BEFORE MAHARASHTRA ELECTRICITY REGULATORY COMMISSION, MUMBAI

Objections/Comments/Suggestions on

ARR and Tariff Revision application by Reliance Energy Limited for 2005-06 and 2006-07

By

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9th June 2006

1. Background and Introduction

1.1. We consider ARR and tariff determination process for FY 2007 to be extremely critical for two reasons - (i) It puts MERC Tariff Regulations, 2005 on test for the very first time and (ii) this process would be a valuable input while going towards first Multi Year Tariff (MYT) framework in the state from FY 2007-08.

1.2. Reliance Energy Limited (REL) filed its Annual Revenue Requirement (ARR) and Tariff Revision application for 2006-07 on 24th February 2006. The Commission held two technical validation sessions on this issue for identifying critical data gaps in the ARR application on 5th April and 17th April 2006. Prayas participated in both the sessions and pointed out many data inconsistencies and requested some additional data to facilitate further analysis of the ARR. In response to the public notice dated 19th May 2006, we are submitting our comments on REL's ARR application. Our comments mainly deal with the important techno-economic issues and some gaps and inconsistencies we observed in the ARR application.

2. Major cost components of REL ARR 2006-07 and Tariff Hike

2.1. Figure 1 shows the break up of REL ARR for 2006-07 into major components without the cost of power purchase from TPC, as TPC tariff is separately determined by MERC.

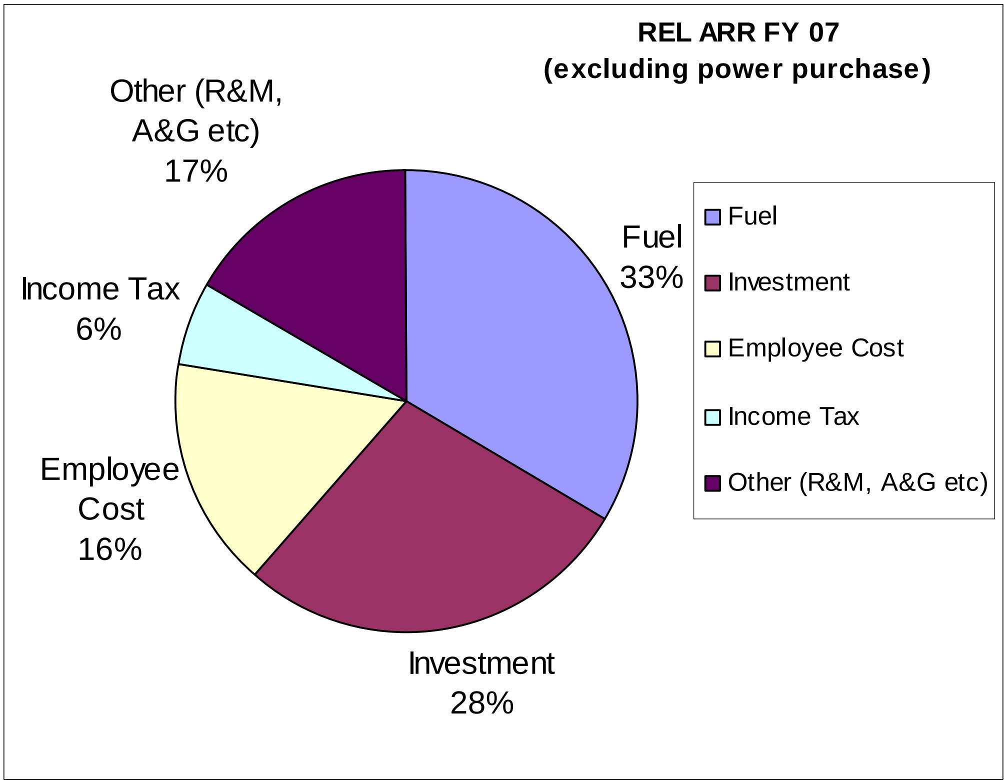

Figure 1: Cost components of REL ARR for FY 06-07

2.2. Investment related costs in the above figure include costs that depend on the capital investment done by the licensee. These include depreciation, interest on long-term debts and Return on Equity (RoE). Income Tax (IT), though shown separately, depends on the profits of the licensee and hence in turn is linked to investments. It is clear from the figure that,

(i) Investment Related Costs (Depreciation + RoE + Interest + Income Tax) = 34% of the REL ARR and

(ii) Fuel Cost and Employee Cost are 33% and 16% respectively.

