BEFORE THE RAJASTHAN ELECTRICITY REGULATORY COMMISSION

Date: 24th May 2022

IN THE MATTER OF ARR AND INVESTMENT PLAN for FY 2021-22 AND FY 2022-23 for AVVNL, JVVNL And JdVVNL

Submission by Prayas (Energy Group)

The three DISCOMs in Rajasthan have filed petitions under the multi-year tariff framework for the approval of Investment Plan, ARR and Tariff for FY23. Despite increase in costs, DISCOMs have not proposed any tariff hike for FY23. This is similar to the proposals in previous years.

Given the financial distress before the DISCOMs, the present tariff process could be seen as an opportunity to bring in changes to bring in certainty in charges and processes, revision of ToD tariffs and increased accountability for DISCOM performance and investments. Our submissions in this context are detailed below:

1 Loss takeover by state government

In the petition, the DISCOMs propose to reduce revenue gap by the amount of loss take-over committed by the State Government under the FRBM scheme. As per the DISCOMs, this works out to Rs. 6138 crores. However, the Finance Department letter with the undertaking regarding taking over losses of DISCOMs specifies that the takeover for FY23 would be 60% of the losses for FY22.

Thus, it is not clear what the exact commitment for takeover is for. If the basis is loss for FY22, it should be clarified whether the takeover is based on DISCOM audited accounts and will include disallowed costs. It should also be clarified if the takeover will be in the form of loans on a grant, as the treatment of revenue gap reduction and interest cost will depend on that.

Thus, it is suggested that the DISCOMs submit more details on the loss takeover scheme including timeline for takeover, basis for takeover, additional conditions to be fulfilled in lieu of takeover along with the financial recovery plan. Adjustment based on the scheme can then be finalised based on actuals after FY22 performance review/ true-up.

2 Estimation of Agricultural Demand: Need for rigorous data based verification and restatement of norms

In the Tariff order dated 6th February 2020, the Commission had issued a directive to carry out a detailed study of actual specific consumption of flat rate agricultural consumers of the three DISCOMs separately. As per Para 3.42 of the order, the Commission directed the DISCOMs to:

'Carry out a detailed study of actual specific consumption of flat rate agriculture consumers of three Discoms separately and submit the same to the Commission along with the next ARR and Tariff Petition. This study should be supported by Feeder meter reading and total meters installed at Agriculture Consumers.'

No such study has yet been submitted and there has been no assessment of the specific consumption norm used or verification of metered data reported for over a decade. This norm has remained unassessed over a decade and fails to take into account the changes in hours of supply and rainfall.





Source: Audited actuals and projections from DISCOM petitions over the years

Figure 1 traces variation in total agricultural sales (metered and unmetered) over time. The solid line represents the audited actuals submitted over the years and the dotted line projections in the present petition. Even with increase in metered consumption, there is significant variation in past sales as well as projections, which remains unexplained in the petition.

In the MYT order dated 24th November 2021, the Commission gave the following directive:

'Discoms are directed to ensure the proper metering of 11 KV feeders either departmentally or through outsourcing and monitoring of 11 KV feeders which will result into reduction in feeder losses.'

In compliance to this directive, the progress, summarized in Table 2 has been submitted by the respective DISCOMs as part of the present proceedings.

On average, 90% of the feeders in the state have been metered and a large number of feeders in JVVNL and JdVVNL areas which have significant agricultural consumption have feeders with communicable meters.

DISCOM	Total Feeders	Metered feeders	% of metered feeders	% of communicable meters
JVVNL	9466	9466	100%	90%
JDVVNL	11411	11234	98.44%	39%
AVVNL	9344	9344	100%	Not reported
Total	30221	30044	99%	

Table 1: Status of feeder metering

Source: Compiled from data reported by DISCOMs on Compliance to Directives in these proceedings.

Given the status of feeder metering, reassessment of agricultural consumption can be based on a detailed study of feeder input data based on data recorded on agricultural feeders with communicable meters. Similar methodology has been employed in Haryana, Punjab and Maharashtra for estimation of agricultural demand.

