BEFORE THE ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION * HYDERABAD

1.1 On 18th January 2001 a 'PUBLIC NOTICE' was published in some news papers calling for comments from the public on APTRANSCO and DISCOMs' proposal for revision of tariff for the financial year 2001-02 to be placed before Andhra Pradesh Electricity Regulatory Commission (APERC) on or before 17th February 2001. The tariff documents are made available to the public only from 22nd January 2001. We are of the opinion that the time allowed for the public to come up with comments is too short to make it meaningful and productive. Eleven volumes of documents are supposed to be examined within a short span of 26 days, subject to the condition that the concerned individuals or organisations are able to obtain these documents in time. This is highly unjustified when the Licensees, who have at their disposal enormous men and material resources including consultant services obtained at exorbitant price, are allowed to submit their proposals well beyond the legally allowed time. The Act as well as the Guidelines stipulated by the Commission the direct the Licensees to submit their Annual Revenue Requirement (ARR) and Filing of Proposed Tariff (FPT) by 31st December 2000. In the present case while ARR was submitted before the due date, FPT was submitted only on 16th January 2001. During the past year also the Licensee had done the same. We appeal to the Commission not to allow the Licensees to violate the Act and Guidelines of the Commission. In order to make people's participation meaningful we request the Commission to give sufficient advance notice before holding the Public Hearings and hold them at all the headquarters of the DISCOMs.

1.2 In order to be accessible to the ordinary people a consolidated summary of the proposals as was done during the last year should have been made available to the public at reasonable cost. At present these documents are priced out of the reach of the public. As a result very few might have bought these documents and to that extent defeating the very purpose of public intervention. It is to be seen that during the coming days before the Public Hearings and during the coming years the information is accessible to the public in both money and material terms.

1.3 Even though the documents are bulky the information contained in them have serious gaps. Even the information that is available during the current year proposals is not made available during the ensuing year proposals. For example in the case of current year information on cost to serve was provided, but in the case of ensuing year the same is with held in the name of non-availability. Similar is the case with information on number of consumers category wise and arrears due to the Licensees. Information gaps also abound in all the documents. For example, the table/form 1.1g on Indian Loans and Debentures for previous year interest amount is not shown. For all the years interest paid on loans from the World Bank and OECF are not mentioned though loan amounts are mentioned. Besides this, they also ask for waivers on providing information as needed by the guidelines for filing ARR and FPT. In the absence of adequate information it is not possible to assess the proposals properly. Through this submission we request the Commission to see to it that all these information is available to the public well before the Public Hearings.

2.1 In the Tariff Proposals submitted to the APERC, APTRANSCO and its four distribution subsidiaries/ DISCOMs proposed to alter the tariffs to be paid by the consumers in the above 50 U slabs from the domestic sector. In the place of four slabs in the domestic sector six slabs are sought to be created. While domestic consumers in the slabs of 301-400 and above 400 units will be paying more, consumers in the slabs of 51-100 and 101-200 will be paying less than previously if the proposed change is accepted by the Commission. APTRANSCO and DISCOMs claim that as a result of restructuring of the slabs, the Licensees will be incurring loss to the extent of Rs 40 crores.

2.2 In the FPT the licensee stated that the ARR for the ensuing year 2001-02 will be Rs 8966.91 crore. At the current rate of tariffs they will be able to mobilise Rs 6274.49 crore revenue. Thus leaving a gap of Rs 2692.42 crore which need to be mobilised through tariff hike. But the licensee did not propose any hike in tariff except for the two upper slabs falling under domestic consumers. This implies that they plan to mobilise these revenues with out imposing any burden on the consumers. This also implies that the gap will be filled by either efficiency improvements or subsidy from the government or both. The same is made clear when the distribution licensee stated that the gap would be filled by efficiency improvement and subsidy from the state government. The APCPDL in its FPT on page No. 11 stated thus: "APCPDCL expects that the gap between the revenue requirement for FY 2002 as approved by the Hon'ble Commission and the revenues from the proposed tariffs, if any, will be met through efficiency improvements and through external subsidies made by the GoAP". The other DISCOMs also made identical statements. The DISCOMs would not have stated this without the consent from the government as the tariff proposals were filed only after the approval given by the State Government.

2.3 Though this is stated in an unambiguous terms, without any scope for doubt, actual quantum of subsidy committed by the state government and the level of efficiency improvement to be achieved by the Licensees is not stated. In the press reports while in some cases Rs. 500 crore is mentioned as accruing through efficiency improvement, in some reports it is mentioned as Rs. 1450 crore. In the former case subsidy from the government should be Rs 2,192 crore, and in the later case the subsidy should be Rs. 1,242 crore. Without a clear indication from the state government on the quantum of subsidy this entire process of public consultations would be meaningless.

2.4 But the last year's experience cautions us to be aware of the GoAP's manipulations. Last year also APTRANSCO through the documents placed before Commission claimed that the state government would provide a subsidy of Rs 2100 crore. But after that the state government went back on its commitment and reduced its commitment to Rs 1345 crore only that forced the Regulatory Commission to increase power tariff by 20 percent. Later in the face of popular opposition it increased the subsidy to Rs 1626 crore, bringing tariff raise to 15 percent in keeping with the World Bank conditionalities.

