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Supplementary Submission Before MERC – Case 1/99

5th February 2000

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The Main Argument: Tariff Decision and Beyond

The Context

The context of formation and functioning of the state regulatory commissions needs to be considered before going into deliberations on the tariff proposal of MSEB.

One of the widely accepted primary root-causes underlying the present crisis in the Indian power sector is irrationality in the decision-making processes in the sector. Hence, in the current model of reforms (or restructuring) of electricity sector, bringing in rationality in decision-making processes is seen as the main responsibility of independent regulatory commissions.

For various reasons, tariff is being seen as an area of decision-making wherein rationality needs to be brought in on urgent basis. Especially, consumers now look up to regulatory commissions to protect them from the earlier unjust practice of burdening them with the costs of distortions and perversions in the functioning of the SEBs such as theft, corruption, mismanagement, inefficiency, and indiscipline.

Bringing in rationality in tariff-related decisions requires rigorous and detailed analysis of costs and revenues of utilities. This, in turn, requires full information on calculations of costs and revenues as well as data and information on key aspects of functioning of the utility, which have implications for costs and revenues of the utility.

The current process of deliberations on the tariff proposal of Maharashtra State Electricity Board (MSEB) submitted to Maharashtra Electricity regulatory Commission (MERC) needs to be viewed in this context.

This proposal puts forth demand for tariff increase worth Rs. 1,219 crores. This proposed increase is primarily on account of two factors: (a) the surplus (4.5 % of net fixed assets) as required by Section 59 of the Electricity Supply Act 1948 (which is about Rs.535 crores); and (b) the costs that are claimed to remain unmet unless tariff is increased (which is about Rs. 684 crores).

Decision on Tariff

We are aware that, at the end of the deliberation process on the MSEB proposal, the Commission is sifting through flood of comments, suggestions, objections, and rejoinders in order to cull out compelling evidence and to crystallise its own decision.

In this submission, we present our arguments in the light of the evidence available at the end of this process. In making a very brief submission on the tariff decision, we wish to focus only on the following extremely important points.

The first point is related to revenue, which MSEB is earning in reality, but failed to mention in the proposal. As demonstrated in Annexure I, the tariff revision proposal submitted by MSEB has not accounted for nearly Rs. 400 crores of income while calculating required tariff increase in order to meet the projected expenditure. Hence, it is imperative that the proposed additional revenue sought by MSEB should be reduced by Rs. 400 crores on this account alone.

The second issue relates to the surplus requested by MSEB through increase in tariff. As demonstrated in Annexure II, MSEB is guilty of grotesque level of inefficiency and its operations are also highly uneconomic, and, hence, MSEB does not deserve any surplus. The cost of this, which is at least Rs. 800 to 1,500 crores per annum, is currently borne by consumers. Hence, as mentioned in the annexure, we request the Commission

not to allow MSEB to increase tariff in order to create surplus, which MSEB does not deserve. This would be highly unjustified increase in burden on consumers who are already subsidising MSEB's inefficiency. It is pointed out in the annexure that the Commission is empowered by the ERC Act to take this step.

Third, as mentioned in the Annexure III, because of deficiencies in the procedures followed by MSEB for 'merit order dispatching', only in one month (December 1999) of the current year, MSEB has paid to DPC Rs. 6.7 crores in excess, which cannot be justified. Hence, we request the Commission to specifically disallow this cost and cut it from the total costs allowed.

Thus, while making tariff decision, out of the total tariff increase proposed by MSEB (Rs. 1,219 crores), the hidden revenue of Rs. 400 crores and surplus of Rs. 535 crores need to be subtracted. Further, the commission should also disallow Rs. 6.7 crores on account of excess and unjustified payments to DPC during the month of December 1999. What remains after these deductions is Rs. 277 crores of unmet costs.

Here, we wish to point out to the Commission that other individuals and institutions have submitted comments and objections on various costs claimed in the proposal. The Commission should consider these comments and make the necessary deductions from the above-mentioned figure of Rs. 277 crores of unmet costs. In addition to this, the Commission should make its own analysis and judgement to check whether any tariff increase is required to bridge the remaining portion of unmet costs.

Further, re-balancing of the tariff is another important critical issue in the current tariff process. Agricultural tariff, obviously, is the central issue in this regard. In Annexure IV, we have presented a brief note containing our suggestions on agricultural tariff policy that the Commission should adopt. We wish to request the commission that it should start taking required steps as soon as possible. But, at the same time, we urge the commission to take cautious approach in order to maintain feasibility and sustainability of the decisions made.

Urgent Tasks before MERC

Whatever may be its decision on tariff increase, the Commission has to work to fulfil its own responsibilities and mandate, viz., ensuring health of the sector and ensuring adequate and improving scale of efficiency.

