

BEFORE THE MAHARASHTRA REGULATORY COMMISSION

Filing No: _____
Case No. 322 of 2019

Date: 4th February 2020

IN THE MATTER OF

Petition filed by Maharashtra State Electricity Distribution Company Ltd. (MSEDCL) for Final True Up For FY 2017-18 & FY 2018-19, Provisional True Up For FY 2019-20 and Multi Year Tariff For FY 2020-21 to FY 2024-25

Maharashtra State Electricity Distribution Company Ltd.

Petitioner

Prayas (Energy Group), Pune

Participant in public process/ Applicant

SUBMISSION FROM PRAYAS (ENERGY GROUP)

Summary

Our submission focuses on the following critical issues which are discussed in MSEDCL's petition.

1	Background and context for current MYT process	2
2	Need to manage past dues and revenue gaps to reduce tariff impact.....	4
3	Applicability and methodology for levy of sales migration charges	6
4	Issues related to tariff design.....	12
5	Cost and Performance Accountability of MSEDCL.....	16

Key highlights of the submission are:

- Out of the proposed revenue increase of Rs. 60,359 crore, Rs. 17,195 crore is required to adjust costs for increase in sales in the control period, which is a readjustment of costs rather than an increase in costs resulting in no contribution to actual tariff increase. Further, Rs. 11,169 crores is required to meet actual increase in costs in the Control Period. The increase in costs can be easily met through efficiency improvements, reduction in distribution losses over the control period, reduction in proposed costs in the control period with adequate prudence checks and increase in revenue from existing tariffs after accounting for revenue from fuel adjustments charges in the Control Period. Therefore, no additional increase in revenue is required to meet these costs. Bulk of the proposed revenue increase (Rs. 31,996 crores) is required to meet pending dues, pending revenue gaps and increase in power procurement costs due to dispensation in change in law cases along with applicable carrying costs for the Control Period. The cost increase due to pending dues needs to be met with increase in tariffs.
- Thus, as against MSEDCL proposal for 20% increase in tariff (Rs. 1.30/kWh on an average) from retail tariffs during the Control Period, MSEDCL requires only a one-time 5% tariff increase (around Rs. 0.35/kWh on average) for FY21. This one-time increase should be sufficient to cover past dues and pending revenue gaps and there should not be any additional tariff increase for the control period.
- 'Behind the meter' renewable energy generators should be treated like any other captive generator. Such consumers can pay applicable standby charges proposed by MSEDCL in lieu of additional fixed charges

- Grid support charges should reflect cost of grid services provided by MSEDCL which would be around Rs.0.9-1.25/kWh for all units of generation and an additional Rs 1.75/kWh on banked energy for the Control Period.
- MERC should ensure ToD tariffs reflect changes in load due to proliferation of renewable energy. Further, MERC should also introduce seasonal ToD tariffs and direct MSEDCL to introduce ToD metering for non-agricultural consumers with connected load > 10 kW in phased manner during the MYT period.
- Rebate for incremental consumption is a welcome step and should be extended to partial open access and captive consumers
- Additional surcharge and cross-subsidy surcharge to be rationalised and fixed for the Control Period to ensure certainty in tariffs
- It is essential to provide increased attention to quality of supply and service issues. Therefore, MSEDCL should be directed to publish detailed periodic reports regarding quality of supply and service. Further, the Commission should conduct an independent public review of crucial supply and service quality parameters of MSEDCL.
- Imperative for MERC and MSEDCL to publish a comprehensive data protection policy to protect consumer interest especially with increase in SMS services and smart metering.
- Clarity is required on the appointment of new franchisees in Malegaon, Shil, Mumbra and Kalwa and need for reporting of pending dues from terminated franchisees.
- Need for clarity on impact of power availability due to coal shortages, debt restructuring for IPPs, estimation of PGCIL cost projections
- MSEDCL is currently projecting a shortfall in meeting revised RPO targets. Given the potential savings from increase RE procurement, compliance to MERC regulations must be ensured.

1 Background and context for current MYT process

MSEDCL has filed a petition for determination of aggregate revenue requirement (ARR) and tariffs for the 4th MYT control period (FY21 to FY25). In the same filing, MSEDCL has also proposed the performance and cost true-up for FY18 and FY19 and a provisional true-up for FY20.

The trends in major cost heads for the true-up and MYT years are summarised in Table 1.

Table 1: Cost projections by MSEDCL

Control Period Year	3 rd Control Period (True-up)			4 th Control Period (Projections)				
	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Power purchase	45,865	53,452	52,795	57,558	60,219	63,403	66,662	69,350
Transmission expenses	7,370	7,584	8,378	13,970	10,029	10,768	11,600	12,468
Capital expenditure	5,231	5,627	5,811	5,900	6,236	6,381	6,251	6,101
Operation and Maintenance costs	6,991	6,912	7,108	6,979	7,246	7,524	7,812	8,112
Other expenses	738	3,368	5,758	2,251	2,370	2,487	2,602	2,718
Aggregate Revenue requirement	66,194	76,942	79,850	86,658	86,100	90,563	94,927	98,748

Table 1 shows that MSEDCL has projected a 3% per annum increase in its costs for the 4th control period. Power procurement expenses form about 70% of the costs followed by transmission costs accounting for 13% of the costs. Capital expenses and operation and maintenance expenses is responsible for 7% and 8% of the total regulated costs respectively. Section 5 of this submission lists comments and suggestions by Prayas (Energy Group) related to MSEDCL's performance.

In addition to these costs, MSEDCL has also sought the recovery of past dues and revenue gaps amounting to Rs. 24,170 crores. The break-up of these costs are summarised in Table 2.

Table 2: Break-up of past dues and revenue gaps

Past dues	Rs. Cr
Change in Law dispensation with carrying cost related to power procurement	4,192
Cost passthrough allowed by MERC in review of MTR order for the 3 rd Control Period	291
Impact of restatement of gross fixed assets (GFA)	1,540
Carrying cost for GFA+MTR impact	1,141
Regulatory asset created in Case 195 of 2017	12,382
True up requirement FY18, FY19 and FY20	3,446
Carrying Cost on revenue gaps till FY20	1,176
Total	24,170

Even with robust revenue recovery in the recent past, MSEDCL has been facing severe financial distress. As per its annual reports, the short-term borrowings of MSEDCL is already to the tune of Rs. 23,000 crores which is comparable to 30% of the aggregate revenue requirement (ARR) of FY19. This is also higher than limit of 25% of ARR prescribed for short-term loans in the Ujjwal DISCOM Assurance Yojana (UDAY). Besides revenue gaps, billing issues and low recovery and collection efficiency from agricultural consumers is also a critical issue affecting MSEDCL's financial performance.

Given its financial distress, in order to ensure revenue recovery to meet these growing costs as well as past dues, MSEDCL has proposed an annual increase in the mean ABR (i.e average tariff) of 4% per annum in the control period. This is shown in Table 3.

Table 3: Tariff increase proposed by MSEDCL

Particulars	ABR at existing tariff (Rs./kWh)	4 th Control Period				
		FY21	FY22	FY23	FY24	FY25
Average billing rate (ABR)/average tariff for the control period (Rs./kWh)	6.72	7.24	7.48	7.70	7.90	8.10
Average tariff increase proposed by MSEDCL (%)		7.07%	3.25%	2.93%	2.61%	2.54%

With such proposed tariff increase, only about 19% of non-agricultural sales would be paying tariffs less than the average cost of supply (ACoS). In addition to the increase in tariff, MSEDCL has also proposed several changes in the existing tariff design especially for HT consumers. Suggestions with respect to these proposals are discussed in Section 4 of this submission.