2.5 As there is no clear commitment from the GoAP on the subsidy to be provided by it this year also there is every possibility that the state government would go back on its commitment and pave the path for more hike in tariff, even while the people are in the euphoria that there would be almost no hike in tariff. While interacting with the Press on 21st December 2000 the Chairman of the Commission had indicated that there would be tariff hike for the next three years. One should keep in mind that according to the World Bank conditionalities during the year 2001-02 also electricity tariff should be hiked by 15 percent. Given the state government's behaviour which is more interested in keeping the promises made to the World Bank but not in keeping the promises made to the people of Andhra Pradesh, there is every danger that another hike of 15 percent will be imposed on the unsuspecting public. In this regard we request the Commission to see that the Licensees stand by their above commitment to not to hike tariff.

2.6 As this whole public consultation is being carried out on the basis of proposed tariff and the commitment of the Licensees to fill the gap with efficiency improvement and external subsidy, if there is deviation on any ground ERC should conduct hearings afresh.

AGRICULTURE

3.1 In the ARR filing for the year 2001-02 the Licensees claimed that during the current year power consumption in the agriculture sector stood at 10860 MU as against 9815 MU approved by the Commission and the same would be 10500 MU for the ensuing year. The Licensees did not scientifically explain how they have arrived at these figures. In the case of current year they have just added up the agriculture consumption claimed by the respective distribution companies. We submit that the estimate of agricultural consumption given in the ARR for 2001-02 is very high. We are apprehensive that these inflated figures attributed to the agriculture sector have serious implications for financial health of the Licensees, which in turn will impact on the consumers of all sectors. These inflated figures will lead to purchase of more than required quantum of power. The data provided in the present ARR and FPT itself shows that the actual consumption could not be as high as claimed by the Licensees. *The sample survey conducted by the Licensee gives a reasonably reliable picture of the actual consumption by the agricultural sector. However, the Licensees have ignored these results and have shown inflated agricultural consumption. We are of the opinion that the actual consumption in the agriculture sector is about 4751 MU.* **(Detailed alternative calculations on agricultural consumption based on the data provided in the present filing are provided in the Annexure – I)** This implies that it is enough to allocate 4751 MU of power for consumption in the agriculture sector, and not 10500 MU as projected by the Licensees. This further implies that estimated power purchases need to be reduced by 5749x1/(1-.3228) =8489 MU. This leads to reduction in power purchase costs and hence in ARR to the extent of Rs1706 crore (8489MUxRs2.01perUnit/10). We request the Commission to consider the above while allocating power consumption to the agriculture sector.

EFFICENCY IMPROVEMENT

4.1 Through its FPT placed before the Commission for the current year APTRANSCO has promised to mobilise Rs 500 crore through efficiency improvement. Concerning this the Commission had through its tariff order directed the Licensee to file a detailed action plan on how it intends to achieve the projected efficiency gain of Rs 500 crore (para 2.8.1).

4.2 In its order the Commission had also stated that this efficiency gains is in addition to the 1.5% reduction in losses. Further the Commission had observed thus: " As already stated, the Commission believes that having proposed tariff based on this goal, the Licensee has made a commitment and can not request later any short fall to be recouped as a regulatory asset. Rather, within the regulatory framework we have adopted, the financial effect of any short fall is automatically reflected in a reduction of the Licensee's return", and " Indeed, we believe that there is scope for even higher efficiency gains than the committed Rs. 500 crore. These opportunities exist in merit order dispatch, Demand Side Management measures for subsidised consumers, strict implementation of regulated supply to agriculture, metering at all levels, strengthening of the internal processes to minimise commercial losses, and plug the loopholes in metering, billing and collection of revenues".

4.3 In the present filing the licensee did not indicate the amount accrued through the efficiency improvements. Contrary to that they have shown that they are incurring loss to the extent of Rs. 1073 crore. This loss figure may further go up as revenue collections during the month of January 2001 is below the expected level.

4.4 As a part of the efficiency improvement the billing was supposed to increase. The Commission in its order also directed the Licensee to achieve billing of atleast 48% before 31-3-2001 from the existing level of 41% (para. 2.4.2.2.). **The present filing shows that the billing in fact has declined to 40.15% for the year 2000-01.** Even for the ensuing year also they project the billing to be at 42.6%. This shows that instead of improvement, the efficiency has declined. Further, the Licensee has stated to the Legislative Assembly's House Committee Report that the billing has improved by 5.35% (p.5). This does not match with the figures filed before the Commission. Either one of it should be true. Or it may be that both are wrong! Licensee may have misled either the House Committee or the Commission or both! We request the Commission see that the true figures will come out.

4.5 The Commission had pointed out the strict implementation of the regulated supply to Agriculture as one of the avenues for achieving higher efficiency. The Commission has also directed the Licensee that if it becomes necessary to buy more power for supplying to agriculture (over and above the Licensee's submitted estimate of 9815MU), the Licensee shall obtain the specific permission of the Commission to do so and after duly tying up the funds for the required power purchases (para. 2.4.1). In the present tariff filing the Licensees have claimed that they would be supplying 10,860 MU of power to agriculture instead of the amount specified in the last filing. We are not aware whether the Licensees have obtained the Commission's permission for increasing the supply to the agriculture sector after tying up the funds as required by the Commission. The present

filing does not throw much light on this. If their increased supply of power to the agriculture sector is true, which we think is highly improbable, it is another indication of the Licensee's inefficiency.