In short, Investment, Fuel and Employee Costs together constitute for 83% of the REL ARR. Hence, we should carefully evaluate the reasonableness of these three cost components in detail.

2.3. Total (integrated) ARR of REL to be recovered from retail tariff in FY 2006-07 is Rs. 3003 Cr (without accounting for RPO cost of about 54 Cr). The following table indicates the actual ARRs and sales for 2004-05, 2005-06 and projections for 2006-07.

Table 2: Tariff hike proposed by REL (without RPO and TPC hike)

	04-05 (Actual)	**05-06** (Actual)	**06-07** (Existing)	**06-07** **(Proposed)**
Total sales (MU)	6502	6895	7248	7248
Total ARR recovered from retail tariff (Rs Cr)	2236	2585	2709	3003
Average realization (Rs/kWh)	3.44	3.75	**3.74**	**4.14**
Tariff increase in FY 06-07 (Rs Cr)				**294**

As it is clear from the table that the net gap to be recovered through tariff increase in FY 07 is 294 Cr. At present, average realization from REL consumers stands at Rs 3.74/kWh, which is proposed to go as high as Rs 4.14/kWh. In other words, net increase in tariff to be recovered from REL consumers is **40 paise/kWh** or **11%**. However, it must be noted that this tariff hike is without considering tariff hike proposed by TPC. If tariff increase proposed by TPC is also factored[1], required average realization from REL consumers goes as high as Rs 4.85/kWh, making total tariff hike of **111 paise/kWh** or **30%**.

3. Uniform retail tariff across Mumbai

3.1. REL has asked for uniform retail tariff across licensees in Mumbai. It has given analogy of Water Charges, Transportation charges, Electricity Duty and other taxes that are uniform across the city. Therefore, REL argues that electricity tariffs should also be same and it would be improper to charge different rates to consumers only based on their geographical location.

3.2. However, while comparing other uniform taxes to electricity tariffs, we should also consider that regardless of geographical locations of citizens, implementation agencies for tax collection, transportation services etc are the same for all. Moreover, REL's argument of uniform tariffs could be stretched to any limits. For example, Electricity Duty and other taxes imposed by the State Government are uniform across the state! It also raises another issue of what treatment should we give to MSEDCL area in Mumbai (Mulund, Bhandup, Kalyan, Navi Mumbai).

3.3. Uniform tariff across licensees also reduces accountability of licensees for incurring high costs. Also this goes against the said basic tenants of Electricity

[1] Source: ARR filing of TPC for FY 06-07

Act 2003, which emphasizes fundamentally different industry structure involving competition and unbundling. Therefore, we have strong reservations against the REL's proposal for uniform retail tariff and request the Commission not to approve it. When the MERC has already introduced differential treatment to several groups of consumers (based on factors such as AT&C losses, consumption norm for un-metered agricultural consumers, reliability) there is no rationale for adopting different approach while fixing tariff of Mumbai consumers. We request MERC to adopt a consistent approach and not to fix uniform tariff across different utilities.

4. Capital Expenditure

4.1. It is well known that under "Cost-plus" regime, utilities tend to over invest and maximize their profits, which are linked to capital investment. To maintain overall economy, minimize cost, and protect public interest, proper control on investment is key to regulate utilities under the cost-plus regulation. Hence, the Commission has to take very cautious approach while approving capital expenditure and passing on its costs to consumers - to be paid in future years.

4.2. In the year 06-07, REL has proposed a total Capital Expenditure of Rs 877 Cr. It has already invested about Rs 384 Cr. during FY 05-06 i.e. REL is adding assets worth Rs 1261 Cr in two years FY06 and FY07. Out of the total investments of 1261 Cr, about 1050 Cr are being invested in the Distribution network in 2 years whose net fixed assets as on 31st March 2005 are 934 Cr. As we have already seen that the capital investment related cost of REL form a major share of its ARR, the Commission needs to do a detailed scrutiny of the capital investment claims of REL. Figure 2 shows the trends of investment in by REL over last 9 years. Surprisingly, capital expenditure by REL shows an extremely sharp increase over these 2 years – FY05-06 and FY06-07.