Keeping aside the sharp increase in tariffs in the first year, the proposed tariff increase, as shown in Table 3 is comparable to inflation rates. Even so, such an increase will make MSEDCL tariffs even more non-competitive as compared to alternate options of supply. This would be unsustainable in the medium-term. As per MSEDCL projections, by FY25, 96% of non-agricultural sales will be paying energy charges higher than Rs. 5/kWh. Given that renewable energy and market-based power procurement is possible at lower rates; many consumers can potentially save by reducing their dependency on MSEDCL. Given the flux in the sector, it is crucial to ensure tariff certainty in the medium term. In this context, our proposal to ensure recovery of past liabilities and future costs are detailed in Section 2 of the submission.

Given the migration of sales to open access, captive, grid-connected solar and net metering options, MSEDCL faces significant loss of revenue. MSEDCL needs to be compensated for certain costs it incurred due to these

migrating consumers and also needs to ensure revenue recovery for services that it provides to these consumers. Therefore as per the MERC Distribution Open Access Regulations, 2019 cross subsidy surcharge and additional surcharge can be levied on open access consumers along with applicable wheeling charges and charges for standby services. Captive consumers are to pay wheeling charges and applicable charges for standby services.

As per the MERC Grid Interactive Rooftop Renewable Energy Generating Systems regulations, 2019, consumers with connected load > 10 kW availing net metering services should pay Grid Support Charges (GSC) and grid connected 'behind the meter' rooftop renewable consumers are to pay Additional Fixed Charges (AFC).

MSEDCL has proposed the methodology and calculation for these charges. Some of the charges proposed are prohibitive and the methodology used for estimation is not in compliance with MERC regulations or established practice before the Commission. Further, the applicability of charges such as cross subsidy surcharge and additional surcharge proposed are also not in compliance with MERC regulations and orders. The methodology and the applicability of these charges are discussed in Section 3 of this submission.

2 Need to manage past dues and revenue gaps to reduce tariff impact

The additional revenue through the proposed tariff increase sought by MSEDCL is required in order to:

- recover pending dues and past revenue gaps with carrying cost
- meet increase in costs due to increase in sales
- meet rising prudent costs to be incurred in the control period

The break-up of additional revenue from increased tariffs, for the above requirements is listed in Table 4. Table 4 also lists the percentage increase in revenue from tariff during the control period.

Table 4: Break-up of requirement for increase in tariffs

4th Control Period	Rs. Crore	% of revenue from existing tariff
Additional revenue from proposed tariffs (Difference between revenue from existing and proposed tariffs)	60,359	15%
<i>Revenue to meet pending dues and past revenue gaps with carrying cost</i>	31,996	8%
<i>Revenue to adjust costs due to sales increase</i>	17,195	4%
<i>Revenue due to increase in costs</i>	11,169	3%

Overall, MSEDCL is proposing a 15% increase in existing revenue from retail tariffs for the 4th Control Period. 8% of this tariff increase would be required to meet past dues, 4% due to adjustment in revenue due to sales increase and only 3% due to increase in costs in the control period.

Subject to Commission's prudence check, the revenue required to meet pending dues forms the largest share of tariff increase required. Without this requirement, the tariff increase required for the control period is limited to 3% over 5 years as the rest of the additional revenue sought is to adjust revenue recovery to current levels due to increase in sales.

2.1 Need for a joint strategy to reduce cost and tariff impact

Given the increasing non-competitiveness of MSEDCL tariffs and the impact on small consumers of increase in already high tariffs, MSEDCL, the State Government and the Commission need to jointly work towards a

strategy to manage pending dues and prevent further creation of regulatory assets. Such a strategy should avoid further build-up of carrying cost, reduce tariff impact on small consumers and ensure tariff certainty for the MYT Control Period. Such a strategy could involve timely settlement of pending dues via issue of bonds and concessional loans, followed by a one-time tariff increase to ensure recovery of revenue to finances past dues. The additional cost increase projected by MSEDCL can be met by efficiency measures. Our suggestions in this regard are detailed below:

2.1.1 Issue of bonds or concessional loans for recovery of pending dues and regulatory assets

MSEDCL can issue bonds backed by the State Government to ensure recovery of pending dues and the regulatory asset. Consumers of MSEDCL can ensure repayment over the control period with an increase in tariff for the amount taken over.

As shown in Table 2, the total dues amount to Rs. 24,170 crores. With a coupon rate of 7% for a 5 year period, MSEDCL would need to ensure an annual payment of Rs. 5895 crores. This would require a one-time 7.5% increase in tariff in FY21 with no additional increase in tariff in the subsequent years.

It appears that the revenue from existing tariff has not been adjusted to account for revenue recovered from fuel surcharges in the last six months of FY20. These revenues could be significant. For example, MSEDCL's commercial circular for the levy of fuel surcharge on consumers for January 2020 indicates that many categories are paying Rs. 0.50/kWh to Rs.1/kWh as fuel surcharges¹. Such revenue should be considered while estimating the average billing rate from existing tariffs. Adjustment of this revenue with the existing tariff has been a crucial practice of the Commission to ensure separate accounting and transparency in the treatment of fuel surcharges.

The fuel surcharge revenue which has not been considered in MSEDCLs projections would imply an additional Rs. 1800 crores of revenue from existing tariff for FY 20-21. Considering this, the tariff increase required for FY21 to meet past dues would be 5% with no further increase required. This is summarised in Table 5.

Table 5: Treatment of past dues and regulatory asset

Particulars	
Past dues and regulatory asset (Rs. Crore)	24,170
Repayment of bonds (7% coupon rate for 5 years) (Rs. Crore)	5,895
Savings due to avoided carrying cost (Rs. Crore)	2,915
Per unit increase in tariff needed for bond repayment (Rs/kWh)	0.51
% increase in tariff required for FY21	7.5%
% estimated increase in tariff (after adjustment of FAC) for FY21	5%
Additional increase in tariff over the years (%)	0%

Alternatively, if the State Government can provide MSEDCL loans at concessional rates for the five year period, a similar arrangement for revenue recovery would be possible such that there is no additional tariff increase in subsequent years while ensuring savings on carrying cost.

2.1.2 Levy of pending dues and regulatory asset surcharge for recovery from consumers

Depending on the mode of financing and the increase in sales in the future years, an increment of Rs.0.40/kWh to 0.50/kWh would be required each year to meet past dues and regulatory assets. The additional requirement should be reported separately in the tariff schedule and billed as a surcharge. This

¹ <https://www.mahadiscom.in/consumer/wp-content/uploads/2020/01/FAC-CIRCULAR-OCT-19.pdf>

can be called the ‘Pending dues and Regulatory Asset’ surcharge which should be levied uniformly in each billing cycle on all consumers on a per unit basis, similar to fuel surcharge. Reporting such a surcharge separately in the bills and tariff schedule transparently communicates the reasons and the time-period for the increase in tariff.

2.1.3 No requirement for further tariff increase beyond recovery of past dues

As shown in Table 4, Rs. 17,195 crores of the proposed revenue recovery is not due to increase in costs but merely to account for adjustment of revenue due to increase in sales. The remaining Rs. 11,169 crores can be reduced or saved by MSEDCL by efficiency measures such as reduction in distribution losses, potential savings due to reduction in proposed MSETCL transmission costs, efficiency in power procurement, reduction in average power procurement cost with RPO compliance, savings in operation and maintenance expenses etc. On an average this works out to Rs. 0.16/kWh for the projected sales in the control period and such savings are eminently possible by MSEDCL. Table 6 shows the impact on tariffs due to MSEDCL proposal along with the proposal in this submission.

Table 6: Tariff increase proposed in this submission

Particulars	4 th Control Period				
	FY21	FY22	FY23	FY24	FY25
MSEDCL proposed ABR for the control period (Rs./kWh)	7.24	7.48	7.7	7.9	8.1
Average tariff increase proposed by MSEDCL (%)	7.07%	3.25%	2.93%	2.61%	2.54%
PEG proposed ABR for the control period (Rs./kWh)	7.23	7.23	7.23	7.23	7.23
Average tariff increase suggested by PEG (%)	5%	0%	0%	0%	0%

As detailed in Section 2.2 of this submission, accounting for revenue from existing tariffs after adjustment of fuel surcharge revenue, revises the ABR to about Rs. 6.88/kWh. **Thus, the one-time tariff increase required to only meet past losses required in FY21 is about Rs. 0.35/unit.** This amounts to only 25% of the tariff increase proposed by MSEDCL for the Control Period.