4.6 As the Licensees failed to achieve efficiency improvement in agriculture consumption, the only alternative to obtain Rs 500 crore through efficiency improvement, power purchase is to be further reduced by 2941 MU (@Rs.1.70 per unit) , which implies that T&D losses have to come down to 28.9 percent. As the present filings show the T&D losses stood at 33.9 percent which is 5 percent above the required loss level. The Commission has considered the level of billing which then stood at 41% of the total energy purchased as the reliable figure in the place of almost nebulous T&D figure (para. 2.4.2.2.). And the present filing shows that the failure of Licensees to reduce T&D losses and achieve efficiency gains in agriculture consumption has resulted in further fall in billing to 40.15%.

4.7 Another indication of the inefficiency of the Licensee is that even when total power purchased is less than the envisaged figure total expenditure has increased. As approved by the Commission the Licensee is supposed to procure and distribute 42,628 MU of power with an annual revenue requirement of Rs. 7041.61 crore during the current year. But while the power purchased declined to 41,839 MU total revenue requirement increased to Rs. 7117.63 crore.

4.8 The increase in failure rate of the distribution transformers can also be taken as a measure of efficiency. During first and second quarters of 2000-01 the failures of distribution transformers stood at 14,315 and 18741 respectively. During the corresponding periods in the past year the figures stood at 13534 and 15554 respectively representing an increase of 5.77% and 20.49% during the current year. We request the Commission to look in this issue of procurement and maintenance of the distribution transformers seriously.

4.9 The Licensee corporations and their 100% owner the GoAP may be hesitant to raise tariff with the bitter experience during current year when they attempted a 15% hike even when there is ample scope to mobilise the same with the old tariffs as explained in our submission in the previous hearings on tariff hike. But the same bitter experience did not move this gigantic structure out of slumber. Hence a loss of more than Rs 1000 crore during the current year.

4.10 As there is no evidence of efficiency improvement in the functioning of the Licensee as promised by it we request the Commission to see that this failure to achieve efficiency is reflected in a reduction of the Licensees' return to the extent of the losses incurred.

4.11 In the present tariff filing the Licensees did not specify the amount that will be mobilised through efficiency improvement. In this regard we request the Commission to direct the Licensees to specify the amount that will be mobilised through efficiency

improvement and to give a detailed the plan for improvement in efficiency and how it will be achieved, and same to be made available to the public. Without a time plan that is open to the public it is difficult to monitor efficiency improvement. It will also be in fitness of things if monthly report on efficiency improvement is prepared and the same is made public.

LOSSES

5.1 The present FPT mentions that the utilities would be incurring a loss of Rs 1073 crore during the current year. The abstract circulated by the Licensees to the press shows the loss to be Rs. 1173.22 crore.

5.2 Besides this discrepancy the loss itself is shocking. Even after imposing a hefty 15% tariff hike the utilities are incurring a staggering amount of loss. This forces us to conclude that hiking tariff is not the solution to the problems faced by the utility. The cause for these must lay elsewhere but not in the low tariff as argued by the utilities, the State Government and their mentor the World Bank.

5.3 The reasons stated by the Licensee for the projected loss are:

- change in sale mix (Loss is Rs. 425 crore)
- change in power purchase mix (Loss is Rs. 218 crore)
- reduction in non-tariff income. (Loss is Rs. 158 crore)

Losses from these reasons add up to only Rs. 801 crore. The reasons for the loss of remaining amount i.e., Rs. 273 crore is not explained.

Inflated Agricultural Consumption

5.4 Even more than this loss the reasons mentioned by the utilities are surprising. One of the reasons attributed for this loss is upward revision in power consumption in the agriculture sector and downward revision in industrial consumption. While the agriculture sector is allotted 9815 MU they claim that it in fact consumed/expected to consume 10860 MU. Given the facts as explained in the Annexure – I, it is impossible for this sector to consume this much of power. This only shows that the Licensees are still dumping T&D losses on agriculture and holding it responsible for ills facing the power sector in the state. We request the Commission not to accept this as a cause for the losses incurred by the Utilities. Regarding the fall in industrial consumption one can say that it is the policy of government which allowed captive generation indiscriminately which led to the decline in industrial consumption. The recent policy of the government to further allow the setting up of captive units will be disastrous for the very survival of the Licensees.

Power Purchase Mix

5.5 Another reason attributed for this loss is that as a result of shortfall in hydro generation costly thermal power need to be purchased. But analysis of facts provided in the ARR & FPT show that this short fall is not a cause for the said loss.

5.5A) The shortfall in the hydro generation during the current year over the estimated generation is stated as 1510 MU. The Licensee stated that above shortfall is made good through purchases from other high cost sources.

Hydro generation for 2000-01 as approved in ARR	8537 MU
Current Estimation of Hydro generation for 2000-01	7027 MU
Anticipated deficit in Hydro generation	1510 MU
Anticipated substitution by APGENCO thermal units	1025 MU
Anticipated substitution by other units	485 MU
Cost of substitution by APGENCO thermal @98ps/kwh	Rs. 100 crore
Cost of substitution by other units @243ps/kwh	Rs. 118 crore
Total cost of substitution	Rs. 218 crore

The above data shows that APGENCO is supplying more than double the power compared to other sources at lesser cost. In fact this throws the light on the losses incurred by the licensees during the current year. It is the high cost power from the IPPs that is pushing the Licensee into red. It is high time to review the entire power purchase structures without which any amount of effort will not be able to save the Licensees.

5.5B) There is another dimension to this power purchase mix.

