to State entities is published for 1-to-96-time blocks by considering Merit Order Despatch (MoD) Principle as below:

  a) The day ahead Load-Generation balance is achieved through this scheduling software by decentralized MoD operation (Discom-wise) by considering all resources and drawl of respective State Discoms.

  b) In intra-day, Load-Generation balance is achieved automatically by auto-operation of decentralized MoD for each 15-minute time block.

  The time block-wise deviation is computed for all State Entities, based on the actual meter readings made available by State Transmission Utility (STU) at State Energy Accounting Centre at MSLDC by way of Automated Meter Reading (AMR) facilities and the implemented schedule of the state entities in DSM software.

- **Web-based Outage Management System:** Web-based Outage Management System for processing of various planned outages on Transmission elements has been developed and implemented w.e.f 01st August 2018. Thereafter, MSLDC has developed Emergency outage system in Web-based Outage Management System and same is implemented w.e.f. 08th March 2021. Standard operating procedure for Outage planning and separate procedure for planned outage management for Mumbai and MMR Region is developed and published on MSLDC Website.

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 Reconciliation (FCR) Pool Volume and FCR Pool Value for the period from FY 2011-12 to FY 2017-18 and issue the final bills for settlement of fixed charge reconciliation pool amongst State Pool Participants."*

MSLDC's Reply

Subsequent to submission made under Case no 191 of 2019, MSLDC has taken following initiatives.

- **Timely issuance of FBSM bills:** Weekly FBSM bills up to fourth week of December-18 issued (Total 88 bills issued). Outsourcing personnel recruited by MSLDC for speeding up the FBSM billing work which resulted in issuance of nearly 6-8 bills per month instead of only 2-3 bills earlier. Replica of application server prepared which enabled more operation to be performed by engineer. New Database server installed with high end features.
- **Implementation of F&S and DSM for Solar & Wind Generation Regulations-2018:** The Hon'ble MERC has notified MERC (Forecasting, Scheduling and DSM for Solar and Wind Generation) Regulations 2018 on 20.07.2018. The Regulations is commercially implemented in the state form 06.01.2020. Total 10 numbers of Qualifying Co-ordinating Agencies (QCA) are registered and total Pooling Sub-Station (PSS) are 128. At present 4644 MW for wind and

2522 MW for Solar are scheduled. MSLDC issues the weekly REDSM bills on Monthly basis. MSLDC has issued REDSM bills up to the month of August-2022.

- **Establishment of Cyber Security Operation Centre (CSOC) at MSLDC Airoli**

Cyber security is one of the most prominent challenges faced by the power sector nowadays. Establishment of Cyber Security Operation Center (CSOC) is in progress at SLDC Maharashtra. 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, analyses, 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. by Corporate Office is in progress.

For monitoring of Logs in CSOC, this office has procured the Video Wall Display Unit (2x2) with Controller and management software. Further this office has initiated the process for infrastructure development of CSOC Room.

- **Technology and Operational System Upgradation**

Active Directory Implementation: Active Directory Management Solution has been implemented by this office, in order to have centralized user administration & implementation of Centralized Policy in respect of Cyber Security. This office has implemented the centralized password management policy with the help of Active Directory. Active Directory is also useful for Centralized Access Control implementation. Remote Access, USB and other controls has been restricted using the concept of a domain with the help of Active Directory.

Automated Backup System Implementation: Implementation of Automated Backup System is under process by the MSLDC. Considering the critical applications hosted at MSLDC Data Centre, it is necessary to have the automated backup system in place for the critical applications and data. This system will be responsible for automated backup based on the predefined backup schedule such as daily, weekly & monthly. Backup Strategy for incremental backup, full backup and BMR (Bare Metal Recovery) will be designed. Additionally, backup will also be taken on Tape Library automatically. Tapes can be placed at ALDC Ambazari or any other Location at periodic interval. In case of any disaster occurs to the Backup Appliance, Data can be recovered through Tapes.

- Telecommunication Systems: Complete real-time data of the State and Regional Grid is of prime importance for enabling the Power System Operator to take real-time decisions for monitoring and issuing instructions to field Engineers for controlling the Maharashtra State Power System. Presently Maharashtra State has managed to capture 37% (including 100%

400kV and 765kV S/s visibility, 71% visibility of 220kV S/s, 14.3% visibility of 132kV, 110kV and 100kV S/s) of the complete real-time data of the Maharashtra State Power Grid. Redundancy of Communication Links has been ensued at DC Level for ensuring least downtime of real-time SCADA data. Fiber Optic and VSAT Communication medium are presently utilized for capturing the real-time data of Maharashtra State Power System. ACI&P Office (C.O.) is planning for 100% real-time of SCADA data for all MSETCL Substations.

- Cyber Security: Cyber security is one of the most prominent challenges faced by SCADA System Engineers. Modern SCADA Systems are demilitarized into Internal and External Demilitarized Zones for overcoming Cyber intrusion and safeguarding the core SCADA Systems. The various measures taken for ensuring Cyber Security include:
    - Conducting third-party VA-PT audit periodically and as per requirement.
    - Installing Cyber Security SIEM tools for monitoring Cyber intrusion in Cyber SOC.
    - Complying with the directives issued by CSK (Cyber Swachchata Kendra).
    - Imparting Cyber Awareness to OT personnel through various Certification Programs.
    - User authentication.
    - User authorization.
    - Restricting remote access.
    - IT-OT air-gapping.
    - Restricting the number of active ports (open).
    - Periodically resetting crucial System passwords.
    - Maintaining records for every change made in the system.
    - Restricting unauthorized access to telemetry/SCADA Server Rooms, etc.