We also wish to remind the Commission that, as demonstrated in Annexure II, consumers in the state are already paying for the colossal loss due to theft and inefficiency in the functioning of the MSEB. In this context, we suggest that the Commission should take a very pro-active stand and initiate urgent actions on the following two critically important issues.

First, the Commission should ask MSEB to undertake energy audits of its entire T&D network on urgent basis. This audit should cover all elements of the network right from generation plants to low-voltage distribution feeders.

Annexure V covers a discussion on the criticality of energy audits and suggests a step-wise approach for energy audit which will help ensure that MSEB implements the audit in a reasonable time-frame. We urge the Commission that MSEB should be directed to meet the benchmarks and constitute a committee to monitor MSEB's progress towards these benchmarks, as mentioned in the Annexure.

Second, during the process of Case 1/99, it has been amply proved that MSEB is either not willing to or is not in a position to furnish the data and information required by the Commission or public for undertaking scrutiny of MSEB's costs and revenues as well as critical aspects of its functioning.

Hence, in order to ensure rationality in the Commission's decisions, it is necessary that the Commission impose a set of mandatory conditionalities on MSEB regarding the design and implementation of data systems. These data systems should cover collection, compilation, maintenance, processing, and presentation of the required data on various critical factors. MSEB should be asked to come back to MERC with the initial results produced by these data systems within the period of six months. This will ensure that the Commission will have all the data and information necessary for analysis and rational decision on MSEB's next tariff proposal.

We request that the conditionalities regarding these two urgent matters should become integral part of the Commission's final order in Case 1 / 99.

The Other Short-Term Tasks

Apart from these two urgent measures, the Commission should initiate separate processes on certain important matters in order to ensure rationality (in the broader sense of the term) in its own decisions. These processes should involve public participation (in different modes) and should be undertaken well before MSEB comes up with its next tariff proposal.

The important matters that these processes should cover, include: quality of service provided to consumers; agriculture tariff; power purchase agreements with independent power producers; least-cost planning and integrated resource planning.

Conducting processes on these matters would help the Commission to understand different standpoints on these matters and develop comprehensive, analytically sound, and socially relevant positions on them.

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Annexure I

The Hidden Revenue

This annexure demonstrates how the tariff revision proposal submitted by MSEB has not accounted for nearly Rs. 400 crores of income while calculating required tariff increase in order to meet the projected expenditure. Thus, it is imperative that the proposed additional revenue sought by MSEB should be reduced by at Rs. 400 crores on this account alone.

1. Hidden Revenue on Account of Miscellaneous Charges and Other Income (Rs. 300 crores)

Apart from actual revenue from sale of power (i.e. demand charges, fixed charges, minimum charges, energy charge and FCA, etc.), MSEB also earns revenue on account of many other charges as listed in the table below:

Components of MSED's Total Devenue						
Compone			venue			Proposed
			1006.07	1007.09	1009.00	1000 2000
1 5			1990-97	1997-90	1990-99	1999-2000
1. Revenue	e from sale of pow	/er	8489	9166	9991	13560
2. Miscellaneous Revenue		75	118	130		
3. Other Income		243	283	415		
Sub-total 2 + 3		319	401	545	299	
Total Income		8808	9566.106	10535.87	13859	
Miscelland						
Miscellan			96-97	97-98	98-99	
Motor Don	t / Sonvice line Pr	ntal	12 29	15 50	17 99	
	t / Service line Re		42.20	45.56	47.00	
Recoveries	s for theft / Malpra	ctice	0.35	2.46	0.73	
Wheeling o	charge recovery		8.59	44.44	52.43	
Misc. Charges from consumers		24.54	25.49	29.17		
		Total	75.76	117.97	130.21	
Other Inco	me					
			96-97	97-98	98-99	
Int. on Staff loans		1.9	2.753	2.326		
Income fro	m Bank deposits		0.007	6.09	46.97	
Delayed Payment charges		32.89	42.16	55.59		
Int. from consumers		138.51	161.48	222.64		
Int. on adv. to suppliers		0.91	1.42	1.20		
Income from trading		24.86	19.81	19.54		
Miscellaneous receipts		44.36	48.56	66.23		
Other 4 items (each < 1 Cr.)		0.09	0.27	0.03		
	,	Total	243.53	282.56	414.5	

Note: Income from revenue subsidy from government and electricity duty collected by MSEB and paid to Government is not considered in the above table.