Such an estimation is critical as it is likely that even those consumers which are deemed metered may, in all likelihood not have functional meters or may be subjected to average billing for sustained periods. Directives towards meterisation of agricultural consumers have no meaning if metering does not ensure proper energy accounting. In Maharashtra, an extensive survey of 1.33 lakh agricultural consumers in the state, using mobile app based data collection, along with geo-tagging showed that despite significant progress reported on metering, the actual status of metering was poor in the state. The survey was conducted by a Commission appointed working group to assess agricultural consumers and where validation of readings were present for only 17% of the 'metered' agricultural consumers and where validation of readings were possible, more than 50% of the readings were incorrect. The analysis also showed that 30% to 40% of feeders were overloaded, possibly due to issues with high unregistered load or issues with consumer mapping. While such analysis highlighted the need for investment to understand and reduce technical losses at the feeder level, it also was able to establish that agricultural consumption (including for those deemed as metered) was high in Maharashtra.

It is critical that a detailed study be conducted in Rajasthan as well, similar to the study in Maharashtra. To enable this, a working group can be appointed by the Commission with representation from RERC staff, survey agencies and independent members. To enable activities of the working group, the DISCOMs should provide data, inputs to survey agencies and members and assist with any works to ensure the working group can complete its tasks. The terms of reference of the working group could be:

- a. To ascertain agricultural consumption norm (units/HP/annum and/or hours/HP/annum) for DISCOM areas based on approved sampling methodology
- b. To verify and validate metered AG consumption for select sample feeders based on sample survey.
- c. To devise methodology for verification and validation of AG consumption based on feeder AMR/AMI data.
- d. To evolve methodology and formulate procedure for measurement and estimation of agricultural sales for future tariff determination processes of the Rajasthan DISCOMs

The working group can submit its analysis in time for the true-up process of FY22. Such a process would aid correct assessment of losses and agricultural consumption in the state.

3 Implementation of KUSUM scheme

Given the benefits of shifting to day-time solar power for agricultural consumers and the reduction in cost of supply of the DISCOM with implementation of KUSUM, accelerated deployment of the scheme, especially feeder-level MW scale plants under Component A and C is critical. For this, progress as compared to the targets should be accelerated and the targets themselves should be more ambitious. Given the scale of agriculture in the state and the reduction in power procurement cost (especially in a time of coal shortages), rapid deployment is the need of the hour.

Table 2 captures the targets and progress reported by the DISCOMs under KUSUM A and C.

KUSUM component		Targets				
KUSUM component	Particulars	FY20	FY21	Total	Progress reported	
	PPA Executed					
	Capacity (MW)	700	500	1200	203	
Component A	Count (Nos)				184	
Component A	SPV Commissioned					
	Capacity (MW)				9.5	
	Count (Nos)				8	
		Targets			Progress reported	
	DISCOM	Count	Feeder	(Nos.)		
	Jaipur	4346	83	24		
Compone	Ajmer	5893	93	981		
	Jodhpur	525	18	21		
	Total	10764	194	1026		

Table 2: Targets and Progress under KUSUM for the three DISCOMs

Source: Compiled by Prayas (Energy Group) from DISCOM petitions in these proceedings

In order to accelerate solar feeder deployment, the Commission should:

- a. Direct DISCOMs to report progress of solar feeder deployment under Component A and C on a quarterly basis on their website. This should include number of connections, contracted demand, MW deployment covered as well as a number of PPAs signed and contracted capacity under the scheme. If targets are not met, the progress report should also mention reasons for delays in deployment.
- b. Specify a separate, dedicated KUSUM target as part of the solar RPO target so adequate, focussed attention is provided to using solar to provide day-time supply to farmers.
- c. In case there are issues with interest expressed by developers in various bidding rounds, the Commission can also approve change in RfS to allow for open tendering (i.e. continuous re-biding till targeted capacity is fulfilled). Such a process was adopted in Maharashtra based on Commission approval in Case No. <u>Case No 189 of 2020</u>, dated 29th October, 2020 and <u>Case No 214 of 2020</u>, dated 18th December, 2020.
- d. As connected load of pumpsets is quite high, especially in JdVVNL area, the 2 MW limit on plant sizing, as specified in Component A could be limiting. Pushing for feeder level solarisation under Component C would help set up plants with optimal sizing. The Commission can provide directions and clarifications in this regard and ease the requirements for remote monitoring. Unlike the stipulation in the pilot scheme under Component C in Case No.1989/2022 dated 7th March 2022 before RERC, remote monitoring as specified in the guidelines for feeder level installations under Component C is limited to the solar power plant's performance¹ and not extended to monitoring agricultural consumers connected to that feeder.