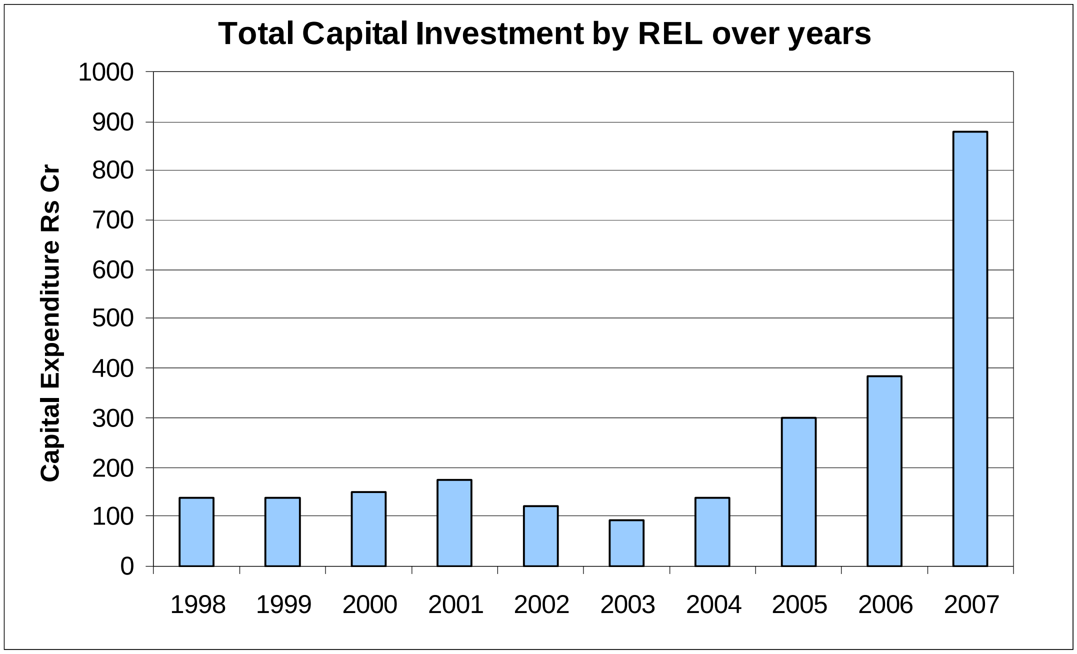

Figure 2 : Capital Investment by REL over years

4.3. REL has justified the CapEx required mainly on three grounds namely improvement in system reliability, reduction in system losses and system flexibility to meet load growth. However, it has not quantified any of the above benefits except reduction in losses. REL proposes to marginally reduce the Distribution loss of 12.1% by 0.1% in FY06-07. Following table indicates the capital investment (CapEx) by REL vis-à-vis total input MUs and actual maximum demand in MVA on the REL system.

Table : Capital investment of REL over years

	FY 03	**FY 04**	**FY 05**	**FY 06**	**FY 07**
Capital investment in the year (Rs Cr)	92	137	299	384	877
Total energy input to REL system (MU)		7156	7457	7923	8351
Actual Maximum Demand (MVA)	1226	1274	1272	1331	1398
CapEx (Rs /input kWh)		0.19	0.40	0.48	***1.05***
CapEx (Rs Cr/maximum MVA)	0.08	0.11	0.23	0.29	***0.63***

It is clear from the table that CapEx shows disproportionately sharper growth than the growth of input MUs and maximum demand. Therefore, REL's projections of demand growth and CapEx need be critically evaluated.

4.4. Though REL has described the investment schemes individually, it does not present even preliminary quantification of benefits of the schemes. Moreover, REL has not mentioned which schemes were initiated in earlier years and have spilled over to FY06-07 and which schemes are proposed newly in FY 06-07, making them difficult to track. Therefore, we request the Commission to perform a detailed scrutiny and cost-benefit analysis of individual CapEx schemes and should approve the schemes only if they stand the tests of prudence and usefulness.

4.5. In line with the Guidelines for Capital Expenditure dated 9th February 2005, any capital investment scheme requiring expenditure above 10 Cr. should be approved only on the basis of detailed scrutiny of DPR and specific approval by the commission. Considering the nature of capital investment plans and the difficulty in assessing individual schemes one by one, at this stage, we request the commission to approve only critical schemes (relative to safety etc) and REL should be directed to submit a 3 year rolling plan along-with DPRs of all schemes above Rs. 10 Cr. Such an approach will enable the commission to have a long-term comprehensive view about the investments proposed by REL.

