



Rajasthan Electricity Regulatory Commission

# Submission on JVVNL True-Up Petition for ARR for FY 2019-20

May 2021



CENTRE FOR ENERGY, ENVIRONMENT & PEOPLE

- The National Tariff Policy 2016 in section 8.2.1 (2) advocates for State Electricity Regulatory Commissions (SERCs) to “undertake independent assessment of baseline data for various parameters for every distribution circle of the licensee” and “institute a system of independent scrutiny of financial and technical data submitted by the licensees.” We request the honourable commission to take note of this and immediately constitute a third party independent to scrutinise the data submitted by the distribution licensee before approving this true up petition 2019-20.

- The petitioner in the petition for Approval of Aggregate Revenue Requirement and Tariff FY 2019-20, submitted in Section 2.4.2<sup>1</sup>

"They recognise the importance of consumer awareness and capacity building in order to enhance the efficacy of regulatory process. The Discoms are taking several steps towards the same, which has already been submitted along with the compliance to directives along with the petition."

We request the petitioner to submit a detailed break-up of the list of activities undertaken and expenses incurred for the above-mentioned initiatives with regard to Consumer Awareness and Capacity building.

- The petitioner in the petition for Approval of Aggregate Revenue Requirement and Tariff FY 2019-20, submitted in Section 2.5.2<sup>2</sup>

"Discoms are organising the training to the employees and Discoms are organising the various safety programmes with involvement of NGOs and local bodies including Panchyati Raj for creating awareness among the general public towards safety. Further wide publicity through newspaper/audio & visual media general public are being made aware of the safety measures to be taken care of."

We request the petitioner to submit a detailed break-up of the list of activities undertaken and expenses incurred for the above-mentioned initiatives with regard to Consumer Safety.

We request the petitioner to provide the information of category-wise new connections requests received, released, and pendency as of 31<sup>st</sup> March 2020. We also request the petitioner to submit the category-wise permanent disconnections done during FY 2019-20.

## SECTION WISE COMMENTS

### Section 3.1 Energy Sales

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<sup>1</sup> Section 2.4.2, Page No 16, Approval of Aggregate Revenue Requirement and Tariff Petition of JVVNL, AVVNL and JdVVNL for FY 2019-20.

<sup>2</sup> Section 2.5.2, Page No 16, Approval of Aggregate Revenue Requirement and Tariff Petition of JVVNL, AVVNL and JdVVNL for FY 2019-20.

The petitioner in table 2 of the petition submitted the category-wise approved and actual sales for the year FY 19-20.

#### Our Comments

It is observed that, against the approved total revenue of Rs. 17901 Crores from sales of energy, the actual revenue witnessed a shortfall of Rs. 788.4 Crores (4.4%). Except for the Agriculture categories, all consumer categories witnessed an overall reduction from the approved revenue estimates. While the revenue from the large Industry category reduced by 26.6%, the revenue from Agriculture flat rate category sales increased by 26.56%.

Consumer Category	Revenue (Rs Crores)		
	Approved	Actual	Shortfall (%)
Domestic Service	3,958	3,654	-7.68%
Non-Domestic Service	2,562	2,194	-14.36%
Public Street Light	127	117	-7.87%
Agriculture Metered Supply	3,425	4,036	17.84%
Agriculture Flat Rate Supply	128	162	26.56%
Small Industrial Service	255	206	-19.22%
Medium Industrial Service	697	617	-11.48%
Large Industrial Service	6,064	4,449	-26.63%
PWW & S. Pumping –Small	220	290	31.82%
PWW & S. Pumping –Medium	23	22	-4.35%
PWW & S. Pumping –Large	284	201	-29.23%
Mixed Load Supply	158	125	-20.89%
Railway Traction	-	99	
DF (at Input level)	-	940	
<b>Total Revenue from Sale of electricity</b>	<b>17,901.00</b>	<b>17,112.26</b>	<b>-4.41%</b>

Similarly, all categories except agriculture and public water works (S) witnessed a shortfall from the approved estimates. The shortfall in the overall sales is 115 MUs (0.5%) against the approved sales of 25,044 MUs. The sales across high revenue generating categories of the Industrial and Non-Domestic Categories witnessed a shortfall of double digits percentage points.