3 Applicability and methodology for levy of sales migration charges

3.1 Need for clarity and disambiguation on applicable charges

As per MERC regulations and MSEDCL’s proposal there are multiple charges which could potentially be applicable on migrating sales of consumers based on the alternate supply option. Lack of clarity on the applicability would lead to avoidable regulatory processes and litigation. To reduce ambiguity it is suggested that the tariff schedule in the MERC order include a table with applicable charges as suggested in Table 7.

Table 7: Format for applicable charges for migrating consumers

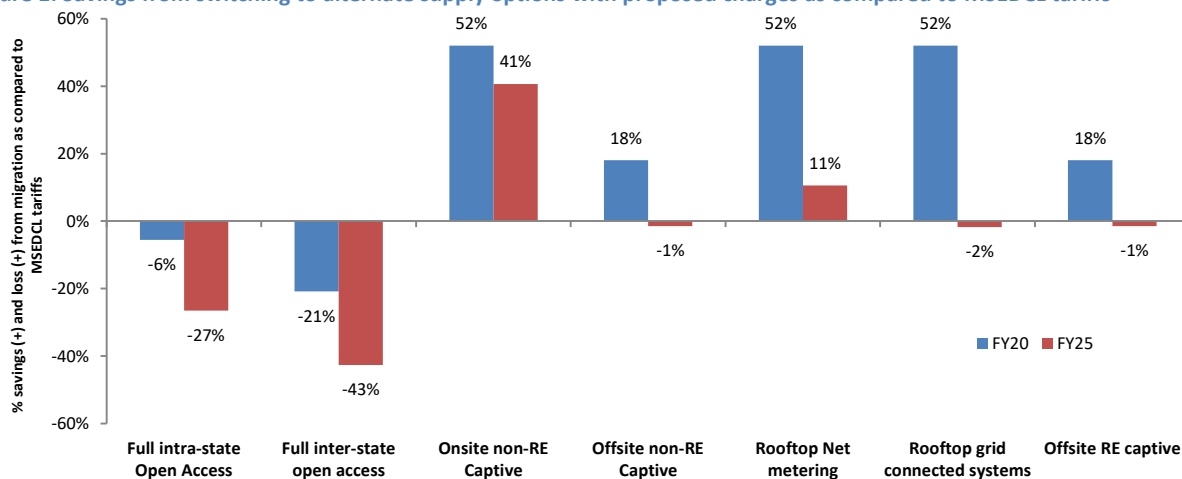
Type of migration	Applicable charges
Full intra-state Open Access	
Full inter-state open access	
Partial intra-state Open Access	
Partial inter-state open access	
Onsite non-RE Captive	
Offsite non-RE Captive	
Offsite RE captive	
Rooftop Net metering	

In addition, the tariff schedule should also include a schedule for each of these charges on a category-wise, voltage-wise basis which consumers can refer to.

3.2 Significant inverse incentives present in current charges

As per MSEDCL’s proposal for charges and their applicability, the savings from switching to alternate supply options considerably reduces. In fact, with the levy of proposed charges, renewable energy based captive options become increasingly unviable. However, consumers stand to make savings of about 41% as compared to MSEDCL tariffs if the switch is made to coal-based captive. Similarly, net metering consumers whose dependence on grid services is higher continue to make savings on a per unit basis. However, given the charges levied, rooftop grid connected systems with ‘behind the meter’ generators which have lesser dependence on DISCOM services would find it more lucrative to switch to DISCOM supply despite the significant investments they have incurred. Figure 1 shows the potential savings as compared to MSEDCL tariffs from switching to an alternate option of supply for the year FY20 (based on approved charges) and FY25 (based on proposed charges by MSEDCL).

Figure 1: Savings from switching to alternate supply options with proposed charges as compared to MSEDCL tariffs



Note: The charges and tariffs represented here are for a HT Industrial Consumer connected at 33 kV level with 60% load factor. The savings or benefits as compared to MSEDCL tariffs are represented on the positive axis and losses on the negative.

The levy of proposed charges results in counter-productive incentives promoting coal based generation and dis-incentivising consumers who have invested in renewable energy technologies and reduced their long-term dependence on the DISCOMs. While determining charges, the Commission should also ensure that such incentives are not present to ensure balanced and forward looking development of the sector.

3.3 Treatment of standby charges for captive consumers

MSEDCL’s proposal for levy of additional demand charges and treatment of standby charges for embedded captive consumers are detailed in Page 255 of MSEDCL’s petition.

MSEDCL’s proposed standby charges which requires monthly payment for contracted standby demand even when such services are not utilised and proposed standby charges for planned and unplanned shutdowns is reproduced in Table 8.

Table 8: MSEDCL's proposal for revision in standby charges

Scenario	Energy Charges	Demand Charges on standby contracted capacity	Penal Additional Demand Charges
When standby demand is not utilized	Not applicable	25% of applicable demand charges on standby contracted capacity	Not applicable
Standby services in case of planned shut-down	Energy charge as approved in Tariff Order for relevant category	As approved in tariff Order for relevant category on total contracted standby capacity (on monthly basis).	2 times Demand Charges (on monthly basis) in force
Standby services in case of unplanned shut-down	Applicable Energy charge for temporary category	25% of applicable demand charges on standby contracted capacity	2 times Demand Charges (on monthly basis) in force

The proposed charges are reflective of the standby services provided by the DISCOM for embedded captive systems synchronised with the grid. Without such charges, the supply quality and tariffs of DISCOM's regulated consumers will be affected. MSEDCL's proposed approach of charging for captive consumers is forward looking in this sense.

It is therefore suggested that the Commission adopt MSEDCL's proposal for revision of standby charges for captive consumers. In addition, we suggest that such charges are levied on all captive consumers including renewable energy onsite captive consumers. In fact, such standby charges can be levied instead of the additional fixed charges proposed by MSEDCL for grid connected 'behind the meter' systems in compliance with MERC regulations. Our proposal in the matter is detailed in the section below:

3.3.1 Treatment of 'behind the meter' systems as captive systems

As per Regulation 7.9 of the MERC Grid Interactive Rooftop Renewable Energy (RE) Generating Systems Regulations, 2019, grid connected renewable energy generating systems connected behind the consumers meter and not opting for net metering or net billing need to register with the DISCOM. Any additional fixed charge or demand charge or any other charge will be applicable on these consumers.

As per Section 2 (8) of the Electricity Act, 2003, a captive generating plant is defined as a

'power plant set up by any person to generate electricity primarily for his own use and includes a power plant set up by any co-operative society or association of persons for generating electricity primarily for use of members of such co-operative society'.

The systems referred to by the Commission in Regulation 7.9 qualify as captive under the Electricity Act, 2003. Therefore the applicable charges on these systems and requirement of compliance of these systems to Electricity Rules,2005 related to captive generating plants and MSEDCL Commercial Circular No. 170 (dated 13/06/2012) and MSEDCL Commercial Circular No.303 (dated 26.04.2018) need to be clarified by the Commission.

3.3.2 Levy of standby charges on 'behind the meter' systems in lieu of additional fixed charges

Grid connected renewable energy generating systems connected behind the consumer meter on whom additional fixed charge are to be levied as per MERC regulations are the same as renewable energy-based on-site captive consumers. Therefore, the additional fixed charge to be levied on these consumers can be similar to standby charges proposed by MSEDCL reproduced in Table 8 of this submission.