4.6. Coming to the CapEx already incurred by REL, compliance to in-principle clearance issued by the Commission is essential. As stipulated in the in-principle clearance of CapEx schemes by MERC, before allowing tariff impact on account of CapEX schemes, it is essential to validate that said schemes have been completed within the scope and other parameters mentioned in the in-principle approval by MERC and that the said benefits are realized.

4.7. Here, we wish to bring to the notice of the Commission that para 3, 4 and 5 of the typical in-principle clearances issued for CapEx schemes require REL to submit full details regarding implementation of CapEx schemes to MERC and the same should also be included in the ARR petition. Unfortunately, even though Prayas had raised these issues through our letter dated 14th April 2006, REL has not provided the required details as part of the ARR petition. It will be inappropriate to pass on the cost of these CapEx schemes on to consumers without such validation.

4.8. Examples of proposed CapEx with questionable appropriateness

REL has not quantified the likely benefits to be derived from any of the CapEX schemes. In this context, we present an indicative list of proposed CapEx schemes, whose appropriateness should be scrutinized in detail.

4.8.1. Receiving Stations

REL has proposed to invest Rs 122 Cr for building receiving stations. Average investment on receiving station by REL for last 5 years (2000-01 to 2005-06) is Rs 23 Cr. One wonders why suddenly there is a sharp increase in this investment. REL claims that maximum demand in the next 5 yeas is going to increase at a CAGR of 5%. Now, table below indicates the actual maximum demand recorded for the period between 2000-01 and 2005-06.

Table 2: Actual maximum demand on REL system

Year	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	5 year CAGR
Actual Maximum Demand of REL (MVA)	1199	1202	1226	1274	1272	1331	2.1%

The table clearly shows a CAGR of 2.1% for last 5 years. Therefore, the ground on which REL has based its assumption of 5% growth is not clear. Moreover, most of the network related capital investments such as HT and LT cables, Distribution transformers, land and buildings for receiving stations etc also depend on realistic estimate of system growth. Therefore, we request the Commission to limit investment on receiving stations and other network related assets based on realistic growth estimates and rational system flexibility considerations.

4.8.2. Meters and instruments

REL has proposed a total CapEx of Rs 169 Cr in 2 years (FY 05-06 and 06-07) on procurement of meters and instruments. It is planning to procure new meters for prospective consumers and replace existing electromechanical meters but have not given any further details. According to the in-principle clearance for the Metering and Instruments CapEx dated 10th November 2005, the Commission had approved only Rs 74 Cr. Therefore, we wonder how the proposed scheme for meter procurement fits in the framework of in-principle clearance. REL should submit details of the meters procured for every tariff category such as

(i) Number and cost of meters procured for new connections and
(ii) Number and cost of procured meters for replacement of old meters.

We would also like to know whether REL recovers meter cost / security deposit from new consumers. Further, this investment also needs to be justified by analyzing the life of existing meters and REL needs to clearly specify the criteria adopted for meter replacement.

4.8.3. Service lines

REL intends to invest about Rs 68 Cr in laying service lines for giving connection to new LT consumers. However, MERC Supply Code regulations section 3.3.2 allows licensee to recover the costs of laying service lines from distribution mains to consumer's premises.

Quote

"Where the provision of supply to an applicant entails works of laying of service line from the distributing main to the applicant's premises, the Distribution Licensee shall be authorized to recover all expenses reasonably incurred on such works from the applicant, based on the schedule of charges approved by the Commission under Regulation 18."

Unquote

We would like to know whether REL recovers the service line charges from new consumers. If yes, it should explain why does it require a capital investment of such a large quantum.

4.8.4. 11kV and LT cables

REL has planned to invest about 144 Cr in 11kV and LT cables in two years FY05-06 and FY06-07. Assuming normative costs for these items, capital investments proposed by REL translate to addition of about 5000 circuit km of 11kV line and about 2000 circuit km of LT mains in just two years! These claims must be validated against the existing infrastructure of REL. During one of the technical validation sessions Prayas had demanded the preliminary details of assets of REL (such as voltage wise circuit km of lines, number of DTs, voltage wise number of towers and poles etc). However, this data has not been provided by REL and hence we could not verify the reasonability of proposed investments under this head. We request the Commission to direct REL to submit their asset details so as to facilitate evaluation of the proposed capital investment.