Consumer Category	Sales (MU)		
	Approved 2019-20	Actual 2019-20	Shortfall in Approved (%)
Domestic Service	5,810	5,162	-11.15%
Non-Domestic Service	2,608	2,292	-12.12%
Public Street Light	179	142	-20.67%

Agriculture Metered Supply	6,903	7,779	12.69%
Agriculture Flat Rate Supply	267	293	9.74%
Small Industrial Service	331	278	<b>-16.01%</b>
Medium Industrial Service	830	774	<b>-6.75%</b>
Large Industrial Service	7202	5,790	<b>-19.61%</b>
PWW & S. Pumping –Small	333	406	21.92%
PWW & S. Pumping –Medium	30	29	<b>-3.33%</b>
PWW & S. Pumping –Large	357	256	<b>-28.29%</b>
Mixed Load Supply	195	171	<b>-12.31%</b>
Railway Traction	-	0	
DF (at Input level)	-	1,557	
<b>Total Revenue from Sale of electricity</b>	<b>25,044</b>	<b>24,928.99</b>	<b>-0.46%</b>

While the effect of the covid-19 pandemic is only limited to just 10 days in the FY 19-20, there is a significant shortfall in the revenue. With the effects of the pandemic, now being spread across more than 2-years and restrictions on opening of economy coming to effect across the country, this downturn in the sales of high billing rates consumers is expected to prevail.

In the regard, we request the Commission to constitute an independent expert committee with representation of civil society to evaluate the impact of the covid-19 on the finances of the petitioner. The committee shall also prepare a plan to mitigate the impact of the pandemic on Discom’s balance sheet and reduce the burden on the consumers.

### Section 3.1 Energy Sales to Distribution Franchisee (DF)

In the table 2 of the petition, the petitioner claimed an energy sales of 1557 MUs to the DF (at input level). As per the data from the true up formats file submitted by the petitioner, (File name: Format 4) in the sheet no: F7.1 – Distribution losses, cell no F24 and F25, the energy inputs for KEDL and BESL are submitted as 1,275.04 MUs and 281.69 MUs. In the same file, the petitioner submitted the data on energy sales by the DF as KEDL (Sheet No: 2.1(b) KEDL, Cell No: E23) is 1043.78 MUs<sup>3</sup> and BESL (Sheet No: 2.1(b) BESL, Cell No: E23) is 243.49 MUs<sup>4</sup>, a sum total of 1,287.27 MUs.

Thus, the difference between energy input and energy sold for KEDL is 18.13% and BESL is 13.5% respectively. The average difference for the DFs together is 17.31%.

### Our Comments

<sup>3</sup> Sheet ‘F2.1(b) KEDL’

<sup>4</sup> Sheet ‘F2.1(b) BESL’

We submit the petitioner shall clarify the discrepancies in data of energy sales to both of the Distribution Franchisees. If the difference is due to the losses in transmission of energy from the petitioner to the DF, we request the Commission to allow the losses only as per intra-state loss approved in the tariff order FY 19-20 and the difference should be borne by the DF and limit the additional burden on the consumers.

### Section 3.4 Conversion of Flat Rate Consumers

The petition in section 3.4 submitted that 1914 flat rate category consumers are converted to Metered category.

### Our Comments

The petitioner in the approval of ARR and tariff for FY 19-20, proposed to convert 4000 connections from flat rate to metered category. But only achieved 47% of the target. We request the petitioner to provide circle-wise details of the number of flat rate connections converted during FY19-20 and the number of flat rate consumers at the end of FY19-20. We also request the petition to submit the circle wise detailed reasons for failure in achieving the targeted number of conversions for the year.