Total Power Purchase approved by the Commission for the current year	42628 MU
Revised Estimate of power purchase for the current year	41839 MU
Reduction in power purchase requirement	789 MU
Shortfall in Hydro generation	1510 MU
Actual shortfall in required hydro generation (1510 - 789)	**721 MU**

This shows that it is enough to procure 721 MU only but not 1510 MU consequent to shortfall in hydro generation.

Additional burden due to change in hydro to thermal:

721 MU x (0.98 – 0.05) = Rs. 67.05 crore.

The above calculation shows that the additional burden because of the power purchase mix shall amount to only Rs. 67.05 crore but not Rs. 218 crore as claimed by the Licensee.

5.5C) The Licensee has stated that they are entering into an agreement with Punjab State Electricity Board to purchase 3 MU electricity per day for three months ending March 31, 2001 at the rate of Rs. 3.00 per unit (ARR of APTRANSCO, p.77). About 300 MU are going to be purchased by the end of FY 2001. This cost is included in the revised estimate of power purchase for FY 2001. As detailed in **5.5B)**, the total additional thermal generation from APGENCO projected by the Licensee is 1025 MU out of which only 721 MU will be enough to compensate the shortfall in hydro generation. Another 304 MU are available from APGENCO at the rate of Rs. 0.98 per kwh. Hence there is no need for the Licensee to purchase high cost power from PSEB.

As a result of this the savings for the Licensee are: (3 – 0.98) x 300/10 = Rs. 60.6 crore.

5.5D) Additional burden from Power Purchase Mix: Rs. 67.05 crore
Savings from not buying from PSEB: Rs. 60.60 crore
Net additional burden from Power Purchase Mix: Rs. 6.35 crore.

Hence, the additional burden from change in power purchase mix resultant from shortfall in hydro generation is only Rs. 6.35 crore but not Rs. 218 crore as claimed by the Licensee.

Non-tariff Income

5.6 According to the Licensee the loss resulting from decline in non-tariff income for the current year from Rs. 457 crore to Rs. 299 crore is Rs. 158 crore. Surcharge is one of the important components in non-tariff income. Licensee has obtained permission from the Commission for the waiver of surcharge up to January 31, 2001 for faster recovery of arrears. This has resulted in fall in non-tariff income. It is worth noting that this is the lowest non-tariff income collected by the licensee in the last several years. This reflects the failure of the licensee in collecting the arrears and surcharge in due course. It is for the Commission to examine whether the amount of surcharge foregone has been compensated by substantial improvement in collection of arrears. It is also to be seen that this waiver will not become a precedent for the coming years. But it appears to be so as we look at the ARRs of DISCOMs. For example the CPDC did not allocate any amount towards this account for the ensuing year also.

5.7 The above examination of the reasons attributed by the Licensees for the loss show that they are hardly convincing, and need to be re-examined.

ARREARS

6.1 Arrears are posing a severe problem to the finances of the Licensees. It appears that the Licensees are unable to recover arrears from the consumers. Arrears will have implication on the finances as the Licensee is resorting to borrowings for working capital. Efficient bill collection and reduction of arrears will do away with this avoidable burden. The present tariff filing provides figures for the financial year 1999-2000. For this year total arrears stood at Rs. 1229.82 crore. The provision for bad debts and loans for working capital for the ensuing year show that there is not much improvement in the collection of arrears. The following table shows the figures for the year 1999-2000:

Category	Arrears in Crore Rs. For all the DISCOMs
Domestic	347.11
Commercial	81.68
Industrial	403.74
Cottage Industries	0.98
Agriculture	283.62
Public Lighting	69.39

Railway Traction	0.54
Colony Consumption	1.69
Rescos	29.40
General Purpose	11.08
Temporary	0.59
Total	1229.82

6.2 Arrears from the government (state government departments/undertakings + central government departments/undertakings + local bodies + Rescos) amount to Rs. 177.88 crore.

6.3 Arrears from the HT industrial consumers are mounting. There are nearly 4000 HT industrial consumers. These consumers account for nearly one third of the arrears. According to the AP Legislative Assembly's House Committee Report (p.88) also HT industrial arrears account for one third of the accumulated arrears. If we assume that 20 percent of the HT consumers are defaulters the average arrears from each defaulter amounts to Rs. 50 lakhs. There is room for arrears in the case of domestic consumers as they are spread all over and their number is high, and this number and spread may pose some problems for collection. It is not the case with the HT industrial consumers. Their numbers is small and are concentrated in a few locations. It would not have posed a big problem if the Licensees have made sincere attempts to collect these arrears. In this regard we request the Commission to direct the Licensees to publish the list of all HT industrial defaulters and top 5000 defaulters from other categories of consumers. It is noteworthy that the Maharastra Electricity Regulatory Commission has directed the Licensee to publish the list of top 1000 defaulters in the newspapers. We hope that APERC will emulate this progressive measure.