¹ As per Para 8 of the Guidelines for Implementation of Feeder Level Solarisation under Component-C of PM-KUSUM Scheme dated 4th December 2020, 'It will be mandatory for DISCOMs to monitor solar power generation and performance of the solar power plant through online system. The online data will be integrated with central monitoring portal which will extract data from the State portals for monitoring of the scheme. For more details, please see: <u>https://mnre.gov.in/img/documents/uploads/file_f-1607073371212.pdf</u>

4 Smart-meter roll out and framework for regulatory oversight

While the mode of implementation of the smart meter rollout has been specified in the petition, i.e via TOTEX mode; the process of implementation still remains unclear. We request the commission to direct the DISCOMs to make the implementation and roll-out plan. In fact, no passthrough of costs or approval of investments should take place without approval of the rollout plan by the Commission. A similar process was undertaken in Uttar Pradesh in order dated 15th November 2018².

In the roll-out plan, it must be ensured:

- a. High loss areas and particular consumer categories are being prioritized for installation
- b. Targets are specified for pre-payment as well as post-paid options of smart meters. Existing postpaid options might work better for consumers such as industrial consumers with advanced metering infrastructure and high collection efficiency.
- c. Targets are specified for AMI metering for DTs and feeders

Thrust and accelerated deployment of AMI meters on feeders and DTs will help central and state agencies hold DISCOMs accountable for commitment to reliable supply. It will also help provide a clearer picture of the extent of distribution losses and aid in better estimation of agricultural demand.

In addition to the roll-out plan, the Commission should ensure:

- a. Investment and DPR scrutiny under TOTEX model
- b. Cost benefit assessment of investment post implementation
- c. Framework on evaluation of costs and benefits and sharing of costs and benefits (if any) from smart metering investments and cost recovery model from consumers.
- d. Specification of smart meter specific standards of performance
- e. Stipulation of process for remote disconnection as well as reconnection
- f. Evaluation of existing smart meter pilots to identify implementation issues before large scale rollout

Clarity on evaluation of cost-benefits is especially critical as RDSS scheme stipulates that 85% of the nongrant investment can be recovered through savings from improved billing and collection. As the intent is for the scheme to be self-financing, evaluation of benefits and limiting cost-pass through to consumers based on benefits accrued by RERC is critical. The Commission should specify such a framework which should identify benefits (savings due to pre-specified, targeted % reduction in collection efficiency, % reduction in billing costs) due to smart meter installations for each year. If these targets are not met, the costs should be disallowed or shared between the DISCOM and the consumers based on a pre-fixed ratio (say, 60:40). If the targets are exceeded, the savings can be shared in the same ratio. This approach would be similar to the gain and loss sharing framework which is part of RERC tariff regulations.

5 Redesigning Time of Day Tariff

The Commission has introduced changes in the TOD tariff design for the large industrial consumers of the state in the last tariff order by introducing penalties for morning peak along with off-peak rebate. This is a significant step in the right direction as financially stressed DISCOMs should be compensated

² https://www.uperc.org/App File/SmartMeters-pdf1116201863224PM.pdf

adequately for power procurement costs and operations during peak/stress periods. Going forward, dynamic ToD tariffs would be essential in ensuring shifting of load to hours where low-cost RE is available to reduce system cost and to enable effective RE integration.

Another much needed and welcome move by the Commission in the MYT order were the following directives by RERC to all DISCOMs:

Study month wise and hourly, Peak hours and off-peak hours and the power rates in power exchange during such peak and off peak hours in Rajasthan and accordingly suggest the ToD tariff in the next tariff petition considering the road map given by the Commission.

The DISCOMs are directed to furnish the energy data of shifting of load due to ToD and its financial impact in the next year ARR and Tariff Petition so as to enable the Commission to take a view on the trajectory.

In compliance to these directives, the DISCOMs have reported that:

RUVNL is entrusted with the task of managing procurement of power on behalf of Discoms. RUVNL is in the process of conducting a detailed study regarding the same. Suitable proposals shall be made along with the next ARR and Tariff Petition.