We would bring the Commission's attention to the below data from tariff orders between FY14-15 and FY19-20.

*Figure: Data from the JVVNL Annual ARR and Tariff Petitions*

Year	Number of Consumers at beginning of year	Proposed Conversion in the Year	Number of Consumers at the end of Year
2014-15	32277	10000	22777
2015-16	36252	15000	21252
2016-17	36694	25000	11694
2017-18	11694	10000	1694
2018-19	20506	10000	10506
2019-20	19961	4000	15961

It is clearly evident that the petitioner has been proposing targets to convert flat rate consumers to metered consumers in every tariff petition but failing to achieve the target. The flat rate category consumers at the beginning of FY14-15 were 32,227. The petitioner reported the total number of flat rate consumers at the end of FY19-20 is 18,033. Despite highlighting the need to convert all flat rate consumers to metered category in the tariff petitions, the petitioner was only converting to 44% of the connections in the last 6-years.

We request the Commission to take serious cognisance of the issue and penalise the petitioner for failing to convert the flat rate consumers to metered category. We also request the petitioner to submit the data on conversion on flat category to metered category consumers in each of the distribution franchisee areas.

#### Section 4. Distribution Loss

In section 4.1, table 3 of the petition, the petitioner submitted a distribution loss of 17.21% in FY 2019-20. In the table of section 4.7, compared the losses of the petitioner with that of different states.

#### Our Comments

In the formats file of the petition (File name: Format 4):, sheet no: F7.1 – Distribution losses, data on distribution losses and AT&C losses are only computed for "JAIPUR DISCOM WITHOUT DF". We request the petitioner to submit the distribution loss and AT&C loss data of each of the DFs and also for the entire Jaipur Discom for the year FY19-20.

We would like to bring the Commission's attention to the Discom's performance metric Aggregate Technical and Commercial losses (AT&C).

As per the Tripartite MoU of UDAY section 1.3(c), the petitioner committed to reduce the AT&C losses from **32% in FY 2014-15 to 15% by FY 2018-19**. As per the 20th Annual report and accounts FY19-20 of the petitioner submitted as part of the petition, the AT&C loss<sup>5</sup> for **FY19-20 is 27.61%** and for **FY18-19 is 26.03%**. The petitioner is deliberately misrepresenting the poor performance of the Discom by passing off the reduction in distribution losses as improvement while the overall performance (AT&C) has deteriorated when compared to the previous year. The metric 'distribution loss' is conveniently used by the petitioner to compare with 'AT&C loss' reduction targets agreed under UDAY.

In the loss comparison table on page 11 of the petition, the petitioner quoted the AT&C losses for other states and compared them with its distribution loss. This deliberate misrepresentation of the facts by inter-play of words like loss, distribution loss and AT&C loss at different places is highly problematic and masks the actual scale of inefficiencies and losses of the petitioner.

We submit that the Commission shall take due cognisance of the seriousness of the issue and not allow the distribution losses beyond the approved 15% and limit the burden on the consumers.

The regulation 75 (5) of Rajasthan Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2019 also clears say

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<sup>5</sup> Section 35.19, Page No: 89

"The gains arising on account of distribution losses being lower or the losses arising on account of distribution loss being higher than the target fixed for any year by the Commission, shall be shared in the ratio of 50:50 between the Distribution Licensee and the consumers."

Based on the above said regulation, we request the Commission to reject the petitioner's claim in section 4.8 of the petition - to consider the actual distribution losses for FY 2019-20 while approving the true-up for FY 2019-20.

We further submit, going forward the Commission shall include AT&C loss as a metric for setting the loss trajectory targets for the petitioner. This helps in ensuring the review of overall performance of the petitioner and compare it with other distribution utilities in the country.

We also request the Commission to issue directions to the petitioner to undertake a load flow study to estimate the actual scale of technical losses in the network and submit the report within 3 months and ensure transparency in estimating the losses.