Levying such charges would ensure that RE based onsite captive systems are treated the same as all other captive generators and users. Further consumers with 'behind the meter' RE based generating systems who

maintain their contracted demand with the distribution licensee, are paying for grid services rendered by the DISCOM by way of fixed charges for contracted demand, even though their actual drawal from MSEDCL will reduce to the extent of 'behind the meter' generation.

In fact, for a consumer with 60% load factor and a renewable energy system equal to contracted demand at 19% CUF, MSEDCL's revenue increases by Rs. 0.46 to Rs.0.68 per kWh assuming MSEDCL's proposed fixed charges are levied in the control period. At the same time, consumers also make considerable savings due to savings in variable costs due to the renewable energy generating system.

Such a measure would ensure that MSEDCL is compensated for grid services provided and encourage consumers to ensure adoption of measures to ensure better load management to restrict demand to their contracted demand. Such a proposal will also be in compliance with Regulation 7.9 of the MERC Grid Interactive Rooftop Renewable Energy (RE) Generating Systems Regulations, 2019.

3.4 Penal additional fixed charge to be levied on 'behind the meter' RE systems

The second proviso of Regulation 7.9 of the MERC Grid Interactive Rooftop Renewable Energy Generating Systems Regulations, 2019 states that:

'Provided also that in case the Consumer installs Renewable Energy Generating Systems behind the Consumer's meter without prior intimation to the respective Distribution Licensee, then the total additional liabilities in terms of additional Fixed Charges or Demand Charges and any other Charges for such systems, shall be levied at twice the determined rate for such period of default.'

The penal charge for a system without intimating the distribution licensee could be twice the demand charge for the consumer category for the total contracted demand.

3.5 Estimation of Grid support charge

The Grid Interactive Rooftop Renewable Energy Generating Systems Regulations, 2019 noted that a new 'Grid Support Charge' (GSC) was to be levied on net-metered consumers above 10 kW. The relevant regulation 11.5 is reproduced below:

'The Commission may determine in the retail Tariff Order such Grid Support Charges to be levied on the generated energy under Net Metering systems which shall cover balancing, banking and wheeling cost after adjusting RPO benefits, avoided distribution losses and any other benefits accruing to the Distribution Licensee. These Grid Support Charges would be determined consumer tariff category wise, based on the proposal of the Distribution Licensee in its retail supply Tariff Petition, supported by adequate justification: Provided that the consumers of all Categories having Sanctioned Load up to 10 kW shall be exempted from payment of Grid Support Charges for Net Metering systems.'

Further, the statement of reasons accompanying these regulations (pp. 23) noted that these charges are pricing signals to partly recover the cost of the network but importantly also mentioned that these charges **'would not significantly affect their savings/payback period'**. The relevant sections are reproduced below:

'These Grid Support Charges are pricing signals and will help to partly recover the cost of network, banking facility, standby arrangement, and distribution grid balancing provided by the Distribution Licensee and mitigation of risks associated with operating of Net Metering Arrangement after adjusting RPO benefits, avoided distribution losses and any other benefits accruing to the Distribution Licensee.'

It is also noted that the Distribution Licensee is revenue neutral. Any under-recovery of approved revenue will be recovered in future years through revision in retail supply tariff. The revenue loss on account of implementation of Net Metering arrangement will be socialized through ARR gap and will be levied on other consumers. Levy of such Grid Support Charges will not add benefit to Licensee; however, it will reduce the future burden on other consumers on account of implementation of Net Metering Arrangement.'

However, for consumers opting for Net Metering Arrangement, levy of Grid Support Charges would not significantly affect their savings/payback period.’

MSEDCL has suggested GSC in their tariff petition which varies from roughly Rs 4/kWh for Industry, Rs 8/kWh for commercial and Rs 7-8/kWh for high-use residential consumers. The methodology followed by MSEDCL has no relation to the one noted by the Commission in the Grid Interactive Rooftop Renewable Energy Generating Systems Regulations, 2019. Further the proposed charge is so high as to completely make rooftop system unviable and goes against the spirit mentioned by the Commission in the statement of reasons, which is that these charges ‘would not significantly affect their savings/payback period’. In line with the principles laid down by the Commission the methodology for the proposed GSC is detailed in Table 9.

Table 9: Details of proposed grid support charge estimation

Attribute	Basis/Principle	Possible Value	Notes / Explanation
Balancing	Actual DSM charges for large scale RE as per the F&S regulations	Rs 0.05-0.1/kWh of generation	F&S regulations for wind and solar have penal provisions for DSM which come into effect from January, 2020. This would allow MERC access to actual RE DSM charges. Anecdotal evidence suggests that this could be in the range of Rs 0.05-0.1/kWh of RE generation from experience in some states/regions.
Banking	ToD slabs and tariffs	Rs 1.75/kWh of banked energy	As per Prayas proposed ToD differential between daytime and evening slab (MSEDCL has proposed Rs 1.5/kWh) which is detailed in Table 11 of this submission. This would be only applicable on banked energy and not on all generation. Another option (as proposed by MSEDCL in case 85 of 2017) is to value banking and unbanking at the lowest variable cost of backed down power and highest variable cost of dispatched power respectively. Our estimate for 2016-17 was Rs 0.69/kWh of banked energy. However, this may be cumbersome to calculate for each resource, given changes in MoD etc.
Wheeling	As per proposed wheeling charge	0.77/kWh of generation for HT (Excl. EHV) and 1.15/kWh of generation for LT Level	This is essentially a fixed cost being recovered as part of variable energy charge and hence MSEDCL should be rightly compensated for the same.
RPO benefit	Price of REC or Price of new wind / solar in comparison to new coal	Zero or some nominal value ~ Rs 0.25/kWh	While MSEDCL has been buying RECs to make its RPO shortfall, the projected procurement from RE shows that it will by and large meet its RPO requirement. Further the price of new wind and solar is lower than the cost of conventional power, thus rendering the real value of REC to be zero as long as MSEDCL meets its RPO through procurement of new renewable power.
Avoided distribution losses		Zero	In net metering and behind the meter systems, due to self-consumption, energy handled by the system itself reduces. Hence there is no reduction in % distribution loss. Also there is no revenue to DISCOM due to self-consumption. Hence there is no avoided distribution loss cost for DISCOM. There will be reduction in distribution loss in case of surplus banked energy supplied to DISCOM at the end of the year. This is expected to be very low.

Apart from banking, which can vary significantly by the type of consumer, the other charges can be calculated for each type of consumer. Our analysis for residential consumers in Pune suggests that they typically bank 65% of their energy on an annual basis. This will certainly vary by locations across Maharashtra. Further, industrial and commercial consumers may end up hardly banking any energy given the low contribution of rooftop solar to their overall demand.

Considering these calculations, the overall GSC charge should be Rs. 0.9-1.25/kWh to be charged on all units of solar generation and an additional charge of Rs 1.75/kWh for each unit of banked energy. This will provide incentive for appropriate system sizing and adoption of efficiency and load management measures to reduce banking requirement.

3.6 Levy of cross-subsidy surcharge

MSEDCL has used the formula prescribed in the National Tariff Policy, 2016 to arrive at the applicable cross-subsidy surcharge (CSS). However, MSEDCL has not levied the ceiling of 20% of the applicable tariff which is also prescribed in the tariff policy. Without the ceiling that CSS for most categories is prohibitive.

MERC in Case No. 195 of 2017 has dismissed MSEDCL's proposal of approving CSS based on the National Tariff Policy formula without the suggested ceiling. Similarly, the MERC Distribution Open Access regulations, 2019 also do not specify any alternate methodology for estimation of CSS. In keeping with the Commissions earlier decisions the MSEDCL's proposal regarding determination of CSS should be rejected.

While the current CSS does not fully compensate MSEDCL for loss of revenue, it is important to ensure that the CSS is fair and rational for the open access eligible consumers as well. Further, in order to promote medium to long-term migration and disincentivise opportunistic switching there should be a reasonable certainty regarding the CSS charge for the control period.