6.4 Related to this the number in the Disconnection list and Exceptionals list is increasing. By February 2000 the number of services on D list stood at more than 31 lakhs and in the case of Exceptionals at more than 47 lakhs out 1.13 crore consumers. There is every indication that these numbers should have increased further as percentage of billing has declined from 41% to 40.1% in the last one year. Increase in numbers under D list and Exceptionals might have contributed to reduction in billing percentage and decline in revenues. More over most of these Exceptionals are in domestic category, not disconnecting these services will lead to increase in consumption without corresponding increase in revenues. The latest estimates for domestic consumption for the year 2001-02 stand at 6815 MU compared to consumption of 6352 MU for the current year. As almost 50% of these consumers fall in the exceptional category the increase in consumption may not be reflected in revenue realisation. It is surprising how such a huge number of services under D list is allowed to be accumulated causing drain on Licensees revenue. It is worth noting that in Tamil Nadu the services under D list are disconnected immediately after the due date for non-payment of bills as mentioned in the House Committee Report. Similar steps must be taken in AP also. We request the Commission to stipulate a deadline to the Licensees by which time similar steps have to be taken.

6.5 Besides this, the number of defective meters that are still being used is unduly large. By February 2000 there were 4.02 lakh defective meters. By 31st March 2000 this increased to 4.44 lakhs. There is little reason to believe that this number has declined since then as the Licensees are struggling to provide meters to the regularised connections. **We request the Commission to look in to the issue of quality of the meters supplied and see that the suppliers of these defective meters pay for the damages suffered by the Licensees and save the consumers from the burden of increased tariffs.**

EXPENDITURE

7.1 It is very distressing to note that while power to be purchased during the ensuing year is less than that during current year the expenditure to be incurred has increased. While the power to be purchased during ensuing year declined to 41,800 MU from 41,839 MU in the current year, the total expenditure increased from Rs. 8,974 crore to Rs. 9300.34 crore.

Power purchase

7.2.1 The total number of units purchased from the thermal stations of APGENCO during the FY 2000-01 is 19709MU. It is surprising to note that projected total units to be purchased from this source declined to 18810 MU during 2001-02, i.e., a decline of 899 MU. This has adverse impact on APTRANSCO's power purchase costs since GENCO happens to be the most economical source of supply. This impact of this decline in purchases from APGENCO is more than Rs. 200 crore considering savings from high cost sources. Hence we submit that the purchases from APGENCO thermal units be kept at least at the last year level.

7.2.2 For the current year the Commission has approved purchase of 443 MU from APGCL @ Rs. 1.46 per unit. However the revised figures show that the same amount is purchased @ Rs. 1.96 per unit. We fail to understand how this increase in purchase rate took place. The Licensee has stated that fuels naphtha and gas were used based on the availability. We request to know whether the Commission is kept regularly informed about the fuel change, since the same might repeat during the ensuing year also. It is also surprising to note that the number of units purchased from APGPCL is also declining every year. For instance, in 1999-2000 504 MU, in 2000-01 453 MU are purchased. During 2001-02 this is projected to decline to 382 MU only. As the cost of power from this source is relatively cheaper than from IPPs this reduction will have adverse impact on the APTRANSCO's finances.

The impact of IPPs on APTRANSCO's finances

7.3.1 Power purchases from IPPs have become a drain on APTRANSCO's finances. The following table clearly illustrates the adverse impact of increased purchases from high cost IPPs.

Power Purchase Costs

YEAR	Total Purchases. MU	Purchase from IPPs. MU	Total Purchase Costs. Rs. Crore	Costs of Purchases from IPPs. Rs. Crore
1999-2000	40590	3192 (7.86%)	6204.94	677.14 (10.91%)
2000-2001	41839	3944 (9.42%)	7117.63	1152.52 (16.19%)
2001-2002	41800	4620 (11.05%)	6982.61	1358.17 (19.45%)

In 1999-2000 IPPs accounted for 7.86% of the power purchased by APTRANSCO and claimed 10.91% of its purchase costs. In 2001-02 the same source accounted for 11.05% of the power purchased but claimed 19.45% of the purchase costs of the Licensee. **This shows that while power purchased from the IPPs increased only by 3.19%, power purchase costs increased by 8.54%.** This increasing burden on APTRANSCO indicates the need to re-examine the whole issue of IPPs.

7.3.2 As per the present ARR GVK and Spectrum are given incentive to the tune of Rs. 17.27 crore and Rs. 18.75 crore respectively. We are of the opinion that these incentives are based on wrong premises and hence need not be allowed. In its reports CAG also adversely commented upon the incentive schemes which unduly benefits these IPPs. We respectfully hope that the Commission will respect the findings of the CAG which itself is a statutory authority. CAG also adversely remarked on inflating the capital costs violating all norms by these gas-based plants in the context of decline in capital costs in international market. We request the Commission examine these issues to protect the interests of the consumers.

7.3.3 In the recent past prices of naphtha have drastically declined. However, it is not clear how the Licensee has taken cost of naphtha at Rs. 20 per kg, while during last year it was only Rs. 14 per kg. We are not aware whether these changes in fuel prices are taken in to account while arriving at the unit cost of supply of power from naphtha based plants. Recently one of the IPPs, Lanco Power has entered in to an agreement with GAIL for supply of gas. This will have implications on the PPA. We would like to know whether Commission's consent was obtained prior to the signing of this agreement. We also would like the Commission to examine the various factors involved in these agreements like fuel costs and its transportation costs, which appear to vary from IPP to IPP. We could not do this comparative study because all the facts are not available for us. Hence this request.