NPTI has organized various Certification and training Programs for imparting Cyber Security Awareness to the SCADA Engineers working in SLDCs and Field Engineers working in environments where OT controls are commissioned. ACI&P Office (C.O.) is planning for 100% real-time of SCADA data for all MSETCL Substations.

- Islanding Scheme displays: As per instructions from HLC and latest CERC directives, it is mandatory to create SCADA displays for enabling Power System Operators to monitor the vital parameters for maintaining healthiness of the various islands in the State. Maharashtra SLDC has prepared the islanding displays for Uran Islanding Scheme and Mumbai Islanding Scheme. Nagpur Islanding Scheme is still in planning stage and awaiting completion.
- Integration of URTDSM data in SCADA System: The data of URTDSM System is to be made

available in SCADA System thus enabling the Power System Operator to take a glance of real-time PMU data for real-time monitoring of Maharashtra State Power System.

- **Implementation of Reactive Energy Accounting Framework:** The Hon'ble MERC has issued notification dated 09.03.2022 in the matter 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. Vide this notification the Commission has directed for implementation of mechanism for Accounting and Settlement of Reactive Energy Charges shall be introduced in phased manner and in the first phase of this mechanism, only Hydro Generators are covered when operated under condenser mode operation under instructions from MSLDC. The implementation of instruction based Reactive Energy Accounting for Intra-State Hydro Electric Generating Stations commenced from 14.03.2022 as per notification dated 09.03.2022. As on 11.10.2022, MSLDC has issued 29 weeks Reactive Energy bills (total amount paid is Rs 730.28 Lakhs) to MSPGCL as per the time line specified in the notification.

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 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

10.5. Submission of DPRs for new schemes and in-principle approved to lapsed schemes

Directives

The Commission directed MSLDC to approach the Commission for revised in-principle approval for the lapsed scheme along with justification for delay for such schemes. Further, in respect of new schemes for which DPRs were not submitted, MSLDC was directed to submit the same within three months.

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.

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11. Prayers

MSLDC respectfully prays the Hon'ble Commission to:

1. Admit the Mid-term review Petition in accordance with Regulations 5.1 of the MERC MYT Regulations, 2019.
2. Allow truing-up for FY 2019-20 to FY 2021-22 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, 2015 and MERC (Multi Year Tariff) Regulations, 2019.
3. While truing-up of FY 2020-21 and FY 2021-22, the normative O&M expenses may be considered based on final true-up approved expense for FY 2019-20 **before sharing of loss and gain due to efficiency parameters.** The Petitioner humbly requests the Commission not to project the normative O&M expenses for future years (FY 2020-21 & FY 2021-22) based on performance achieved in base year FY 2019-20 (i.e. after sharing of gain / loss) as it may not be appropriate to judge the performance of future years based on the performance achieved in past year (i.e. after sharing of gain / loss). The Commission may review and revise the methodology of re-computing the normative O&M expenses while truing-up for FY 2020-21 and FY 2021-22 by availing powers vested in 'Regulations 105: Power to Relax' under MYT Regulations 2019.
4. Allow and approve GFA and capitalization as per audited account of the Petitioner including earlier period capitalization as per detailed explanation submitted by the Petitioner.
5. Allow Provisional true up for FY 2022-23 of MSLDC according to applicable provisions under MERC (Multi Year Tariff) Regulations, 2019.
6. Approve O&M expenses as projected by the Petitioner for FY 2022-23 to FY 2024-25 considering average O&M expenses of FY 2020-21 and FY 2021-22 (before sharing of gain and loss), since true impact of wage revision is not captured in FY 2019-20 which is the base year as per the MYT Regulations 2019. The Petitioner humbly requests the Hon'ble Commission for the said relaxation under 'Regulations 105: Power to Relax'.
7. Approve MSLDC Charges for FY 2023-24 to FY 2024-25 as per MERC MYT Regulations 2019 that would help in recovery of consolidated ARR for respective years of the remaining period of 4th Control Period.
8. Allow MSLDC to use the LDCD fund, as created by the Hon'ble Commission in MSLDC MYT Order in Case No. 291 of 2019, for the purpose of financing the capitalization during FY 2019-20 to FY 2024-25.

9. 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 MYT Order in Case No. 291 of 2019.
10. Approve the SLDC's request for relaxation of certain parameters as sought in the Petition, while approving this Petition.
11. Allow the Petitioner for further submission, addition and alteration to this petition as may be necessary from time to time.
12. Grant an opportunity in person before Hon'ble Commission during the hearing on the above matter.
13. 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.

Chief Engineer (I/c) MSLDC

Place: Airoli, Navi Mumbai

Date:07/12/2022

List of Annexure:

Annexure 1	MSLDC Tariff Petition Formats for submission
Annexure 2	MSLDC Audited accounts & allocation statement for FY 2019-20 to FY 2021-22 based on Audited TB sheet and based on Audited accounts & allocation statement.
Annexure 3	Broad break-up of R&M Expenditure for FY 2019-20 to FY 2021-22.
Annexure 4	Details of entries under Fees and subscriptions (under A&G) for FY 2019-20 to FY 2021-22.
Annexure 5	Statement of capitalization, related Work completion reports, and MERC Approvals, if applicable, for asset capitalized in FY 2019-20 to FY 2021-22
Annexure 6	The letter submitted before the State Government regarding creation of a separate company for MSLDC
Annexure 7	Letter to MERC for additional work at ALDC for Auto FSS and MS (CELDK/Maint/FM-28/No 01282 dated 21.07.2022)
Annexure 8	Approval of Board regarding revised cost of new SLDC building (Board Resolution of 18 November 2014)