In order to provide certainty of CSS to consumers and to ensure incentives to increase efficiency for the DISCOM, it is proposed that the

- CSS should be fixed in nominal terms at Rs. 3/unit for FY21 and the same should be constant for the entire MYT duration.
- Alternatively, a progressively reducing trajectory for CSS can be defined for the 3 to 5 years

3.7 Additional surcharge

While estimating additional surcharge, MSEDCL in pp. 301 to 303 of the petition has detailed the methodology for estimation of additional surcharge. Essentially, the weighted average fixed cost per unit of availability for all the thermal generating sources is estimated as the additional fixed charge for the year. Ideally, additional surcharge is determined on the basis of the average fixed cost of the capacity backed down due to open access instead of the average fixed cost of MSEDCL as a whole. Further, MSEDCL assumes that open access consumption contributes to 15% of the total backed down generation for the Control Period based on half year information for FY20. It is suggested that the estimation also consider information from FY19, a year for which actuals are available and similar additional surcharge was levied. In addition, estimation of the average fixed cost of backed down capacity based on MSEDCL replies to Query 14 c shows that on an average, the fixed cost per unit of available generation for backed down capacity is about Rs. 1.01/kWh for FY19. With increase in sales, reduction in migration to open access with alternate available options and rebates and incentives offered by MSEDCL, increase in renewable energy procurement it is likely that backing down, especially due to open access could reduce in the future. Based on MSEDCL data, it is

suggested that additional surcharge be fixed at Rs. 1/unit for FY21 with the 3% reduction in charge per year over the control period.

3.8 Levy of CSS and additional surcharge on rooftop grid connected systems and captive consumers

MSEDCL has proposed the applicability of cross subsidy surcharge on rooftop grid connected systems. Given that such systems are renewable energy based onsite captive systems, levy of CSS is unfair and against the mandate of the Electricity Act, 2003. Consumers made investments in such systems to reduce their dependence on MSEDCL for power. Further unlike open access consumers, such consumers do not opportunistically switch between MSEDCL and alternate supply options. As such investments provide certainty to the DISCOM for planning investments and managing costs, levy of CSS on such consumers is untenable and should be rejected.

MSEDCL has proposed the levy of additional surcharge on captive consumers. In Case 195 of 2017 based on the Commissions' regulations and the mandate under the Electricity Act, 2003, MERC concluded that original captive consumers (as opposed to group captive consumers who frequently switch) would not be liable to pay any additional surcharge. The Appellate Tribunal for Electricity in its judgement in Appeal No. 311 of 2018 & IA Nos. 1531, 1468 & 1467 of 2018 dated 27th March 2019 ruled that no captive consumer should pay any additional surcharge. Hence, MSEDCL's proposal in this regard needs to be rejected.

3.9 Wheeling losses applicable on migrating consumers

The voltage-wise technical losses proposed by MSEDCL have more or less been the same since the Commission's order in Case No.19 of 2012. Despite repeated queries by the Commission in this tariff determination process regarding data submission for voltage-wise losses, MSEDCL did not submit information to enable review of voltage-wise losses. To ensure the wheeling losses considered and levied on consumers is reflective of actual technical losses, the Commission should direct MSEDCL to conduct a study to review voltage-wise technical losses. The results of the study can be considered while reviewing the voltage-wise losses at the time of the Mid-Term Review of the 4th Control Period. It is suggested that failing the submission of the study, any cost recovery due to wheeling losses should be disallowed.

4 Issues related to tariff design

4.1 Time of day tariff design and applicability

MSEDCL has recognised and emphasised the need to revise the ToD tariff in line with the increasing penetration of renewable energy which has resource specific diurnal and seasonal variations. Our suggestions in this context, point out changes required to address daily variations and seasonal variations due to renewable energy. We also suggest that ToD tariffs are applicable on a larger base of consumers over the Control Period. These proposals are detailed in the sections below:

4.1.1 Daily variation in ToD tariffs

While MSEDCL's proposal recognises diurnal and seasonal variations due to renewable energy it does not adequately capture the impact of load variation due to renewable energy. To account for such changes, it is suggested that:

- neither an incentive nor penalty is levied for day-time consumption from 0900 Hrs-1700 Hrs (solar hours)
- the dis-incentive for consumption in the evening peak should be higher than the night time incentive

Considering this, our suggested ToD proposals are detailed in Table 10.

Table 10: Change in ToD tariffs proposed to account for increase in RE penetration

Consumption Slab (kWh)	Existing ToD Charge (Rs./kWh)	ToD Charge (Rs./kWh) proposed by MSEDCL	Consumption Slab (kWh)	PEG Proposal
2200 Hrs-0600 Hrs	-1.5	-1.5	2200 Hrs-0600 Hrs	-1.5
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs	0	0	0600 Hrs-0900 Hrs	0.75
0900 Hrs-1200 Hrs	0.8	0.6	0900 Hrs-1700 Hrs	0
1800 Hrs-2200 Hrs	1.1	1.5	1700 Hrs-2200 Hrs	1.75

4.1.2 Implementation of seasonal variations in ToD charges

With increased procurement from solar and wind by MSEDCL and other users of the grid, there will be significant seasonal variations in load and power availability. The Commission has already acknowledged stress months as April, May, October and November since these were the months when un-banking of energy was not allowed for RE based Open Access as per the (now repealed) MERC Distribution Open Access Regulations, 2016.

Hence, for these stress months, it is suggested that an additional charge of 50 paise/kWh be levied for consumption in the ToD slots of 0600 Hrs-0900 Hrs and 1700 Hrs-2200 Hrs, essentially the two shoulder consumption slabs. Further, given the lower load in monsoon and higher availability of wind energy in the same period, an additional incentive of 0.25/kWh is suggested in the night time ToD slot of 2200 Hrs-0600 Hrs for the months of July and August. The proposed seasonal variation in ToD rates is detailed in Table 11.

Table 11: Seasonal variation in ToD tariffs

Consumption Slab (kWh)	January to March, June, September, December	April, May, October and November	July, August
2200 Hrs-0600 Hrs	-1.5	-1.5	-1.75
0600 Hrs-0900 Hrs	0.75	1.25	0.75
0900 Hrs-1700 Hrs	0	0	0
1700 Hrs-2200 Hrs	1.75	2.25	1.75

As further evidence of load shapes and RE generation builds up, the seasonal variations in ToD rates can be revised based on implementation experience and insights from advanced power system modelling tools which can simulate system operation.

It is vital that the seasonal charges to ToD tariffs are introduced as part of this MYT process as introducing changes in tariff design may not be appropriate during the Mid-Term Review. With significant increase in RE generation in the Control Period, such a tariff could facilitate better load-supply management, generate savings in power procurement cost for MSEDCL and fuel surcharge for its consumers. Further, such a tariff design provides appropriate pricing signals to consumers to incentivise better load management. Delay in introduction of seasonal tariffs would result in significant avoidable costs.

4.1.3 Applicability of ToD tariffs for consumers with connected load > 10 Kw

Considering the increasing trend of residential energy consumption and consumption from other small consumers in coming years, increasing share of RE generation and reducing cost of metering, there is a need to deepen ToD regime. Hence, we request the commission to direct MSEDCL to propose a plan for adoption

of ToD metering for all consumers (except agricultural consumers) with connected load above 10 kW. In the coming years this will be crucial to manage early morning and evening peaks and to provide proper tariff signals. Such a plan could be considered and approved by the commission during MTR process.