4.8.5. Distribution Transformers

Capital investment of about 82 Cr is planned for procuring new Distribution Transformers in FY06 and FY07. This leads to addition of about 8000 new DTs in the license area in two years!

4.8.6. Mobile DG sets and distribution transformers

To improve supply reliability REL has planned to procure mobile Diesel Generator (DG) sets and distribution transformers. However, in the Disaster Management Plant for Mumbai, REL has already made provisions for such mobile DG sets, substations etc. It is prudent to use the same sets for improving supply reliability during normal operations. Therefore, investment on this account is not required.

We understand the importance of capital investment for improving the system reliability and providing new infrastructure. However, while operating in the "Cost Plus" regime, where all returns are linked with the investment, utilities tend to over invest. Therefore, critical evaluation and monitoring of capital investments by the Commission is extremely important to avoid "Gold-plating". Therefore, it is our sincere submission that the Commission should approve the capital investments only if they stand the tests of "usefulness" and prudence".

5. Generation related issues

Total generation ARR to be recovered through retail tariff in FY 06-07 is about 828 Cr. Out of this, about 590 Cr (70%) are fuel costs and the rest 238 Cr being on account of Depreciation, Employee Costs, R&M expenses etc. Therefore, detailed evaluation of fuel charges is necessary. Fuel charges and hence variable (energy) cost of any generation plant depends on a number of factors such as cost and type of fuel, plant efficiency, auxiliary consumption, transit loss etc. Following are our concerns regarding fuel charges proposed by REL.

5.1. Coal blending and calorific value

Calorific value and coal cost depends on the quality of coal used at the plant i.e. blending ration of the coal. Since FY 05-06, REL has stopped using raw domestic coal for power generation at DTPS. Instead, it uses a mixture of washed and imported coal with a blending ratio of 80:20 because coal quality of washed coal is better than raw domestic coal. Surprisingly, calorific value of the washed coal used by REL has been decreasing rapidly. It reduced from 4188 kCal/kg in FY 05 to 3900 kCal/kg in FY07. Now, if we consider two cases for coal blending:

(i) Case 1 - Indian washed coal and imported coal blended in the ratio of 80:20 (REL case)

(ii) Case 2 – Indian raw coal and imported coal blended in the ratio of 65:35 so as to get the same calorific value as Case 1(REL).

The following table gives a comparative economics of the two cases for coal blending

Table 3: Comparative costing of different coal blends

Type of Coal	Price Rs/Ton	Calorific Value kCal/kg	Rs/1000 kCal	Case 1 (REL)	Case 2
Indian Raw	2020	3600	0.56		65%
Indian Washed	2383	3900	0.61	80%	
Imported	2858	5200	0.55	20%	35%
Calorific value of the coal basket kCal/kg				4160	4160
Total charges for the coal basket Rs/MT				2478	2314

Coal use for FY 07 (Mn Ton/yr)	2.46
Saving in coal cost (Rs/Ton)	165
Saving in fuel charges (Rs Cr/yr)	**41**

It is clear from the table that using case 2 (Indian raw coal and imported coal in the ratio of 65:35) would yield the same calorific value of the coal basket but result in net saving of about **41 Cr** every year. Therefore we request the Commission to disallow the excess fuel costs on account of imprudent fuel choice and reduce the ARR accordingly.

5.2. Transit loss

REL has considered the transit loss in coal of 2.5%. However, METC tariff regulations 2005 allow a transit loss of only 0.8%. Such incremental transit loss, results in an additional burden of Rs **10 Cr** every year on REL consumers. Therefore, we request the Commission to disallow the cost of excessive transit loss.

5.3. Generation plant (DTPS) performance

Performance of generation plant depends on the condition of the equipments and quality of fuel being used at the plant. The following table shows performance of Dahanu generation plant (DTPS) of REL over years.