7.3.4 Power Purchase Agreements (PPA) entered with the IPPs are shrouded in secrecy even after the introduction of the regulatory mechanism. The AP Electricity Reforms Act enjoins the Regulatory Commission to see that the process of power purchase takes place in a transparent and economical manner. But unfortunately the Regulatory Commission refuses to examine the PPAs that have already been entered into with several provisions harming the consumers interests. We request the Commission to make its stand clear on the following:

1. PPAs which have already signed, and Projects that came into being before the constitution of the Commission.
2. PPAs which have been signed before the formation of the Commission, and which have not been executed even after the completion time as provided in the PPA.

7.3.5 The Commission is declining to look in to the PPAs on the ground that they were signed before its formation and that it did not have retrospective powers. There are enough instances where the past PPAs were reviewed and even in some cases struck off. In Costa Rica the PPAs were declared lacking legal status, as they did not ensure economic benefits to the country or consumers. In Hungary PPAs were declared null and void as they are inherently anti-competitive. In Croatia PPAs were set aside as they were fraudulently entered in to. In the aftermath of severe financial burden because of them in Philippines PPAs were not renewed. In Pakistan the PPAs were reviewed reducing the capital costs considerably. All these and many other instances show that there is no bar on the Commission in re-examining and rejecting them wherever necessary. In this regard we earnestly appeal to the Commission to review the PPAs and send a signal to the consumers that it stands by their interests. Nothing should come in the way of the Commission in seeing that all the PPAs are open to the public scrutiny.

7.3.6 In the present ARR itself PPA between APTRANSCO and Vizag Steel Plant is enclosed. We would like to know why the same thing couldn't be done in the case of other PPAs also. In this context it is also surprising to find that negotiations are still going on between IPPs GVK & Spectrum and APTRANSCO and the State Government on capital costs. This is mentioned both in the ARR and the House Committee Report. The House Committee Report also mentions that CEA approval has yet to be obtained for the same. All this gives an impression that some thing wrong is taking place behind the backs of the people. **We are constrained to state that it is for the Commission as regulator of the sector to clear the air and see that incontrovertible and complete facts are available to the public.**

7.3.7 In the context of power purchases we would like to draw the attention of the Commission to the unequal treatment meted out to the APGENCO. In the name of reducing the burden of the Licensees the unit cost of supply from APGENCO is deliberately reduced affecting its financial health. The PPA with APGENCO does not provide for return on equity, depreciation, let alone incentives though its performance is better than the IPPs. The result of this discrimination would be ultimate collapse of APGENCO. Naturally there is suspicion among the public that APGENCO is deliberately led on the path of losses to pave the way for sale of its assets at throwaway prices. There is no encouragement for APGENCO for its improved efficiency, and this policy may finally lead to fall in standards of APGENCO. In this context we consider that **it is the responsibility of the Commission to protect the healthy and efficient generation stations be they in public or private sector.** The Act also enjoins the Commission to see that the sector functions in an economic and efficient manner.

Power Projection and Capacity addition

7.4 The report submitted by the House Committee of the AP Legislative Assembly gives the power projections made by the Licensee and capacity additions to meet the projected demand.

Description	2000-01	2001-02	2002-03	2003-04	2004-05
Projected Additional Demand (MW)	1346	2138	2993	3539	4479
Projected Energy Requirement (MU)	42628	47148	51333	54807	59470
Actual Demand (MU)	41839	41800	----	----	---
Projected Capacity Additions (MW) cumulative	505	1525	3092	5213	5653

It can be seen that the actual energy requirement is substantially lower than the projected energy requirement. It appears that capacity additions are planned based on higher projections than the actual demand growth. Most of these additions are by IPPs with guaranteed power purchase from the licensee. As a result of these Licensee will be burdened with these even when not needed. Already this impact could be felt. For example during the ensuing year the Licensee is compelled to pay for the power not purchased from Lanco's Kondapally plant. In fact for the ensuing year energy available for the Licensee is above 45,000 MU whereas the proposed power purchases stand at 41,800 MU only. The cost of the surplus available will be forced on the Licensees and in turn the consumer. Recently short gestation projects were allowed by the GoAP with the full knowledge about the demand requirements. In 1997 when the reforms were introduced additional capacity needed was projected to be 8000 MW. And based on this inflated projection the GoAP and APSEB signed a number of PPAs with IPPs. Recently the Cabinet Sub-Committee on infrastructure projected the additional demand requirement to be 3500 MW only. Even then the State Government is going on renewing these PPAs knowing well that these are going to be unbearable burden on the Licensees as well as the consumers who have to ultimately foot the bill. In this context we earnestly appeal to the Commission to see that these PPAs are not renewed and are cancelled.

Employee costs

7.5.1 In the Tariff Order for the current year the Commission has approved an amount of Rs. 55.90 crore towards current contributions for employee terminal benefits of transmission and distribution and an amount of Rs. 35.91 crore for the APGENCO employees in its PPA. For the ensuing year also amounts are allocated towards employee terminal benefits.

7.5.2 We also would like to know whether the amounts mentioned against pensions are really spent on that account. In the Tariff Order for the year 2000-01 the Commission had observed, " The Licensee has clarified that the requisite trusts for pension and gratuity are yet to be formed. The Licensee is directed that till such time the Trusts are formed, the amounts accruing on this account are credited from month to month to a non-drawal bank account opened with a scheduled bank. Such account should be opened not later than 1st July 2000" (para. 3.4.8). We are not sure that the Licensees have adhered to the directive given by the Commission. There are indications that though the Licensee has opened the bank accounts as directed by the Commission the amounts are not deposited in to them. Instead, they are spent on some other account. It appears that the Licensee has not learnt from the past mistakes. We request the Commission to look in to this and see that future customers are not burdened for no fault of theirs.