In the proposal, MSEB has indicated that proposed actual revenue from sale of power would be Rs. 13,560 crores (as per pg. 36 and 52 (on annualised basis)) and miscellaneous revenue would be Rs. 299 crores, which consists of items like delayed payment charges, interest, minimum charges, power-factor penalty, etc.

But during the last three years, as indicated above, the total revenue from heads other than actual sale of power has been increasing and was Rs. 544 crores in 1998-99. Considering that some charges (such as meter rent, etc.) are substantially increased in 1999-2000, this amount would not be less than Rs. 600 crores.

Thus, there is a difference of Rs. 300 crores in revenue figures proposed by MSEB (Rs. 299 crores) and revenue it is likely to earn under the head of "other / miscellaneous income" (Rs. 600 crores).

Some of the revenue items mentioned above form part of charges that come under the "terms and conditions" of supply, and some of the revenue may be coming from nonconsumers. MSEB may argue that, due to these reasons, this revenue does not fall under the ambit of this tariff revision process. There are two counter-arguments to these arguments:

i) As per the 'Conduct of Business Regulations' (CBR) of MERC, MERC has jurisdiction over "terms and conditions" of supply and unless MSEB produces legal evidence proving this to be illegal, the MERC is free to exercise powers as per its own CBR.

ii) Even if actual determination of this revenue may be out of purview of MERC, this revenue need to be taken into account while calculating the total revenue requirement of MSEB. Not doing this would amount to double counting of costs. This is because, on one hand, MSEB is using the infrastructure and manpower, the cost of which is loaded on to the consumers. But, on the other hand, the benefit out of this infrastructure and manpower costs, is not passed on to the consumers who are bearing its costs. If MSEB wishes to argue that the costs of these activities are not loaded on to the consumers, then MSEB should have / should provide detail calculation of apportioning the cost of infrastructure and manpower between these un-regulated activities and regulated activities. If MSEB is not able to provide this justification, then this revenue should be taken into account while deciding the additional revenue requirement.

Thus, the proposed revenue requirement by MSEB should be reduced by Rs. 300 crores on this account alone.

2. Hidden Revenue on Account of Improper Estimation of Revenue from Fixed Charges from LT Industrial Consumers (Rs. 100 crores)

MSEB's proposal has calculated revenue from fixed charges from LT industrial consumers (LTP – G) on the basis of load of only 23,000 HP. The figure is simply wrong. (This is because if it were correct, then in order to have an annual consumption of 1989 MU, the industry should run at full load for 317 Hrs./day!). The figure for the LT industrial load should be at least 100 times that of the figure indicated in MSEB proposal. But this is not simply a typographical error as the same incorrect figure has been used by MSEB in the subsequent calculations. As a result of this mistake, the MSEB will get additional revenue to the tune of Rs. 100 crores /yr., which is not reflected in the proposal.

We wish to point out that both these instances of hidden revenue were pointed out in our earlier submissions to MERC and MSEB (in Petition 2/99, as well as in our comments on MSEB's proposal dated December 22, 1999). But MSEB has not provided any rejoinder to these objections in their response.

Thus, it can be seen that the tariff revision proposal submitted by MSEB has not accounted for nearly Rs. 400 crores of income while calculating required tariff increase in order to meet the projected expenditure. Hence, it is imperative that the proposed additional revenue sought by MSEB should be reduced by at least Rs. 400 crores on this account alone.

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Annexure II

MSEB's Inefficiency and Unwillingness to be Accountable

This annexure discusses failure of MSEB to monitor, collect and compile basic data that relates to energy received and energy consumed at different levels. Moreover, the evidence indicates unwillingness on the part of MSEB to put in place the data systems required to ensure its accountability.

1. Irrationality in Estimation of Agricultural Consumption

The unmetered usage / consumption of electricity has risen rapidly in the state in the last few years. In the last decade, it has grown from nearly 30 % to over 45 % of the



total energy available for sale to MSEB. At today's average realisation, this turns out to be a whopping 6,000 crores, i.e., close to 45% of the total revenue requirement proposed by MSEB. In other words, this unmetered energy itself is five times the incremental revenue sought by MSEB in this proposal. This Rs. 6000 crores worth of electricity is apportioned by MSEB under two headings: (a) technical (T&D) losses, and (b) agricultural consumption.

In the first two sections in this annexure, we demonstrate: (a) how this apportioning is done using very scanty or even irrational data; and (b) how MSEB has not been able to provide any credible justification for the claimed figures for agricultural or irrigation pump set's (IPS) consumption.

As per the MSEB's response to Prayas (dt. 19-01-2000) (hereafter called the MSEB response), MSEB's estimate of IPS consumption for the year 1999-2000, is based on a load survey carried out by Synergic Resources Consultants (wrongly mentioned as Synergic Energy Systems, in MSEB's response) in 1996. As such, it seems that the best data MSEB had was from the SRC study.