We would also like to highlight Avg. realisation per kWh (Excluding ED & Govt.levies) – Rs. data from the formats file of the petition (File name: Format 4): , sheet no: F2.1 - Cell No: Y81, F2.1 (a) – Cell No: X25, F2.1 (b) – Cell No: X25 presented in the below Figure. It clearly shows that DF is able to realise better per unit revenue for energy supply. We request the petitioner to submit a detailed report on how the DFs were able to realise 20% more average revenue than the petitioner. If the gains are due to reduced distribution loss, as per the regulation 75 (5) of RERC (Terms and Conditions for Determination of Tariff) Regulations, 2019, 50% of such gains shall be mandated to be shared with the consumer.

*Figure: Avg. realisation per KWh (Excluding ED & Govt.levies)*

<b>Discom/DF</b>	<b>Avg. Revenue Realisation (Rs)</b>	<b>Avg. Revenue Realisation (as percentage of JVVNL)</b>
JVVNL	7.13	100%
KEDL	8.46	119%
BESL	8.45	118%

## Section 5. Energy Balance

In table 4, the petitioner claimed a combined transmission loss of 5.42% for computing the gross energy requirement.

### Our Comments

We submit the petitioner shall consider separate inter-state – 3.15% and intra-state loss – 3.35% for computing the transmission loss on energy procured from outside the state and total energy respectively and revise the estimates for gross energy requirement.

## Section 6.1 Power Purchase Cost

In the section 6.1.1, table 5, the petitioner submitted the actual power purchase costs for the FY19-20 at Rs. 15,159 Crores for 31,838 MUs at an average purchase rate of Rs. 4.87 per unit.

### Our Comments

We would like to highlight that in a year, where there is a 4.4% shortfall in the approved revenue, the petitioner submitted for the approval for an increase in the power purchase costs by 7.34% from approved costs of Rs. 14,550 cores. This implies, for the year 2019-20, the petitioner purchased more power than approved but sold less than the quantum approved by the commission.

For the year 18-19, the total power purchase costs (including transmission charges) approved by the commission in the true up of 18-19 is Rs. 13,799 Crores against the purchase of 30152.42 MUs. This brings the average per unit purchase cost (including transmission costs) for 18-19 at Rs. 4.57.<sup>6</sup>

In the petition, the total power purchased quantum submitted by the petitioner is 3.06% higher than the approved 30892 MUs. The total power purchase costs incurred (including transmission charges) are 6.66% higher than the approved Rs. 14,550 Crores. This resulted in escalation of average purchase rate by 3.4% from the approved Rs. 4.71 per unit to Rs. 4.87 per unit. It is also to be noted that the per unit cost submitted by the petitioner for approval is 6.56% higher than the per unit cost approved in the true up of previous year.

This is a significant escalation of costs year-on-year is a serious concern and the burden on which shall ultimately fall on the consumers. We request the commission deny the petitioner's request to approve power purchase costs as submitted in the petition.

We would highlight the petitioner submission in section 6.1.3 of the petition "The variance in the Power Purchase rate is on account of various factors higher power purchase cost of NTPC, Coastal Gujarat, Adani, Rajwest, RVUN stations, etc". But comparing the data submitted by the petitioner in the current petition and the data submitted in the true up petition of 18-19, shows that capacity charges<sup>7</sup> and Variable Cost per unit including Fuel Price Adjustment (Rs/kWh)<sup>8</sup> paid for the Coastal Gujarat, Adani, Rajwest power plants remains the same in the data submitted. We request the petitioner to submit clarification for the claim made. We further submit the petitioner to provide the plant-wise year-on-year increase in the capacity charges and average variable costs per unit along with the reasons for the increase.