Parameter	FY 05	FY 06	FY 07
Heat rate (kCal/kWh)	2272	2286	2315

Auxiliary consumption (%)	7.5%	7.6%	8.5%
R&M expense (Rs Cr)	21	23	34
CapEx (Rs Cr, excluding FGD)	8	18	62
Coal mix	Indian raw, washed and imported	washed and imported	washed and imported

It is seen from the table that performance of the generation plant is degrading over years despite significant increase in R&M expenses and Capital Investment. Moreover, use of Indian raw coal at DTPS is completely replaced by washed coal, which implies improvement in coal quality. REL, in its reply to the same query raised by Prayas during technical validation, has stated that such degradation is mainly on account of the plant being more than 10 years old. However, one wonders that for a well maintained and invested coal plant like DTPS, which has a useful life of at least 25 years, why the performance has started deteriorating only after 10 years.

Therefore, we request the Commission to look into degradation of DTPS performance carefully.

6. Determination of Regulatory Equity and Reasonable Return

6.1. While operating in the "Cost-plus" regime, it is extremely critical to estimate the Capital Base or Equity of the firm accurately. This is because all profits (Return on Equity) are linked to the capital base of the firm. REL has estimated its regulatory equity capital as on 1st April 2004 as 1337 Cr and has based its returns on this amount. However, the Commission needs to validate the opening equity estimation of REL, as the proposed equity structure is not in conformity with MERC Tariff Regulations and MERC Tariff Order principles.

6.2. REL has claimed a Reasonable Return of Rs 188 Cr for FY 06 (integrated for all functions). However, its detailed working has not been furnished in the ARR. REL should submit detailed working of reasonable return for FY 06 and it has be validated by the Commission whether it is in accordance with MERC tariff order principles.

7. Employee Costs

REL has proposed that employee expenses in FY 06-07 be increased by about 30% over previous year owing to a wage hike according to the agreements with Unions in 2002-03. Actual employee expenses of REL (integrated) in FY 04-05 were 201 Cr, which are about 50% higher than that approved by the Commission (136 Cr). Following table estimates the employee costs in Rs/kWh and Rs/man-month of REL over years.

Table 5: Employee costs of REL over years

	2004-05 (MERC)	**2004-05 (Actual)**	**2005-06 (Actual)**	**2006-07 (Projected)**
Employee Expense Rs Cr	136	201	201	283
Number of employees	NA	5,281	5,171	5,067
Employee expense as paise/kWh sold	21	31	29	***39***
Employee expense as Rs/man-month	NA	31,742	32,408	***46,564***

It is clear from the above table that MERC had approved only 136 Cr as employee expense for FY 05 (including a component for VRS of 10 Cr). However, actual employee expenses incurred by REL in FY 05 are 201 Cr i.e. an increase of 50% over MERC approved value. Moreover, it has not given any reasons for such a heavy increase. A detailed explanation has to be given by REL and should be scrutinized in detail by the Commission.

REL has proposed a 30% salary hike in FY 07. It has claimed that an agreement has been signed with Unions for such salary revision. However, just a wage revision agreement cannot form the basis for increase of employee expenses rather, a more rational approach needs be considered. For example, the Commission may benchmark the employee productivity in Rs/kWh and it may be increased by a suitable index say CPI or RPI. Moreover, it can be seen from the table that, if we consider average employee cost in Rs/man-month, the proposed hike in FY 07 is not 30% but goes as high as 50%.

Therefore, the Commission should adopt a rational approach for determining employee expenses and corresponding hike in FY 07 and scrutinize the actual employee expenses in FY 05 and FY 06.

8. True-up for FY 04-05

Last tariff order for REL was passed by MERC for 2004-05. While working out the revenue to be recovered from retail tariffs, REL has considered the under recovery in 2005-06, however, it does not mention truing up of any over/under recovery in the year 2004-05. According to the ARR for FY 2006-07 submitted by the REL dated

24th February 2006, there are wide variations in REL's performance during FY 2004-05 as compared to the Commission's approval in its tariff order. For example, A&G expenses, employee expenses, bad debts, non-tariff income etc. Moreover, some components such as reasonable return, interest on working capital, depreciation etc should be reworked according to MERC Tariff Order FY 2005 principles. Also, there is discrepancy in the power purchase cost of REL in FY 04-05 and the revenue received by TPC[2] on the same account. Therefore, we request the Commission to evaluate the performance of REL in 2004-05 and consider it for true up in this tariff process.