MSEB's attempt to estimate IPS consumption and to apportion un-metered energy worth Rs. 6000 crores on the basis of this report is highly irrational for the following reasons: § In para 1 of the response, MSEB has listed several factors affecting the IPS consumption in the state and concluded that "considering the vast area of Maharashtra and different rainfall patterns in the various parts of the state, a highly accurate estimation of consumption is difficult" But in spite of being aware of this difficulty, MSEB has relied on SRC report which based its conclusions on data from only ten feeders from across the state ! The following table provides region-wise breakup of these ten feeders.

Area	No. of Feeders
Western Maharashtra	7
Vidharbha	1
Marathwada	2

- § Moreover, even though these data was used for apportioning energy worth Rs. 6000 crores, MSEB was not aware of the connected load of agricultural pumps on these feeders and has <u>assumed even the connected load</u>! (para 1 (a) of the response).
- **§** Further it is essential to note that the main objective of this study was to prepare a "Demand Side Management" (DSM) plan for MSEB and estimating the IPS consumption was not a primary goal of this study.
- **§** Even the report itself has identified an important limitation of the data from these ten feeders. According to the report, because these were <u>mixed feeders, (it was not possible) 'to separate other loads from agricultural loads'.</u>



Further, load on none of these feeders, dips below 40% of the average even in monsoon season. This clearly indicates that either these feeders fed to high consumption IPS or there was substantial nonagricultural load on these feeders.

§

In short, using data

from SRC study for apportioning energy worth Rs. 6000 crores was highly irrational. In plain terms, it was nothing but making a mountain out of a mole.

2. Continued Failure of MSEB to Collect Rural Consumption Data

MSEB must have realised that it doesn't have adequate data for proper estimation of IPS consumption in the state, at least in 1996, when SRC study was completed. But as demonstrated below, MSEB failed to take effective actions to institute a system for collection and compilation of agricultural consumption, at least at few feeders.

In response to MERC's order to provide data (Order dt. 18-01-2000 on Case No. 2/99) MSEB provided Prayas with information on outcome of an exercise of monitoring of some primarily agricultural feeders from four circles. Salient features of this information are provided in the table below.

Name of the Circle	No. of Taluka's covered	No. of Dist. T/F on which Meters Are Fixed	Data Availability Period
O & M Circle Amravati	12	96	April 98 to July 98
O & M Circle Aurangabad	16	116	January 1998
Nagpur Rural Circle	12	40	Jan 98 and Feb 98
O & M Circle Jalgaon	6	115	Oct. 96 to March 97
Total	46	367	

It is clear that MSEB has been monitoring a large number of agricultural feeders for the last few years. However, in the same response, MSEB has also cited reasons for not relying on this data for estimation of agricultural consumption. MSEB states "*It may be pertinent to note that these data may not be reliable considering the facts that: (1) The survey is available only for few places and cannot be representative for the state as a whole. (2) There is wide variation in the results obtained and therefore (the results) are* <u>unrealistic.</u> (3) The survey varies from one month to six months (4) <u>The meter readings</u> <u>shown cannot be relied upon as the accuracy of the meter is doubtful as the readings are</u> <u>actually not taken for billing purpose." (emphasis added)</u>

It is interesting to note two blatant inconsistancies and descripancies in MSEB's arguments about the estimation of agricultural consumption in the state in the light of these facts.

First, in the same response, at one place, MSEB says that there would be wide variation in the agricultural consumption in the state, but when the monitored feeders indicate such wide variation it becomes an excuse for dismissing the data as unreliable!

Second, it is claimed that the feeder monitoring data are available only for a few places (*over 300 distribution transformers [Dist. T/F]from 46 talukas*) and, hence, cannot be taken as representative of the state. However, MSEB continues to rely on the three year old data from SRC study, which is only for ten feeders, and for which even the connected agricultural load had to be assumed!

It is clear that after SRC study, an effort was made by MSEB to initiate a program for monitoring adequately large number of agricultural feeders. Monitoring of such a large number of primarily agricultural feeders cannot be an isolated exercise, rather it should be a part of a well-planned program to monitor these feeders. However, the fact that MSEB could not provide data even for one year and even for a single feeder betrays the inefficiency and / or unwillingness of MSEB to be accountable. To say the least, this clearly demonstrates, unpardonably <u>high level of inefficiency and /or unwillingness on the part of MSEB, to put in place a proper system for measurement or estimation of agricultural consumption in the state¹.</u>

3. Urban Energy Audits

In it's order on case 2/99, (dt. 18-01-2000), MERC, had also directed MSEB to provide Prayas with data regarding urban energy audit. In it's response MSEB could provide data only for four urban regions. However, during the public hearings at Pune, the honourable Member (Technical), of MSEB mentioned that MSEB has been monitoring energy consumption of eighteen urban areas. MSEB in it's response, on 28th January 2000, mentioned that energy audit for urban areas has been started a year ago, and the information is being analysed on experimental basis.