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<sup>6</sup> Section 3.75, Table 3, Page 48, approval of true up of Jaipur Vidyut Vitran Nigam Ltd (JVVNL), Ajmer Vidyut Vitran Nigam Ltd (AVVNL) and Jodhpur Vidyut Vitran Nigam Ltd (JdVVNL) for FY 2018-19

<sup>7</sup> File name: JVVNL\_True up\_FY 2018-19\_v2\_Value (1), Sheet No: F3.1, Cell No: I80, I82, I159; JVVNL Petition for approval of True up 2018-19

<sup>8</sup> File name: JVVNL\_True up\_FY 2018-19\_v2\_Value (1), Sheet No: F3.1, Cell No: J80, J82, J159; JVVNL Petition for approval of True up 2018-19

We also suggest the commission direct the petitioner to undertake a study to assess the quantum of stranded capacity and analyse the plants with no reliable/efficient fuel linkages (gas/coal) and recommend an action plan to address the issues to reduce the burden of the capacity charges.

Data from the Annual Report FY19-20 of Northern Regional Load Despatch Centre (NRLDC), section 6.3, page no: 148 shows the state of Rajasthan paid a total deviation charge of Rs. 2,33,96,23,967 (233.96 Crores) for the year 2019-20 to the pool while receiving only Rs. 5,17,53,170 (5.17 Crores). The petitioner is requested to submit the details of actual amount paid for deviation for the year. We also request the commission to direct the petitioner to submit an action plan to reduce such deviation charges. We further request the commission to not approve such expenses incurred by the petitioner towards the deviation charges as the same is not approved in the tariff order 2019-20.

The petitioner is requested to provide a report on compliance of Merit Order Despatch (MOD) principles for power procurement along with details of deviation from the MOD principles with reasons. The petitioner is also requested to provide a clarification for procurement of expensive power from exchange despite availability of excess contracted generation capacity. The Commission is requested to reject all additional costs that are incurred due to non-compliance of Merit Order Dispatch.

We further submit that the MOD document uploaded in the petitioner's website do not provide the details of the energy scheduled and deviation with details reasons as per the MOD principles. Further the Merit India portal do not have the details of the MoD compliance for each and every Discom. It only provides the state-wise data. We submit the petitioner shall make the data of daily despatch as per the MoD be made available on the website.

We also request the petitioner to submit the action taken (if any) against the following remarks of the independent auditor in the Annual Report 19-20 with regard to the power purchase.

#### Annexure C

- a) The Company did not have an appropriate internal control system for timely recognising Inter Company transactions which could potentially result in the Company recognising over/under cost of Power Purchase and Trade Payables.
- b) The Company's Internal financial control over accounting of power procured is not operating effectively as the power purchase cost is booked on the basis of bills received till cut-off date and not on actual power purchased. This could potentially result in misstatement in Company's Trade payables and power purchase cost.

We submit the Commission to constitute an independent expert committee with representation from different stakeholders to review the current power purchase practices

and develop a time bound framework to address the inefficiencies. Following issues may be addressed by the proposed committee

- Improving medium and long-term electricity demand forecasting
- Improving short-term forecasting capabilities
- Planning for retirement of ageing assets and surrendering access power

## Section 6.2 Operation and Maintenance Expenses

### Our Comments

We request the petitioner to clarify whether the O&M expenses claimed are inclusive of expenses incurred for Distribution Franchisee area or not.

The petitioner claimed Rs. 674 Crores under terminal benefits against the approved Rs. 550 Crores. We request the petitioner to submit the details of actual funds deposited in the FY19-20 under the respective funds towards terminal benefit liability. We submit the Commission shall approve the terminal benefits expenses only as per actual funds deposited by the petitioner.

The petitioner claimed an Administrative and General Expenses of Rs.209.25 Crores, 28.22% higher than the approved expenses for the year (Rs.163 Crores) and 114% higher than the approved A&G expenses in the true up for the FY18-19 (Rs. 97.60 Crores)<sup>9</sup>. We request the petitioner to submit detailed deviation analysis for escalation in A&G expenses.