4.2 Increase in fixed charges for HT categories required with rising sales migration

MSEDCL has proposed a 10% increase in fixed charges for HT consumers for the 4th Control Period. Such a tariff increase would not prevent sales migration as more and more consumers would be incentivised to invest in captive options. Based on MSEDCL's proposed tariffs, the annual per MW fixed charge payment for an HT consumer in FY25 would be comparable to 19% of the per MW capital costs required for a solar captive system. However, with increase in sales migration, MSEDCL also needs to ensure recovery of costs, especially from consumers who have reduced their dependence on the DISCOMs using various options. Therefore, we support the increase in fixed charges sought by MSEDCL in the control period. However, such an increase should only be allowed if:

- grid support, charges, additional fixed charges, cross subsidy surcharge and other applicable charges are estimated on a rational basis
- cross-subsidy surcharge, additional surcharge are not levied on captive consumers
- renewable energy onsite captive consumers are treated the same as other captive consumers

4.3 Rebate for incremental consumption to be implemented

MSEDCL has proposed the levy of a Rs. 1/kWh rebate for incremental consumption for five years to consumers in HT Industries, HT Commercial, HT Public Services and HT Railways/Metro/Mono categories who source their entire power from MSEDCL. Therefore consumers who consume more than their total consumption from MSEDCL in FY18 (the reference year) would receive a rebate for the incremental consumption as compared to FY18.

This is a welcome proposal as it would enable better utilisation of contracted capacity. However, the rationale for restricting the rebate only to consumers who source their entire power from MSEDCL is not clear. This is because incremental consumption from consumers who also source power from captive and open access sources would also increase utilisation of MSEDCL's backed down capacity.

Therefore, MSEDCL should clarify the rationale for restricting the scheme to those who source all the power from the DISCOM and the Commission should consider extending MSEDCL's proposal to open access and captive consumers who have contracted demand with the DISCOM.

4.4 Rationalisation of fixed charges for residential consumers

MSEDCL has proposed an increase in the fixed charges for residential consumers with every slab of consumption. The proposed tariff is illustrated in Table 12.

Table 12: Proposed residential tariffs

Existing residential tariffs			Proposed residential tariffs				
			Year	FY21		FY25	
Consumption slabs (units)	Fixed charge (Rs./month)	Energy charge (Rs./kWh)	Consumption slabs (units)	Fixed charge (Rs./month)	Energy charge (Rs./kWh)	Fixed charge (Rs./month)	Energy charge (Rs./kWh)
1-100	90	3.05	1-100	105	3.5	123	4.10
101-300	90	6.95	101-300	116	7.5	136	8.10
301-500	90	9.9	301-500	116	9.9	136	9.90
501-1000	90	11.5	>500	132	11.5	178	11.70
>1000	90	12.5					

Currently small and large residential consumers are paying Rs. 90/connection/month as the fixed charges. Therefore, an increase in fixed charges especially for large domestic consumers is warranted to reflect rising costs of MSEDCL. However, MSEDCL's proposal would not ensure adequate recovery from consumers switching to net metering as with reduced consumption from the DISCOM, these consumers will shift to a lower slab.

With a slab-wise increase in fixed charges, many consumers, especially those whose consumption is at the margin of two slabs would be significantly affected with the current design. This is especially true for consumers using more than 500 units per month whose fixed charges increase by 25 to 45% in the control period. These consumers might be incentivised to indulge in practices such as meter tampering and meter splitting. Such instances will increase further as the fixed charges increase with every year.

In order to address these issues, it is proposed that the fixed charges for consumers using more than 300 units per month are revised based on the average consumption in the previous year. Further, it is also suggested that the Commission and MSEDCL track slab-wise consumption and evolve a strategy to prevent meter tampering, splitting. These suggestions are detailed below:

4.4.1 Increase in fixed charges based on past years consumption

It is suggested that residential fixed charges be rationalised but on the basis of a reference year's consumption (say, FY19). Thus, consumers who billed more than an average of 300 units per month in the reference year pay higher fixed charges which progressively increase with higher consumption slabs. This could be revised at the end of the control period. This would result in recovery of appropriate revenue from fixed charges for consumers who might opt for net metering. The fixed charges for consumers using less than 300 units increase marginally to reflect increase in costs.

4.4.2 Need to track slab-wise consumption and instances of meter tampering, splitting

The Commission should direct MSEDCL to report slab-wise actual data of consumption in the residential category. Such information could help track trends in slab-wise consumption changes after the change in fixed charges. Currently, such information is only provided for projections in the MYT petition. This information should be submitted to the Commission every six months to track trends. The Commission should also ensure the MSEDCL publishes such information for public access on its website. In addition, MSEDCL should also take adequate measures to reduce instances of meter tampering and meter splitting and should detail an action plan for the control period for the same to the Commission.

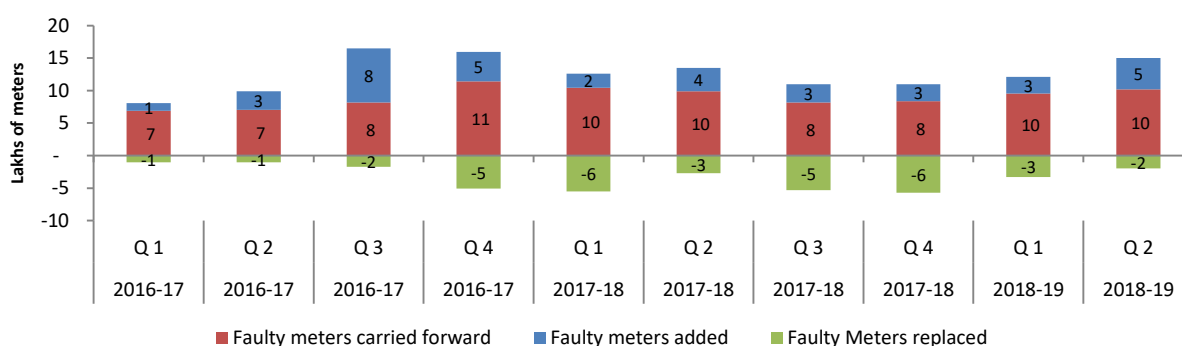
5 Cost and Performance Accountability of MSEDCL

5.1 Need for an independent review of crucial supply and service quality parameters

Given the increase in costs and tariffs proposed by the MSEDCL, it is imperative that the Commission also evaluates the quality of supply and services provided by MSEDCL in the recent years. Standards of Performance reports as per Section 59 (2) of the Electricity Act, 2003 have not been published on the Commissions website since September 2018. Further, there has been no independent evaluation of the supply and service quality performance parameters reported by the MSEDCL.

As per MSEDCL reports, the number of faulty meters reported each year has increased by 49% between June 2017 and June 2019. The instances of faulty meters vary over the years as does the pace of replacement of such faulty meters by MSEDCL. This is shown in Figure 2.

Figure 2: Increase in faulty meters over the years



Similarly the complaints regarding metering, billing, transformer failures continue to be high. Given these realities, it is crucial that:

- MERC commission a study to evaluate the supply and service quality of MSEDCL. The study should also include results from a state-wide survey covering several metering and billing related parameters.
- The Commission should also direct the DISCOM to submit information on DT failure rate, number of instances of average billing, zero billing and the number of functional and non-functional meters for each category of consumers for each circle.
- Based on the study and evaluation of MSEDCL data the Commission should conduct a public review to hold the DISCOM accountable for supply and service quality.
- Based on public comments and the results from the study, the Commission should issue appropriate directions to the DISCOM with clearly specified timelines for compliance and penalties for non-compliance.

5.2 Need for increased accountability of distribution franchisees

Over the years, MSEDCL had appointed input based franchisees in Bhiwandi, Aurangabad, Nagpur and Jalgaon. The distribution franchisee agreements for Aurangabad and Jalgaon were terminated on November 10, 2014 and August 10, 2015 respectively. Subsequently, the operations in these areas were taken over by MSEDCL. The agreements were terminated primarily due to non-payment of dues to MSEDCL. In September 2019, MSEDCL also took over the franchisee business of M/s SNDL in Nagpur due to its weak finances.