We find this information provided by MSEB to be highly inconsistent within itself, and hard to believe, especially in the light of remarks made in the report of the Rajadhyaksha Committee, in 1996. On page 23, the report mentions that:

"The figures of energy losses in some major cities, in terms of energy received and energy billed for the period of 1st October 1995 to 31st March 1996, shows disturbing trends. For example, such losses were the highest in Bhiwandi (59%) followed by Latur (27%), Kalyan (20%), Aurangabad (19%) and so on. The fact

¹ We have in our possession, a detailed report of 27 agricultural feeders in Pune (Rural) circle monitored by MSEB during the period, Oct. 1994 to Sept. 1995. The connected load on all these feeders is known. Moreover, the cropping pattern and water source for a high and a low consumption feeder is also reported (indicating that even such data was collected). Only one of these feeders has a mixed load, rest all feeders have exclusively agricultural load. For fifteen feeders, data for a full year is available. Eight of these feeders are high consumption feeders and rest seven are low consumption feeders. The average consumption on these feeders is 64.5 units /month/Hp (equivalent to pump operation of about 1,020 hours per year). This is 36% lower than the MSEB's claims that the average unmetered pump in the Western Maharashtra consumed 99 units/month/Hp (equivalent to operation of 1,589 hours per year) in 1994-95. Despite informing the names of the feeders to MSEB, MSEB could not locate this report and nor could find any other report from this circle for any other period. The MSEB reply dated 28/01/2000 (REF: PR-3/MERC/3078) says that

[&]quot;As regards the rural regions the data for 10 feeders mentioned by you, we cannot confirm that the said data is available with us. The recording of the data on these feeders was done during SRC DSM project and the practice of recording has been discontinued. As such annual data for agricultural feeders is not available with us and hence not forwarded to you"

In fact, it is interesting to note that MSEB did not even notice that the SRC study which the MSEB had ordered and has been relying so heavily, did not have even a single feeder from Pune (Rural) circle.

of large losses was also borne out by the figures of circlewise energy received and sent out during 1993-94."

The above paragraph clearly indicates that the energy audit of many urban areas was / is being done since 1994. Incidentally, MSEB has not even provided us with the data of urban regions mentioned in these quotes from Rajadhyaksha Committee report.!

Thus, this discussion on urban energy audit again indicates, that either MSEB is unwilling to share the available data with the Commission and with public, or <u>there is</u> <u>high level of inefficiency and /or unwillingness</u>, on the part of MSEB to put in place a proper system for estimation of urban energy consumption and losses.

4. Irrationality in Regional Level Data

As pointed out by Prayas during the public hearing on 20th January 2000 at Pune, there is large discrepancy in regional agricultural consumption norm (i.e. consumption per agricultural consumer) as per MSEB's claims. It is highly unlikely that the agricultural consumption norm in Vidarbha region would be 2.2 times that of Western Maharashtra. Further, in one year (1993-94 to 1994-95), according to MSEB data, the total agricultural consumption in Vidarbha, suddenly increased by 55% i.e. an increase of nearly 1,000 MU (equivalent to a load 250 MW for 4,000 hrs. /yr.). Quantum of this sudden rise is so high as compared to consumption of other consumers in Vidarbha, that it is unlikely that there was misallocation amongst different categories of consumers within the region.

Further, it is interesting to note that for the last few years the increase in agricultural consumption (in MU) was allocated to the three regions of Western Maharashtra, Vidharbha, and Marathwada in the ratio of 46.2:25.1:28.7. This ratio has remained same for the last three consecutive years. More interestingly, this allocated consumption is supposed to be the total consumption of all pumps including the metered pumps. In any case, this steady ratio cannot be explained. It has no linkage with change in either number of consumers or in connected load.

Both these facts clearly indicate that MSEB neither knows nor reconciles even the energy sent out to different regions, and has no system to record the energy consumed even at regional level. This is very surprising, because such reconciliation at regional level would involve only a few meters and that too at the EHV level.

5. Failure to Provide Rejoinder to Prayas' Estimates

At this stage, we would like to reiterate the main conclusion presented during the public hearing at Pune (a written note of this presentation was also submitted to MSEB and MERC on the same day.)