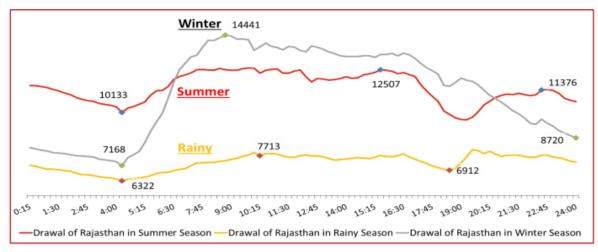
While this study is ongoing, without any assessment of system costs, RE generation profiles and load shapes; the DISCOMs have proposed reduction in the ToD rebate for off-peak periods in the current petition. The proposal is detailed in Table 2

Time Clet	Existing T	oD tariffs	Proposed ToD Tariffs		
Time Slot	Rebate	Surcharge	Rebate	Surcharge	
Off-peak : 12 am to 6 am	15%	Not Applicable	10%	Not Applicable	
Morning Peak : 6am to 10 am	Not Applicable	5%	Not Applicable	5%	
Evening Peak	No ToD tariff applicable		No ToD tariff applicable		

Table 3: Existing and Proposed ToD tariffs

The reduction in rebate and lack of surcharges during evening peak periods, is not supported even by the example load curves submitted in this petition. Figure 2, as submitted in JVVNLs petition for the state of Rajasthan shows that there is a sudden increase in demand during morning hours (4 am to 9 am), which is more prominent during the winter season. Similarly, there is a dip in demand during early evening hours, which is followed by a sudden spike in the following 1-2 hours. This clearly makes a case for levy of evening surcharges and change in ToD tariffs seasonally. The need for seasonal variation in ToD tariffs will be even more prominent with increased procurement of renewable energy, not just by DISCOMs but also by open access and captive consumers.





Source: JVVNL Tariff Petition for FY 2022-23

Levy of surcharges during stress periods which vary seasonally will also result in additional revenue much higher than the ToD rebates offered for off-peak consumption which would negate the requirement to reduce off-peak rebate. This is essential to consider as off-peak rebates are also necessary to reduced backing down of contracted thermal capacity. Going forward there might even be a case for rebates during solar hours based on capacity addition, generation profiles and load curves.

In this context, it is suggested that:

- a. The Commission levies ToD tariffs that includes rebates and penalties that vary seasonally.
- b. The ToD tariffs are fixed for a period of five years to provide certainty and revised based on assessment of system costs, demand-supply situation in Rajasthan.
- c. If RVUNL does not submit the study within three months of the issue of the order, the Commission appoint an independent agency to conduct the study and provide specific recommendations to the Commission.
- d. The Commission ensure that all consumers with connected load above 50 kW are subject to ToD tariffs by FY24. This can be announced in this tariff order with one year time frame to give consumers time to adapt to changing tariff design.

6 Tracking of Capital Investment Plans

The physical and financial progress of capital works as attached in Form 4 and the Capex Formats remains quite preliminary in nature. It is necessary that the Commission makes provisions to track any time or cost overruns and reports the same in the public domain. The Commission can also direct the DISCOM to report zone/circle-wise progress of major schemes and hold the DISCOM accountable for the progress of the same.

The Commission, in the MYT order has directed the DISCOM to conduct a thorough cost-benefit analysis before taking up any new investment.

'Before taking up any investment, Discoms must check the need of the same in the first instance and look into cost benefit analysis. This will ensure that investments are prioritized and are made where they are really needed.'

'The Commission directs the Discoms to carry out a special audit of Investment made by Discoms in all circles and to start with Jaipur city, Ajmer city & Jodhpur city circle to justify the investment made along with cost benefit analysis within 3 months and furnish the same to the Commission.'

However, compliance to the directives could have been better. The Commission should also issue fresh directives along with stipulated formats that capture detailed information especially with respect to cost-benefit assessments.

Directives were also issues towards periodic monitoring:

'Discoms should monitor and review all capex and rate contracts regularly and make necessary intervention to remove shortcomings /loopholes observed.'

For major capital investment schemes, the Commission could track the on-going status at least on an annual basis and give timely directives to the DISCOMs. Further, the on-going status should be updated on the DISCOM website every year.

7 Need for review of franchisee performance

With regards to the performance of franchisees, the Commission had issued the following directive in the MYT order -

'The Commission directs that a report on the performance of the franchisees by independent auditor for FY 19-20 & FY 20-21 be furnished to the Commission and should also be made part of next ARR & Tariff and true up filing'

The DISCOMs have replied that the quarterly reports are presently in a draft stage as the auditors are yet to finalise the ABR figures for FY20 and FY21. This delay is unclear, given that the DISCOMs have already submitted their own true-up figures till FY21.