7.5.3 In this regard we also would like to know whether the payment towards pensions as mentioned in the ARR also includes payments towards past commitments. Already GENCO assets were inflated to the extent of more than Rs. 4000 crore to account for past pension liabilities. If the amount allocated towards pensions and other employee costs includes payments towards past pension obligations, then the consumers are made to pay for the same expenditure several times over and above the actual expenditure.

Interest burden

7.6 The proposals show that the interest burden is increasing every year. For the year 2000-01 while the Commission approved Rs. 308.12 crore towards interest payments, the Licensees spent Rs. 508.27 crore. While the approved amount constituted 4.46% of ARR, the amount spent by the Licensees constitute 5.88%. While this itself is very high for the ensuing year the Licensees project to spend Rs. 774.34 crore towards interest payments which constitute 8.64% of the ARR. It is more than double the amount approved by the Commission for the current year and increases by 52% over the amount spent during the same period. Licensees while are not able to collect the revenue due to them they are paying increasingly exorbitant amounts towards interest payments. During 2000-01 the Licensees secured new loans to the extent of Rs. 2021 crore. During the same period arrears stood at more than Rs. 1200 crore. Had they collected arrears properly there would have been no need to contract new loans to the extent done at present, and would have meant lesser interest/debt burden. We also find that they are contracting loans at very high interest rates ranging up to 17.5%, while many companies are able to mobilise public funds even at 9% interest. We request the Commission to look in to the prudence of loans contracted and also see that they remain within the limits set by the Commission.

Bad Debts

7.7 In the Tariff Meant for the current year the Commission had observed thus: "Licensee is advised to pursue vigorously the review of receivables stated by the Licensee as having been already instituted and collect the debts on priority making use of statutory instruments available to the Licensee to effect recovery" (para. 4.4.7). Following this the Commission did not allocate any amount towards bad debts. Disregarding Commission's order the Licensees accounted Rs. 45.21 crore towards bad

debts. For the ensuing year also Rs. 87.45 crore are to be foregone because of bad debts. It is the legal duty of the Licensees to ensure that dues are collected. It is highly unjustifiable to burden the honest consumers with avoidable imposts. In this regard we request the Commission to direct the Licensees to publish the top 1000 consumers whose arrears are sought to be written off in all news papers in this state. We also appeal to the Commission not to allocate any amount towards bad debts upholding the precedent set during the current year.

Prudence of Investments

7.8.1 During the current year Rs. 3503.05 crore are allocated for capital expenditure. For the ensuing year this amount stands at Rs. 3734.08 crore. This is several times more than that spent annually before the onset of reforms in the state. Though this investment is welcome it has to be seen that this investment is prudently and productively made. The recent developments cast doubts on this aspect. It was noted that in the works taken up under the Word Bank/OECF financed segments unit costs are several times more than similar works outside the externally financed segments. EHT/HT lines laid under the World Bank scheme are almost three times to the similar schemes executed by APTRANSCO. It was also noted that distribution transformers are purchased at almost double the cost compared to states like Tamil Nadu. In this regard we request the Commission to direct the Licensees to provide information on unit costs incurred or proposed to be incurred on various transmission and distribution works under external financing and outside this external financing separately.

7.8.2 APTRANSCO claims that Rs. 890 crore needs to be invested in order to reduce 1% transmission loses. Assuming the average rate of interest to be 15% the interest burden per annum works out to be Rs. 133.5 crore. However, the Licensee will get a benefit of only Rs. 70 crore because of reducing transmission losses by 1%. This clearly shows the above investments are unviable. The above mentioned investment to reduce transmission losses appears to be highly inflated and it is based on this inflated figure that the above capital expenditure is being incurred. If the investments on system improvement are not properly spent it will spell doom for the whole sector. It is because of this imprudent expenditure the debt burden is increasing manifold as all these improvements are made with borrowed capital. In the interests of efficient and economical functioning of the power sector we feel that it is the responsibility of the Commission to see that these expenditures are prudent, economical and meaningful.

REVENUE

8.1 An examination of ARR and FPT show that the avenues to augment revenue are either not properly enumerated or not properly estimated.

Consumer Categories

8.2.1 As per the Licensee's records the number of consumers in the category of consuming above 400 units is coming down. There were one lakh consumers in this slab out of 75 lakh constituting 1.3% in 99-00. This came down to 73358 out of 85 lakh domestic consumers constituting 1% in 00-01. This is expected to decline further to about 50000 out of more than one crore consumers accounting for only 0.5% during 2001-02.

Incomewise one percent of consumers in this slab is equal to 68% consumers of 0- 50 U slab (600/26X400/135). In 2000-01 average consumption is 600U in this slab. Average realisation is 400 paise per unit, while in the category of 0-50 units average consumption is 26 units and realisation is 135 paise per unit…

8.2.2 With the existing tariff consumers in the >400 units slab who constitute 1 % of the domestic consumers contributed Rs.212 crore to total income of the Licensees during the current year. When the number of consumers declines to 0.5%, there will be corresponding reduction in the revenues of the Licensees.

8.2.3 It is surprising to note that while total number of consumers are increasing the number of consumers in the 400 and above category is declining. We doubt whether this change is real or manipulated, whether this is a result of saving of power or increasing corruption and theft. We have some apprehensions in this regard as these manipulations will have adverse impact on the Licensees' financial health. We request the Commission to direct the Licensees to submit the relevant records for public scrutiny.