"The agricultural consumption is highly overestimated by MSEB and huge components of theft and T & D losses are portrayed as agricultural consumption. This overestimation can be from Rs. 800 Cr. to over Rs. 1,500 Cr." Despite repeated reminder by Prayas and even by the Commission, MSEB has not provided any serious rejoinder to this argument either during the public hearing or in the written form to Prayas.

This unchallenged conclusion, based on official MSEB data, establishes that MSEB's operations are highly uneconomic and involves colossal loss.

We are aware that MERC cannot allow the process of giving rejoinders to go on beyond one point. However, considering the crucial nature of this matter, we request MERC to provide us with a copy of MSEB's rejoinder, if any, and to allow us some time to provide a further rejoinder.

6. Conclusions

The discussion in the first four sections in this annexure clearly establish that MSEB has failed to measure the energy consumption:

- i) at the level of rural distribution transformer / sub-station,
- ii) at the level of urban distribution transformer / sub-station level
- iii) even at the EHV level !

It can be said that the root of this abject failure is either incapacity and inefficiency of MSEB or it's unwillingness. This needs to be seen in the context of facts that a large number (nearly 100 lakh) of consumers are billed by MSEB on the basis of meters, and that, compared to this operation, maintaining properly functioning meters and recording their readings at the feeder / distribution transformer level is much easier. The excuse of lack of technical / management capability to properly install and maintain meters at not more than a few thousand locations and compile data from them cannot be an acceptable excuse, especially, when it involves critical aspect of properly allocating energy worth Rs. 6000 crores. This establishes that MSEB's unwillingness to properly account for the energy consumed could be the only explanation for the abject failure.

The above inference needs to be seen in light of comments made by Rajadhyaksha Committee regarding the agricultural consumption projected by MSEB.

"The board has estimated that, on the basis of 8 hrs. a day of working during 8 months of non-monsoon period and 3 hours a day of for monsoon period, an agricultural pump, on an average, runs for 2320 hrs. out of 8760 hours in a year.

... These assumptions can be open to challenge on the ground that they tend to inflate the figures of consumption, particulary of agricultural pumps, thereby supressing the T & D losses as also the theft of power.

..... The Committee has reservations about the consumption of unmetered categories projected by MSEB. The Committee strongly recommends that the Board should take up a time bound programme for energy accounting as also energy audit." To sum up, MSEB has failed for years together to conduct proper energy accounting, even at EHV levels, and proper monitoring for estimation of agricultural consumption, in spite of:

- recommendations and adverse observations from committees such as Rajadhyaksha Committee,
- directives from institutions such as CEA and PFC,
- being well aware about the need for such accounting for properly allocating the unaccounted energy to T & D losses and agricultural sector.

As mentioned before, unwillingness on the part of MSEB to be accountable could be the only explanation for such an abject level of inefficiency. Further, it has failed to provide serious and effective rejoinder to claims made by Prayas that the energy worth from Rs. 800 crores to over Rs. 1500 crores is wrongly being claimed as agricultural consumption, which in fact is part of T & D (technical as well as commercial) losses. This establishes that there is colossal economic loss due to theft and/or inefficiency in MSEB's operations.

As a result, of this unpardonable and grotesque level of inefficiency and uneconomic operation of MSEB, the paying consumers of MSEB have to bear an undue burden of thousands of crores of Rupees.

7. Prayer

In the light of above conclusions, before making the following specific prayer, we wish to place before the commission the following factors for it's consideration

- a) The burden of providing proof against various objections and lacunas in the justification of its proposal lies with MSEB.
- b) There is a legal obligation on MSEB to provide electricity in the most efficient and economical manner (Sec. 49 of the Electricity Supply Act, 1948).
- c) Provisions of Sec. 29(2) of the Electricity Regulatory Commissions Act, 1998 requires that "the tariff should progressively reflect the cost of supply of electricity at an adequate and improving level of efficiency", and that "the interests of the consumers are safeguarded".
- d) Provision of section 30 of ERC Act 1998, empowers the commission to deviate from provisions of section 29 of ERC Act, 1998.

Hence, considering the grotesque level of inefficiency and losses in MSEB's operations and considering the unwillingness on the part of MSEB to be accountable, we urge the commission not to allow MSEB to increase tariff to create Rs. 535 crores as surplus and this amount should be deducted from MSEB's revenue requirement. Further, MERC should direct MSEB to take urgent and effective steps which can enable it to reduce its inefficiency, and earn the desired surplus.