Nevertheless, the independent auditor must release annual reports in the public domain for all the years since the inception of the agreement with the franchisees, so that accountability of franchisees and their performance can be tracked transparently going forward. This is especially the case as the Distribution Franchisee Agreement clearly stipulated detailed third party audit of franchisee performance to be submitted to the Commission. The audits and data submissions to the Commission should include:

- a. Category-wise number of consumers, energy input, energy billed, revenue billed, subsidy and collection efficiency in existing franchisee areas.
- b. Loss reduction trajectory as per the franchisee agreement and its actual performance
- c. Annual capitalisation by the franchisee versus target
- d. Quarterly report on pending dues from franchisees

This will enable evaluation of franchisee performance, regulatory scrutiny of distribution franchisee agreements and regulatory decision making for future franchisee appointment.

It is suggested that the Commission issue fresh directives in this regard to the DISCOMs.

8 Specification of principles for merit order dispatch

In the MYT order, Commission issued specific directives regarding compliance with merit order principles to which the DISCOMs replied as follows:

It is submitted that RUVNL makes power purchase on behalf of the Discoms. It is ensured by RUVNL that the principles of merit order dispatch are duly followed. Also, same is displayed on the Discom's website.

In order to ensure compliance, it is suggested the Commission amend the State Grid Code to stipulate specific principles and detailed procedure for merit order dispatch. This can be on similar lines as specified in the Maharashtra State Grid Code (attached as Annexure 1). For transparent reporting, in addition to the data currently provided by the DISCOMs on the website, the contribution of compensatory tariff, if applicable to the energy charges, should be reported separately.

9 Energy accounting and adoption of BEE energy audit formats for detailed scrutiny

The Commission has laid significant emphasis on proper energy accounting and loss reduction in the MYT order. As the DISCOMs have reported in their petitions, they are currently in the process of complying with the Bureau of Energy Efficiency (Manner and Intervals for Conduct of Energy Audit in Electricity Distribution Companies) Regulations notified on 6th October 2021. The regulations have detailed formats capturing status of feeder and consumer metering, circle-wise losses and feeder-level input data on a quarterly and annual basis³. ERCs could also for detailed information as part of the scrutiny of energy audits and loss estimation process for the DISCOM.

Annexure 1 : Principles of Merit Order Dispatch as stipulated in Maharashtra Electricity Grid Code

As per Regulation 33 in MERC State Grid Code Regulations 2020 - Principles of Merit Order Dispatch for operation of InSGS connected to InSTS

33.1 SLDC is responsible for coordinating the scheduling of buyers and sellers within its control area. SLDC shall also be responsible for preparation of Merit Order (MOD) stack for day ahead scheduling for each month considering the principles specified in these Regulations and least cost dispatch principles.

33.2 For preparation of MoD Stack to be operational for the monthly period, the seller whose tariff is determined by the Commission or seller whose tariff is adopted by the Commission shall consider following components while submitting the unit wise variable charge or energy charge for the next monthly period1 for which MoD is to be prepared:

a) variable charge/energy charge as per tariff Order / PPA including FSA billed during previous or latest month as may be applicable,

b) impact of the claim for approved change of law,

Provided that Seller shall submit the same to the buyer with whom it has PPA by 8th day of every month (*Nth month*) in the Format- 5S enclosed as Annexure -8.1 to these Regulations.

Provided further that, the seller shall consider the variable charge approved/adopted by the Commission and FSA billed during previous month [i.e. (N-1)th month] or latest month in case FSA for (N-1)th month is not available, and also consider the impact of claim towards change in law already approved by the Commission.

³ The excel proform is available here: <u>https://beeindia.gov.in/sites/default/files/Final%20Pro-forma%20for%20DISCOM%20Energy%20Accounting%202.2.2022_0.xlsx</u>

Provided further that, seller shall consider the impact of both components on the VC/EC separately and submit to the buyer along with following supporting details:

a) Approved variable charge as per the tariff order including fuel surcharge for previous (N-1) month or Applicable Energy Charge as per PPA for previous month (N-1) month;

b) Landed Cost of Fuel/Bills for (N-1) month;

c) Supplementary Bills for (N-1) month;

d) All computations and supporting documents considered for computation of variable charge for the Nth month.

e) Other supporting documents in line with existing FAC guidelines.