The petitioner, in Section 6.2.19, Table no. 9, claimed to have incurred an expense of Rs. 14.93 Crores for Consumer Awareness. The Commission in the Tariff Order has approved an expense of Rs. 0.5 Crores. We appreciate the petitioner's proactive increase in expenditure for creating consumer awareness but request the petitioner to submit a detailed list of activities along with the expenses incurred.

In this context, we would like to bring to the Commission's notice, that the petitioner claimed Rs. 16.5 Crores during the truing up of account for FY18-19 against the Rs.0.5 Crores approved by the Commission. When requested for break-up of the expenses, the petitioner submitted that Rs. 12.35 Crores of Rs.16.5 Crores is incurred towards the call centre. The stakeholders objected to that as call-centre provision is integral to the business of the petitioner and shall not constitute as consumer awareness initiative. The Commission took cognisance of the same and has not considered the expense incurred towards call centre and others. The Commission in the final Approved True up order dt. 27.01.21, section 3. (Page no: 54) rejected the petitioner's claim and only approved Rs. 4.14 Crores out of the Rs.16.5 Crores claimed.

## Section 6.3 Interest & Finance Charges

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<sup>9</sup> Table 16, Approved Trueup

The petitioner in the section 6.3.2 of the petition submitted "the situation was exacerbated by partial release of agriculture subsidy as claimed by the petitioner. This led to severe cash crunch, due to which the petitioner had to take higher working capital loans to meet its operations."

#### Our Comments

We would like to direct the Commission's attention towards the observations made by the Independent Auditor regarding the petitioner in the Annual Report of 2019-20.

Annexure B: Section B (4): Energy Department under Government of Rajasthan vide its Letter No. F.7(2) Energy/2019 dated 21.08.2020, clearly states that Rs. 4,461 Crore is payable to Discerns, from which JVVNL's share is Rs. 1,426.63 Crore (as per the details provided to us by Company), against total subsidy receivable of Rs. 3,999.33 Crore in books. Further, GoR in its letter also suggested Discoms to account for the same in books of accounts. Accordingly, as GoR has only admitted Rs. 1,426.63 Crore claimed out of Rs. 3,999.33 Crore, balance of Rs. 2572.70 Crore should be accounted for in Statement of Profit & Loss, but the company has not made any treatment for the same till date. Consequently, Current Year Prior Period Income is overstated by Rs. 2,572.7 Crore and Other Non-Current Assets are overstated by Rs. 2572.7 Crores. In the absence of details of year-wise rejection of subsidy claims of the company by the GoR, we are unable to give the impact of the same on the current year's profit and prior period income of the company separately. Company is persuading the matter with GoR

Section 35.9 (ii), page no: 90 of the Annual Report of the petitioner clearly states that out of the Rs. 4053.16 Crores of subsidy booked in the year, only Rs.2478.33 Crores is received from the government.

We request the Commission to take serious cognisance of the precarious issue of incomplete realisation of subsidy receivable from the Government of Rajasthan. As submitted by the petitioner, this is resulting in a requirement of higher working capital, leading to additional burden on the consumer.

We request the petitioner to submit the reasons provided by the government during the rejection of the subsidy claims. We also request the petitioner to submit year-wise details of the subsidy amount rejected by the government of Rajasthan along with the stated reasons for rejection.

We also submit, as standard business practise, the petitioner should either immediately initiate necessary legal proceedings to recover the subsidy amount or write off as losses incurred in the accounts while clearly indicating the reasons ensuring transparency.

As mentioned by the petitioner, the majority of the subsidy from the state government is receivable against the agriculture subsidy. In this context, we would like to bring the

Commission's notice towards the currently considered specific energy consumption (SEC) standard of 1945kWh/kW/year (1450 kWh/HP/annum) for computing sales of Agriculture flat rate consumers.

We would like to bring the notice of the Commission to the report of Working Group for Agriculture Consumption Study in Maharashtra (Working Group) undertaken for Maharashtra Electricity Regulatory Commission. A brief synopsis of the report and our analysis for Rajasthan is attached in Annexure I for the consideration of the Commission.