5.2.1 Need to report status of terminated franchisees and pending dues, if any

Given these developments, it is clear that most franchisee find operating the franchisee business and ensuring timely payment of dues a challenge. In this context, MERC should direct MSEDCL to report:

- The status of dues and receivables for the terminated franchisee agreements, especially with M/s SNDL in Nagpur. MSEDCL should also clearly mention cost and impact because of pending dues, if any.
- Status of the termination with SNDL. It is not clear if the termination is disputed by SNDL or if SNDL is challenging the termination. The additional impact due to these disputes should also be stated by MSEDCL.

5.2.2 Clarity on appointment and operation of franchisees in new areas

As per newspaper reports, and a press release² by Torrent Power Limited (TPL) dated 3rd January 2019, MSEDCL has issued a letter of intent to TPL for appointment of franchisee in Shil, Mumbra and Kalwa. The press release also mentions that an agreement will be executed in due course. Similarly newspaper reports also mention appointment of CESC Limited as a franchisee for Malegaon. If the appointment of these franchisees are in the final stages, it is unclear as to why the sales to consumers in these potential franchisee areas and the input energy to these consumes have not been projected by MSEDCL. Therefore, MSEDCL should report:

- The current status of distribution franchisees in Malegaon, Shil, Mumbra and Kalwa and any other franchisees planned during the control period.
- Status of the distribution franchisee agreement and details of any disputes, if any. It should also details of any litigation in the matter.
- If the franchisees are to be appointed in the control period, MSEDCL should also share sales, losses and energy input projections for the same.

5.2.3 Performance reports of franchisees

Despite limited success with franchisees, MSEDCL seems to be appointing franchisees in new areas. Given the past experience with pending dues and limited loss reduction it is suggested that MSEDCL report the following on its website:

- Category-wise number of consumers, energy input, energy billed, revenue billed and collection efficiency
- Loss reduction trajectory as per the franchisee agreement and its actual performance
- Annual capitalisation by the franchisee versus target
- Quarterly report on pending dues from franchisees
- Standards of Performance reporting as per MERC SoP Regulations and Section 59 (2) of the Electricity Act, 2003 for the franchisee area

Such information should be published and submitted to the Commission on an annual basis .This will ensure better tracking of franchisee operations and increased accountability for supply and service quality in the franchisee areas.

5.3 Consideration of offsite captive consumption while calculating the energy balance

MSEDCL and MERC include open access consumption while estimating losses and energy balance. This is a good practice to correctly account for voltage-wise losses and energy handled in the system. It is suggested

² https://www.torrentpower.com/pdf/investors/20190108_media_release.pdf

that in a similar fashion, MERC also includes the energy input for and consumed by off-site captive users such input and use would also impact losses.

5.4 IDC and cost benefit analysis reporting for capital investments

In the control period, MSEDCL has planned the capitalisation to the tune of Rs. 17,600 crores under various capital investment schemes. This is over and above the Rs. 15,183 crores of capitalisation which has place between FY18 and FY20. Despite repeated queries by the Commission in the current tariff proceedings to provide details on the capital investment crucial details on the following were not provided by MSEDCL.

As per the replies to data gaps annexed with MSEDCL's petition, it is clear that the Commission asked MSEDCL to submits scheme-wise information on cost overruns and time overruns and the interest during construction incurred due to time overruns. MSEDCL submissions indicate that cost overruns for ongoing projects are to the tune of Rs. 10,000 crores which is as high as 25% of the original cost. The reasons provided for scheme-wise cost-overruns often state delays in project execution.

However, MSEDCL has not submitted any details on time overruns as stated by the Commission. It is suggested that MSEDCL in compliance with MERC's queries, also share details of time overruns and the interest during construction incurred due to the same. Given the nature and the scale of these projects such information is crucial to assess the operational efficiency and systematic issues being faced by MSEDCL which delays critical works. The Commission should also consider disallowance of any IDC which could have been avoided by MSEDCL.

As part of the tariff proceedings MERC also raised a query regarding cost-benefit analysis for the various DPR schemes approved by the Commission. MSEDCL has not submitted this information and stated till will be submitted at a later date. It is suggested that the Commission direct MSEDCL to submit this information which should also be publicly available.

5.5 Capitalisation of DPDC for FY17

In the current petition, MSEDCL stated that Commission has provided post facto approval for capitalisation under the DPDC scheme vide Letter No. MERC/Capex/2019-20/1108. Accordingly, MSEDCL has requested MERC to consider the approval and allow the disallowed capitalisation in the scheme as per the MTR order. Regulation 23.6 of the MYT regulations 2015 clearly states that:

*'Provided that the Commission may allow capitalisation 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** (emphasis added), on a request made by the Generating Company or Licensee or MSLDC.'*

In the context of the applicable regulations, the Commission may allow the capitalisation after prudence check though a formal order.

5.6 Calculation of receivables by MSEDCL

The provision of bad and doubtful debts is projected as 1.5% of the estimated receivables in compliance with MERC regulations. However, the receivables are projected by assuming the following:

- 5% increase in principle and 10% increase in interest for agricultural receivables
- 2% increase in principle and 2% increase in interest for the non-agricultural receivables

Given the fact that the interest impact on all receivables is the same, the separate treatment of receivables from agricultural and non-agricultural consumers is not clear. If anything such a treatment would result in an undue inflation of receivables from agricultural consumers which could also have implications further than

the estimation of provision of bad and doubtful debts. Keeping in line with the practice in the previous control period, MERC can consider the receivables from the latest audited accounts for estimating the provision for bad and doubtful debts for the 4th Control Period.

5.7 Passthrough due to opex schemes to be further evaluated and closely monitored

Regulation 75.7 and 84.7 of the MYT Regulations 2019 state that:

A Distribution Licensee may undertake Opex schemes for system automation, new technology and IT implementation, etc., and, such expenses may be allowed over and above normative O&M Expenses, subject to prudence check by the Commission:

Provided that the Distribution Licensee shall submit detailed justification, cost benefit analysis of such schemes as against capex schemes, and savings in O&M expenses, if any.

Accordingly, MSEDCL has submitted the opex schemes listed in Table 13 for approval of the Commission.

In compliance with MERC regulations, MSEDCL has not adequately stated the potential benefits and cost savings possible with the operationalisation of these schemes. It is suggested that the Commission allow these costs once the potential benefits from these schemes are stated. Further, actual performance and savings versus potential benefits should also be tracked by the Commission over the control period. This would also help assess the efficacy of allowing opex expenses over and above norm based approval for operation and maintenance expenditure. Further, the benefits realised from opex schemes in terms of reduction of operation and maintenance expenses should also be passed onto consumers.

Table 13: Opex schemes proposed by MSEDCL for the Commissions scrutiny and approval

Initiative	Annual expenses (Rs. Crore)
Centralised Customer care centre since 16th March 2018	6.6
Go green initiative	2
SMS service	6
Readings of RF meters by installing DCUs for AMR for single phase & three phase consumers - being implemented in Jalgaon, Nanded and Latur	4.8
Sub-station monitoring system- pilot for 44, 33kV substations in Akola circle	70
Cloud computing	17
Annual technical support for software	12
MSEDCL vehicle tracking	1

5.8 Need for a comprehensive Data Protection Policy to protect consumer interest

Given the fact that the DISCOM is collecting significant personal data of consumers especially for the provision of SMS services and smart metering services, it is imperative that MSEDCL formulate a data protection policy for the approval of the Commission. The Commission can consider the policy and approve it keeping in mind consumer interest, data privacy and sector interest in mind. The data protection policy should cover:

- Levels of anonymisation of data to prevent identification of consumers
- Policy for seeking consent with respect to use of personal data
- Policy for sharing the purpose of use of data and disclosing information of the parties the data has been shared to consumers and the regulator
- Protocols for ensuring data security

Additionally, as expenses such as SMS services are being recovered through the ARR over and above O&M expenses, the DISCOM should not sell consumer information to make additional revenue in this cost plus regulated business. The Commission should thus ensure that third party sale of data by MSEDCL is tracked and restricted.