33.3 Buyer shall scrutinize the variable charge/energy charge submitted by seller. The buyer may request for additional supporting information if required. Upon detailed scrutiny, the buyer shall submit the following details to SLDC for the purpose of MoD stack along with its consent: a) variable charge/energy charge as per tariff Order/ PPA including FSA billed during previous or latest month as may be applicable, b) impact of claim for approximate charge of law.

b) impact of claim for approved change of law,

33.4 Buyer shall submit the scrutinised variable charge/energy charge to the SLDC for preparation of MoD stack by 13 th day of every month (Nth month) with intimation to seller with whom it has PPA in the Format- 5B enclosed as Annexure-8.1 to these regulations.

33.5 For central sector generating stations (CSGS), the variable charge for MOD purpose shall be landed variable charge at the state periphery for the immediately preceding month (N-1), including the injection losses, drawal losses of CTU and other such charges like electricity duty cess of exporting state.

33.6 For Intra-State Open Access transactions having single part tariff, total tariff shall be considered as variable charge for MOD purpose.

33.7 Variable charge for MOD purposes shall be provided up to three decimal places.

33.8 SLDC shall prepare the MoD Stack on the 15th day of every month (Nth month), which would be effective from the 16th day of the Nth month till the 15th day of the subsequent month [i.e. (N+1)th month] unless revised by SLDC. SLDC shall upload the monthly MoD Stack on its website by 15:00 hours on the 15th day of every month (Nth month) in the Format-5B and Format-6B enclosed as Annexure-8.1 and Annexure-8.2 respectively to these Regulations.

33.9 MoD Stack uploaded on the 15th of the month may be subsequently revised by SLDC in the following circumstances:

a) Commencement of supply of power by a generating unit under a new arrangement/bilateral agreement/Short term agreement in between period of MoD operation,

b) Revision of variable charges for preparing the MOD Stack due to Tariff Order issued by the Commission for state generating stations or by the Central Commission for central generating stations, c) Impact of change in law in the PPAs as approved by the Commission.

33.10 In case of claim for un-approved change of law, the Seller/Generating Company shall file Petition before the Commission with its claim for un-approved change of law for purpose of incorporation in the

merit order stack within reasonable time period not exceeding period of one month from the date of its first occurrence with intimation to the concerned Buyer/Distribution Licensee, failing which the Commission may take appropriate view, while approving the claim of Seller/Generating Company towards principal component of claim of change of law or its claim of carrying cost thereof or both.

33.11 Buyer/Distribution Licensee shall submit its say on such Petitions in timely manner but not later than 15 days from filing of the Petition to facilitate expeditious disposal of the same through due regulatory process.

Provided that upon approval (if approved) by the Commission, the Seller/Generating Company shall consider the same as part of component (b)[viz. impact of claim towards approved change of law], for the purpose of preparation of MoD stack subject to condition that the Seller/Buyer shall strive to incorporate the revision in the MoD stack preferably within seven days from the date of approval by the Commission or from next Monthly Period of MoD operation, whichever is earlier.

Provided further that, claims towards further variation in rate of already approved change in law on account of statutory taxes, duties, levies, cess shall be deemed to be approved by the Commission unless otherwise disputed by either of the party (viz. Seller/Buyer). Such deemed approved component shall be considered as part of component (b) [viz. impact of claim towards approved change of law] for the purpose of Merit Order stack preparation and payment to the Seller/Generator.

Provided also that, the Buyer/Distribution Licensee shall be vigilant and shall inform the SLDC in writing so as to ensure that such deemed approved claim is included for the purpose of Merit Order stack preparation and payment to Seller/Generator.

33.12 At the time of true-up of power purchase cost of buyers, the Commission shall consider the adherence to MoD principles followed by buyers to ensure overall efficacy of the power procurement by buyers. During truing up process, the buyer shall also submit the relevant documents to justify the deemed approval of change in law as specified in second proviso to Regulation 33.11 of MEGC,2020.

33.13 The process of merit order stack preparation specified in Regulation 33 shall also be applicable for preparation of MoD stack under FBSM framework subject to operational governing principles and commercial settlement mechanism under FBSM regime.

Provided that a transitory period of at least one month from the date of notification of these Regulations shall be provided to all the stakeholders for implementation of the principles of MoD stack preparation specified in these Regulations. The Commission shall separately notify the date of operationalisation of principles for merit order stack as specified under these Regulations.