It may be noted the SEC for unmetered consumers is considered as highest in Rajasthan amongst the states of Gujarat, Maharashtra, and Punjab, despite water intensive cropping being uncommon in Rajasthan. While high average connected load per consumer may be attributed to lower water levels, the same does not necessarily apply for SEC. The Working Group in Maharashtra found various discrepancies in reporting of electricity sales data for agriculture feeders and estimation of agriculture sales. Such discrepancies are also highly likely in Rajasthan also.

Hence, it is our submission that SEC shall be capped at 1,093kWh/Hp/annum or 1,466 kWh/kW/annum while approving the current true up petition. It is also requested that the Commission institutes an independent study to ascertain the same.

#### Section 6.4 Depreciation

In the section 6.4.1, table 14 of the petition, the petitioner claimed an actual depreciation incurred at Rs.1003.56 Crore.

#### Our Comments

The depreciation claimed by the petitioner is 40% higher than the approved Rs.719 Crores and 52% more than approved in the true up of the FY18-19 (Rs. 658.12 Crores)<sup>10</sup>.

The independent auditor also made the following observation in the annual report FY19-20 of petitioner

Annexure C (h)The Company's Internal financial control over existence, completeness, valuation and allocation of Property, plant & equipment and capital work-In progress (including material lying at site) is not operating effectively. The Company did not have an appropriate Internal control system over maintenance of Property, plant & equipment & Capital work-in progress (CWIP) records, impairment of Property, plant & equipment & CWIP and physical verification of Property, plant & equipment & CWIP. Further, the internal control system over capitalisation of value, manner of capitalisation, and allocation of administrative cost and finance cost is not adequate. These material weaknesses could potentially result in material misstatement In Company's Property, plant & equipment, CWIP, depreciation, and expenses.

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<sup>10</sup> Table 16, Approved True up 2018-19

We submit the Commission shall take due cognisance of the auditor's remarks, the drastic escalation without detailed deviation analysis, and shall not allow the depreciation beyond the approved Rs. 719 Crores. We request the Commission to further reduce the approved deviation by 10% till the verified Fixed Asset Register is made available.

We further request the Commission to issue directions to the petitioner mandating implementation of necessary accounting and management processes to address issues raised by the auditor and submit the report within 3 months.

### **Synopsis of the report of Working Group for Agriculture Consumption Study in Maharashtra (Working Group) undertaken for Maharashtra Electricity Regulatory Commission.**

The field survey of nearly 1.33 lakh consumers spread across the state of Maharashtra by the working group was undertaken to analyse Agriculture metering status. Below are some of the findings of the WCG, which present the discrepancies in the estimation of the average number of hours for using agriculture pumps per connection in Maharashtra.

1. Nearly 70% of surveyed consumers use pumps between 50 and 150 days a year. 90% of consumers use pumps for less than 200 days a year, and just about 1.5 % of consumers use pumps for more than 250 days a year.
2. Of the 502 feeders surveyed, 307 feeders have registered actual load more than 100% of the total connected load, with 28 of them recording more than 300% of the total connected load. This implies a rampant prevalence of unauthorised use of electricity.
3. Out of these 70 feeders considered for full-year data analysis, 42 feeders (60%) have registered excess load (more than the total connected load on the feeder) for at least 10 hours, while 31 feeders (44%) have registered more than 125% of the connected load for at least 10 hrs.
4. For 34% of the feeders, more than 25% of annual feeder input was during excess loading.
5. Based on the consumption calculated for 386 feeders, the working group recommended an estimated agricultural consumption norm as 1,093 kWh/HP/yr. or 1,465 hrs./ annum.