9. True up for past Over recovery of FAC

According to MERC order dated 19th January 2005 regarding FAC charges of REL for July 2004, the Commission had not considered earlier over recovery of FAC of about Rs 38 Cr on 31st March 2004. In MERC order dated 13th April 2006 regarding FAC charges for October to December 2005, the Commission did not consider earlier over recovery of FAC and opined that such true up would be possible only after FAC for previous months is vetted. In the additional information submitted by REL, it has stated a total over recovery of 94 Cr at the end of 2004-05. With new tariff order for REL for FY 06-07, FAC would be equated to zero. So, previous over recovery of FAC should be considered for true up in this tariff process. Therefore we request the Commission to do a detailed vetting of FAC charges recovered by REL in FY 04-05 and 05-06 and reduce the ARR by an amount equivalent to net over recovery of FAC.

10. Miscellaneous issues

10.1. Accumulated depreciation for FY 06-07

While estimating depreciation expenses for FY 07, REL has used the rates as prescribed by MERC Tariff regulations. In the ARR, it has estimated depreciation for FY 06 by two methods – (i) According to Tariff Regulations and (ii) According to MERC Tariff Order principles. While calculating ARR for FY06, it has correctly included the depreciation figure according to MERC tariff order principles. But, while estimating the accumulated depreciation at the beginning of FY06-07, it has used the depreciation figure for FY 06 estimated according to new tariff regulations. As the depreciation estimated according to new tariff regulations is lower than that estimated according to MERC tariff order principles, this has resulted in underreporting of accumulated depreciation for FY07 and gives licensee an advantage for charging more depreciation than the asset worth.

[2] Source: ARR filings of TPC for FY 06-07

10.2. Income Tax

Actual income tax incurred by REL is lower than considered in the regulatory accounts for FY05 and FY 06. This is shown in the following table:

Sr No		2004-05	2005-06
1	Provision for Current Tax Rs Cr (Actual) (Ref: Annual Reports)	26	86
2	Provision for Income Tax (ARR) Rs Cr	82	74
3	Difference (2-1)	57	-12
4	**Total amount for true-up**		**45**

According to MERC Tariff Regulations section 76.2.3, the benefits of any income tax holiday, credit for unabsorbed depreciation should be considered while calculating the income tax liability for the licensee. Therefore, actual income tax paid by the licensee in FY 05 and FY 06 should be considered for true up and passed on to consumers by reducing ARR for FY07 by **45 Cr**.

11. Prayers

In light of the analysis presented above, we request the Commission:

11.1. Not to allow uniform retail tariff in Mumbai as it takes away accountability of the licensee for its performance.

11.2. To do detailed cost-benefit analysis of the proposed CapEx schemes and approve them only if they stand the tests of usefulness and prudence.

11.3. To take a comprehensive view about the whole CapEx issue and direct REL to submit a 3-year rollout plan for CapEx with DPRs for all schemes above 10 Cr. Only the critical schemes (relating to safety etc) may be approved now.

11.4. To scrutinize the Capital Expenditure already incurred by REL in detail and validate that said schemes have been completed within the scope and other parameters mentioned in the in-principle approval by MERC and that the said benefits are realized. Unless such validation is done, no cost relating to capital expenditure after FY 04-05 tariff order should be passed on to consumers.

11.5. To do a detailed scrutiny of the fuel charges and direct REL to change the coal blending ratio so as to minimize the fuel costs

11.6. Not to approve transit loss in excess of normative transit loss according to MERC Tariff regulations

11.7. Analyze the deteriorating performance of DTPS despite heavy R&M expenses, Capital Investment and better coal blending ratio.

11.8. Restate the regulatory equity determined by REL in conformity with MERC Tariff regulations and previous Tariff order principles.

11.9. Scrutinize the increased employee costs and set a rational benchmark for employee cost.

11.10. Evaluate the performance of REL in FY 04-05 and consider the ARR for FY 05 for true-up

11.11. To consider past over recovery of FAC for truing up in ARR for FY06-07

11.12. Consider actual income tax paid by the licensee during FY 05 and FY 06 and consider the difference for truing up in ARR for FY 06-07

11.13. Allow us to make a presentation during public hearing dated 12th June 2006, and to make additional comments/suggestions regarding REL ARR FY06-07, if any.

11.14. In the interest of transparency, we urge MERC to provide detailed calculations and analysis carried out during this tariff revision process in the tariff order and to make soft copies of the same (spreadsheet version)available on it's website (including formulae).

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