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Annexure III

Merit Order Dispatch: Implications of Lack of Hourly, Plant-wise Generation Data

It is a well-known fact that merit order dispatch plays a crucial role in minimising the overall operating costs on account of power generation. This becomes more important in the current situation when new plants with high variable cost are added to the system. In order to judge MSEB's performance in this aspect, we had requested from MSEB data regarding hourly plant wise generation in electronic form. The MERC had directed MSEB to provide this data though its order in Case 02/99, dated 18-01-2000. To our surprise, MSEB, in its response dated 28-01-2000, mentioned that the hourly plant wise generation data are not being stored at the load dispatch centre and as such the soft copy of this data is not available.

We cannot understand why such important data is not being stored, even for the current year and especially when the tariff revision process for the current year is in progress. In the absence of this data, reasonableness of MSEB's claims regarding power purchase cost cannot be verified. In this context, analysis of even the limited data available with us indicates need for more stringent scrutiny of MSEB's merit order dispatch. We suggest that the MERC examine this issue carefully.

No. of hours when the	No. of hours when DPC was	Average generation by DPC
frequency was more than	substantially dispatched in	in these hours (MW)
50 Hz.	these hours	
103	103	520

Analysis for the Month of December 1999

From the above table it can be seen that even though the fuel cost of DPC is substantially higher than other plants of MSEB, the DPC plant was allowed to generate at more than 70% of its capacity, even while the system frequency was higher than 50 Hz. It needs to be pointed out that this cannot be an isolated instance, as the situation persisted for 103 hours in a month (14% of the total time duration in the month). Gravity of the issue becomes more serious in the light of the fact that oil prices (and hence the fuel cost of DPC) have been extremely high in the recent periods.

The generation of DPC in these 103 hours was 5.35 million units (MUs). On the conservative side, we can consider that DPC's fuel cost is higher by Rs. 1.25/unit compared to other plant that could have been dispatched by MSEB. This implies a wasteful expenditure of Rs. 6.7 crores.

Hence, we urge the Commission to analyse in detail the hourly plant wise generation data of MSEB, in order to be able to reasonably satisfy itself about the appropriateness of plant dispatching and justifiability of the claimed power purchase costs. In addition, we urge the Commission to specifically disallow all such amounts from the allowed expenditure to MSEB.

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Annexure IV

A Note on Agricultural Tariff Policy

The objective of the tariff policy for irrigation pump sets (IPS) could be threefold: (a) to increase awareness and acceptability of metering primary as an urgent measure required for ensuring overall accountability of MSEB, (i.e. for recording exact agricultural consumption and T&D losses) (b) to initiate the process of acceptance of the principle of "consumption linked payments", acting as an incentive for increased efficiency of use, and (c) to increase revenue from agricultural consumers.²

As we have demonstrated in Annexure II, there is ample evidence to prove that MSEB is overestimating consumption by agricultural pump-owners and that it is hiding under this overestimated agriculture consumption, a large part of T&D losses (commercial and technical losses). As a result, the actual consumptive subsidy used by agricultural consumers is far less than what is officially projected, or, in other words, the tariff paid by agricultural is already higher than what is claimed.

Considering the grotesque levels of the theft and excessive technical losses, it would be easier and faster to increase MSEB's revenue by curbing these losses than by trying to increase revenue from agricultural consumers. It is preposterous to propose metering of dispersed agricultural consumers while arguing that putting handful of meters for energy audit, on urgent basis, is an impossible task.

Hence, we feel that during the current tariff revision process the main objectives should be the first two objectives mentioned above, i.e. to increase acceptability of metering as a tool to ensure MSEB's accountability and to initiate the process of acceptance of the principle of "consumption linked payments".

The barriers to metering from consumers' side as well as from MSEB's side should be considered while deciding the policy on agricultural tariff. One of the legitimate concerns of consumers regarding metering relates to bad past-record of MSEB in terms of meter reading and billing as well as the difficulties (and even harassment) faced by metered consumers. Overcoming the apprehensions and fear in the minds of agricultural consumers on such issues is a prerequisite for enhancing consumers' acceptance of meters.

Another major barrier to meter-based tariff is apprehension in the minds of consumers over the increased payments and resultant impacts on the agricultural economy at family and regional level, especially impacts on livelihoods situation of agricultural families. While continuing with the emphasis on the principle of "consumption linked payments", agricultural consumers should be given adequate time

² The principle of "consumption linked payments" would require that, with increasing consumption, consumers' bill would increase, instead of staying steady or decreasing. However, this should not necessarily mean that all the consumers should start paying the entire cost of the energy they consume forthwith.

period to get an idea of what would be increase in their electricity bills and to make adjustments and alternative arrangements to suit the new tariff regime.

MSEB never tried to adopt a gradual approach of understanding consumers' apprehensions and working on them, which make the approach sustainable. Instead, MSEB, through its proposal, is now trying to achieve nearly 300% increase in tariff (for pumps above 10 Hp) in one step and without incorporating any mechanisms to protect consumers from implications of its own inefficiency and low quality of service.