The state of Maharashtra, with water-intensive agriculture crops like Sugarcane and with lift irrigation practices, considers 1448 kWh/HP/Annum for estimating unmetered agriculture consumption. In comparison, the Rajasthan Electricity Regulatory Commission (RERC) considered the specific consumption of 1945 kWh/kW/year (1450 kWh/HP/annum) for estimating the consumption by unmetered connections.

According to the analysis by Maharashtra Veej Grahak Sanghatana, for regions where water-intensive crops, especially Sugarcane, are grown, the annual hours of pump operation for lift irrigation schemes, which get 16 hrs per day supply, are 1875 hrs. This implies a specific consumption of 1,398.75 kWh/annum/Hp. Despite the water table is lower in Rajasthan than in the other states, since Discoms in the state supply electricity for irrigation needs for about 6 hours per day, it clearly indicates that the specific consumption assumption of 1,450 kWh/annum/Hp in Rajasthan is a significantly exaggerated Figure.

The estimate arrived at by the working group is also supported by the study conducted by Maharashtra State Electricity Board (MSEBHCL) through IIT-B, which estimated AG Index for Maharashtra as 1063 hrs per annum for FY 15-16.

Since the cropping of water-intensive crops in Rajasthan is relatively limited, it may be considered that the majority of the agriculture consumers in Rajasthan are using pumps for less than 150 days a year. This shall correspond to a maximum annual average pump usage of 900 hours or a maximum SEC of 671.4 kWh/annum/Hp.

Analysis of data reported by Rajasthan Discom

For the computation of the agriculture sale in the tariff and true-up petition, the Commission considered the same specific consumption across the three Discoms in the state. However, a brief analysis of the data in Discom's tariff petitions indicates that each Discom has a different mix of the metered and unmetered connections. The same is presented in Table.

*Table: Agriculture connection data across three Discoms in Rajasthan*

<b>Agriculture (FR) Sales for FY 18-19</b>	<b>JVVNL</b>	<b>AVVNL</b>	<b>JdVVNL</b>	<b>Total</b>
Agriculture Metered Supply (MU)	6956	4952	9799	21707
Agriculture Flat Rate Supply (MU)	259	868	1224	2350
% of Flat Rate Sales in Agriculture	3.58%	14.91%	11.10%	9.76%
No of flat-rate consumers	10506	31785	30588	72879

Given the diversity in cropping patterns, water availability, and climatic zones, the specific consumption for each Discoms shall be determined separately. This shall also prevent the transfer of the inefficiencies of one Discom to another and avoid cross-subsidisation amongst the Discoms.

#### **Recommendations for Estimations of Un-metered Electricity Sales to Agriculture Consumers in Rajasthan:**

It is highly unlikely that Rajasthan, with comparatively less water-intensive agriculture practices than Maharashtra, has higher specific consumption for agriculture connections. There is a high likelihood of over-estimating unmetered agriculture consumption of electricity in Rajasthan, possibly due to the incorrect estimation of the overall agriculture load, improper consumer indexing, theft/unauthorised use of agriculture feeder, defective metering.

We strongly recommend that a detailed study is conducted in Rajasthan. In the meanwhile, the following measures may be adopted for Rajasthan to improve the accounting of unmetered agriculture sales.

1. Maximum specific consumption to be allowed for estimation of unmetered electricity sales shall be capped at 1,093 kWh/Hp/annum or 1,466 kWh/kW/annum.
2. The specific consumption shall be computed for each Discom separately to account for cropping and ecological diversities.
3. Launch a drive to provide curtail theft in agriculture feeders and improve energy efficiency.
4. Develop a strict framework for monitoring and reporting of actual hours of supply to

agriculture consumers, especially unmetered consumers.

5. Initiate a detailed feeder study by independent organisations to quantify SEC for unmetered connections.

Reference:

Prayas (Energy Group) (2020) Working Group for Agricultural Consumption Study – Final Report. Maharashtra Electricity Regulatory Commission

<https://www.prayaspune.org/peg/publications/item/457-working-group-for-agricultural-consumption-study-final-report.html>