5.9 Assumption for reduced availability of power due to coal shortages

On page 299 of MSEDCL’s petition, the utility has reported that in FY17 and FY18, of the total surplus energy reported, 30% to 40% was from capacity facing coal shortages. Interestingly this reduces to 4% of the total surplus energy in FY20. The reasons for such a reduction has not been made clear by MSEDCL especially as such a reduction in coal shortages has not been highlighted by MSPGCL in its MYT petition for the 4th Control Period. MSEDCL is also to clarify if further coal shortages or reduction in coal shortages is anticipated between FY21 and FY25 as it would have significant implications for MSEDCL power procurement planning and requirement for short-term purchase. This is especially crucial as MSPGCL has projected significant coal shortages for the 4th Control Period through various assumptions that are unclear.

5.10 Debt restructuring for Rattan India’s Amravati Power Plant

MSEDCL has contracted significant capacity from Rattan India’s Amravati Power Plant. However for the control period, no power has been scheduled from this plant possibly due to its high variable cost. As per newspaper reports³, the financially stressed plant has managed to avoid the NCLT process and ensure debt and asset restructuring. This has resulted in lenders taking a substantial haircut and the plant seeing a change in its ownership structure. MSEDCL should clarify the current status of its agreement with the developer for this capacity and also clearly state the cost impact, if any due to such changes.

5.11 Need to change methodology for projection of PGCIL costs

MSEDCL has projected a 5% increase PGCIL costs stating that the costs have risen significantly in the past 4 to 5 years due to the introduction of the PoC mechanism. However as shown in Table 14, the actual average per unit cost of PGCIL services have more or less been the same.

Table 14: Per unit PGCIL charges

Particulars	FY16	FY17	FY18	FY20*
PGCIL charges (Rs. Crore)	2133	2387	2558	3510
Inter-state power purchase (MU)	34243	38815	43696	39986
Per unit average PGCIL charges (Rs./kWh)	0.62	0.61	0.59	0.88

For FY20, MSEDCL is projecting a 45% year on year increase in PGCIL per unit charges. A significant reduction in inter-state power procurement has also been estimated for the year. The rationale for this increase has not been specified.

It is suggested that the Commission estimate PGCIL charges based on historical per unit growth as the quantum of inter-state purchase would also decide the extent of PGCIL charges.

5.12 Compliance with Renewable Purchase Obligation

The MERC recently notified the new RPO targets until 2025, which increase from 16% in 2020-21 to 25% in 2024-25. From the data submitted by MSEDCL in their Form 2, it appears that MSEDCL plans to meet its solar

³ <https://www.financialexpress.com/industry/in-first-deal-outside-nclt-rattanindia-rescued-by-foreign-funds-lenders-take-38-haircut/1808051/>

RPO, but fall short of the non-solar RPO consistently in all five years of the MYT. The RPO regulations (7.3, reproduced below) allow fungibility of solar and non-solar RPO to an extent.

‘Obligated Entity can use surplus Solar energy up to 15% of total RPO target to meet short fall in non-Solar RPO target and vice-versa;’

However data provided in MSEDCL filings suggests that MSEDCL may not meet their total RPO in 2020-21 and 2024-25. This is detailed in Table 15. Hence, MSEDCL must be required to at least comply with RPO target and the same should be considered in the MYT tariff calculation.

Table 15: Shortfall in RPO compliance

Attribute	Units	Projected Power Purchase (Form 2 in MSEDCL petition)				
Year		2020-21	2021-22	2022-23	2023-24	2024-25
Solar	MU	6,988	9,855	14,699	18,430	21,141
Non-Solar	MU	13,284	14,309	15,452	15,452	15,452
Total RE	MU	20,272	24,164	30,151	33,882	36,593
Total Power Purchase	MU	1,36,888	1,41,651	1,46,645	1,51,950	1,57,573
Total Hydro Power Purchase	MU	5,344	5,344	5,344	5,356	5,344
Total non-hydro Power Purchase	MU	1,31,545	1,36,307	1,41,302	1,46,594	1,52,229
Solar RPO target, RPO regulations, 2019	%	4.5%	6.0%	8.0%	10.5%	13.5%
Non-Solar RPO target, RPO regulations, 2019	%	11.5%	11.5%	11.5%	11.5%	11.5%
Total RPO target, RPO regulations, 2019	%	16.0%	17.5%	19.5%	22.0%	25.0%
Solar RPO met	%	5.3%	7.2%	10.4%	12.6%	13.9%
Non-Solar RPO met	%	10.1%	10.5%	10.9%	10.5%	10.2%
Total RPO met	%	15.4%	17.7%	21.3%	23.1%	24.0%
Solar	Rs/kWh	4.00	3.58	3.56	3.55	3.54
Non-Solar	Rs/kWh	5.32	4.98	5.00	5.06	5.13
Total Renewable (solar+non-solar)	Rs/kWh	4.86	4.41	4.30	4.24	4.21
Total Power Purchase cost per unit	Rs/kWh	4.47	4.51	4.60	4.67	4.68

5.12.1 Prices of new solar and wind power

As per the information provided by MSEDCL (Annexure query 104), it is clear that new large scale wind and solar power has a fixed 25-year price below Rs 3/kWh. Specifically, July 2018 wind EPAs are at Rs 2.85-2.87/kWh, while Aug-Nov, 2018 wind EPAs are at Rs 2.52-2.59/kWh. Similarly, recent solar EPA's commissioned in 2019 are at Rs 2.72/kWh while those approved under solar feeder program are at Rs 3.1-3.15/kWh. The last 1000 MW who bidding took place in Dec, 2018 are priced at Rs 2.74-2.75/kWh.

Hence maximising the use of solar and wind power will have a significant benefit of lowering the power purchase cost, which is the single largest cost for MSEDCL. Further, the MERC in its RPO regulations has specifically provided an incentive to exceed RPO (see excerpt of regulation 7.2 and 12.2 below).

‘7.2 RPO target stipulated above are minimum target to be achieved. Obligated Entity shall endeavour to achieve RPO target notified by the Central Government from time to time for which it will be eligible for incentive as per Regulation 12.’

12.2 Distribution Licensee shall endeavour to achieve total RPO target notified by the Central Government and for doing so it will get incentive of Rs 0.25 per kWh for RE procured above the minimum percentage

specified in Regulation 7 up to the percentage notified by the Central Government as under or as may be notified from time to time'

Thus, it appears that not only is MSEDCL failing to meet the minimum RPO in certain years, but is forgoing a great opportunity to lower its APPC (and thus consumer tariffs) while earning an incentive to do a least cost power procurement plan.

In stark contrast, AEML has confirmed⁴ that they will be going ahead with the 700 MW hybrid renewable energy project for which MERC had allowed a maximum price of Rs 3.24/kWh. At 50% CUF, which is part of the tender condition, this one project would contribute to ~ 30% RPO by providing 3068 MU from 2021-22 while the minimum RPO for that year is only 17.5%. Most importantly, while exceeding its RPO requirement, its APPC drastically reduces from Rs 5.12/kWh (2020-21) to Rs 4.68/kWh (2021-22), a saving of Rs 0.45/kWh due to this project.

Thus MSEDCL should revise its renewable energy procurement plans and plan to maximise RE penetration, mainly to reduce power procurement costs.

Finally, the petition does not clearly document the assumed CUFs and prices of new solar and wind power. It appears that in stark contrast to the discovered prices of new wind and solar (<Rs3/kWh as noted above), the average price of solar and non-solar power is nearly constant or increasing as per the data submitted by MSEDCL and shown in the Table 15 above. Thus CUFs and costs of new wind and solar along with the yearly capacity addition should be clearly documented in the order.

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⁴ <https://mercomindia.com/adani-develop-wind-solar-hybrid-renegotiated-tariff/>