To tackle the convoluted issue of the agricultural tariff, an appropriate strategy based on following principles should be evolved in transparent and <u>participatory</u> manner. There is an argument that white-collared sections of city-based populations, who make most of the policy and judicial decisions, often fail to grasp the rural ground-reality, especially the reality surrounding rural livelihoods. In view of this argument, a participatory process involving a range of rural and agricultural sections of population would not only be a prudent approach but would also provide more sustainable results.

- 1. Especially for the agricultural consumers (who often experience very bad service quality, in terms of power quality and billing services), the tariff increase should be linked and paced with improving service quality.
- 2. Agricultural consumers should be given a fair idea of the volume of likely payments as well as adequate time for making adjustments and alternative arrangements to bear the increased tariff.
- 3. Instead of seeing it as a tool for increasing tariff, metering should be viewed with the following two objectives, at least in the transitional period: (a) a tool for ensuring accountability and (b) a tool for increasing awareness and acceptability of the principle "consumption linked payment".
- 4. Arriving at a widely acceptable combination of tariff, cross-subsidy, and state's subsidy for different sections of agricultural consumers from different regions in a pre-determined period of say 3 to 5 years.
- 5. In order to increase the efficiency of electricity use by agricultural consumers, in addition to the price signal, integrated and systematic efforts would be needed. In other words, move towards cost-based tariff can be easier and sustainable, if accompanied by innovative systematic measures for improving end-use efficiency.

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Annexure V

A Note on Energy Audit

It is well accepted that in order to meet the growing demand for electricity and to provide better quality of service, utilities like MSEB should generate adequate revenues and make necessary investments. But, at the same time, it is essential to ensure that consumers are not forced to bear the burden of inefficient operations. As mentioned in Annexure II, one of the major aspects of grotesques inefficiency in MSEB's operations relates to MSEB's failure to properly account for the quantum of energy generated and energy consumed by different consumers or energy consumed in different regions.

As indicated in Annexure II, there is enough evidence to suggest that the actual T&D losses (commercial as well as technical) are substantially higher. The burden of these losses, which may be as high as Rs. 2 to 4 crores per day, has to be borne by paying consumers, in order to ensure that MSEB generates adequate surplus.

Though, the ideal way to obtain correct assessment of energy consumed is to meter consumption of all consumers, it is understandable that over 22 lakh consumers without meters cannot be metered in a short span of one to two years. But, considering the losses involved, it is necessary to install, on urgent basis, an effective system for proper accounting of energy at least at the level of distribution transformers.

As demonstrated in Annexure II, MSEB has avoided undertaking complete and proper energy audit even in a limited context of urban energy audits. Often, flimsy technical excuses such as different billing cycles, poor quality of meters, double circuit systems (back-up supply from separate feeders) are posed as great technical difficulties by MSEB in order to avoid effective and proper energy audit systems. There are feasible ways and practical means to install and maintain an effective energy audit system even in the prevailing situation. Keeping in mind the unjustifiable and avoidable burden of crores of Rupees each day levied on MSEB's consumers, we urge the Commission not to allow MSEB to escape its basic duty by giving the excuse of implementation difficulties and to direct MSEB to implement an effective energy audit system at the earliest.

Considering the experience of Case 1 of 99, it is necessary that, before it comes up with the next tariff revision proposal, MSEB should be able to demonstrate the reasonability of claimed T&D losses, based on proper energy audit. MERC should prepare a time-bound schedule of benchmarks to monitor progress of MSEB's energy audit programme. It should also ensure that these benchmarks are adhered to by MSEB. These benchmarks as well as the compliance mechanisms and periodic reviews should be fully transparent. All the related information in these regards should be made public periodically, say, every three months. The first benchmark, for example, could be that, within the period of three months, MSEB institutes a system for compiling monthly energy received / sent out at all the '11 kV sub-stations', for compiling monthly energy audit of all urban centres, and for timely submission of reports of these exercises to MERC.

The next benchmark could be in terms of installing a working system of compiling monthly reports of energy received, energy sent-out, and energy billed at division level. MSEB should be asked to meet this benchmark in the next six months.

MERC may further evolve and fine-tune such benchmarks based on inputs from experts, with the objective that within a year, the energy audit of complete system (from generation to low tension distribution level) could be carried out in a reliable manner.

The Commission can constitute an expert committee consisting of independent experts and civil society representatives to monitor the progress of the benchmarks.

The tariff judgement of MERC should include conditions related to this aspect, including the benchmarks and full transparency of review process.

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