8.2.4 If this decline in number of consumers in the above slab is real this shift must be seriously viewed and corrective measures must be taken immediately, as the Licensees cannot afford to lose these consumers who are paying above average cost of supply of power. In the recent exercise of the Licensees to regularise unauthorised power connections some of the consumers of this slab might have obtained another extra connection/meter for the same dwelling to by pass the impact of power hike. Besides this, during the recent drive of the Licensee to curb power pilferage the whole exercise was limited to the lower end consumers, neglecting the areas of the high-end consumers. We request the Commission to look in to this issue.

8.3 In the consumers category of 0-50 there are 65,54,000, i.e., is 58% of one crore consumers. Minimum charge for power consumption is Rs 50. That is to say even if total charge for power consumed does not amount to Rs 50, the consumer has to pay that amount. Average consumption for this category is 26 units for the year 2000-01. If the same level of consumption by this category of consumers continue they will be paying Rs 35.10 if we go by the figures furnished by the Licensee. This is 14.9 rupees less than the minimum charge. In an year this is equal to Rs 117.2 crore (14.9x58,00,000x12) From the ARR it is not clear whether revenue from minimum charges is included in the estimate of revenue from domestic consumers for the year 01-02. If the minimum charges are not included in calculating the revenue for the ensuing account this will lead to a loss of about Rs. 117 crore. We request the Commission to examine this issue.

Wheeling Charges

8.4.1 In the ARR APTRANSCO has mentioned that it is collecting wheeling charges in kind for energy wheeled by it through its system, which according to it vary from 2 to 17 percent of the energy wheeled. (p68 ,ARR of APTRANSCO). In the same document the Licensee has claimed that the transmission losses are not 4.5% as believed earlier but 8.92%. If this is the fact then wheeling charges to be collected in kind for wheeling should also be more than 2 to 17 percent. And to that extent Licensee would have

incurred loss. We request the Commission to direct the Licensee to recover this deficit from its clients retrospectively, and also see that hereafter charges are collected in money terms i.e., Re. 1 per unit wheeled.

8.4.2 In the name of encouraging non-conventional energy power produced by these non-conventional energy power plants are being wheeled free of cost. But these units are selling power to the third parties instead of to the APTRANSCO which is the licensed transmission and bulk supply company. As these units are selling power to the third party for profit we are of the opinion that they need not be extended this facility. Hence we submit to the Commission that the Licensee be directed to collect wheeling charges from the non-conventional energy units and also see that interfaces, where ownership changes, are metered properly to record the power input properly.

Subsidy due from GoAP

8.5 During the financial year 2000-01 the GoAP committed to provide a subsidy of Rs. 1626.25 crore and pay the same in 10 equal monthly instalments of Rs. 162.63 crore. But as things stand the state government will be due one-month subsidy payment by 31st March 2001. The Licensee intends to show it as 'subsidy receivable' for the next year. Besides this, the subsidy receivable from GoAP for the previous years also. We submit to the Commission to see to it that the same is paid before the close of the current financial year in order to improve the financial position of the Licensees.

N0 REGULATORY ASSET

9.1 All the Licensees are asking for creation of a Regulatory Asset in the name of indexation, truing up of accounts and foregone profits. From the analysis of facts provided in this submission there is ample scope for increased revenues at the existing tariff itself, for example realistic estimation of consumption by agriculture sector and corresponding reduction in purchases, and making prudent investments, etc., will compensate any deviations from estimates made by the Licensees. Otherwise, it will provide opportunity for manipulation of accounts to cover up their inefficiencies,

PRAYER TO THE APERC

10.1 We request the Commission

I. To extend the date for submission of suggestions/objections on the tariff proposals for the year 2001-02, give enough advance notice for public hearing, and make public various documents and additional information as mentioned in our submission well in advance to the public hearings, and hold public hearings at the head quarters of the DISCOMs.

II. To reduce power tariff as there is enough scope to reduce expenditure and increase revenues.

III. To allow the petitioner to be heard in person before APERC takes any decision on this petition.

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Convenor,

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ANNEXURE – I

Estimating Agricultural Consumption

1. Agricultural consumption is largely not metered and hence has to be estimated. The quantum of power consumed in the agriculture sector has remained a controversial issue in the recent past. While the suppliers claim that agriculture sector is consuming nearly a third of power and contributing just three percent of revenues that forcing them to bankruptcy, agriculturists claim that they are getting raw deal in the supply of power. There is an urgent need to address this issue. It is thus important to ensure that agricultural consumption is estimated in a scientific way. In this note an attempt is made to arrive at the power consumed by the agriculture sector based on the data provided in the present tariff filing, which provides good approximation to the ground reality.
2. As a first step towards this, Energy metering at some of the LT side of the Distribution Transformers (supplying agricultural load) has been carried out by the DISCOMs to arrive at better estimates of the energy consumption. Census of pump sets has also been carried out in some districts. These are positive steps and the data provided in the ARR's has been consolidated in Table-1.
3. Metering data from distribution transformers for 30-day period has been provided. Metering has been carried out in the months of October-November and can be considered as a good indicator of the typical consumption pattern. Metering has been carried out in 5 circles in each of the DISCOMs. These are Anantapur, Kurnool, Mahaboobnagar, Nalgonda, Medak and Rangaraddy from CPDC; Eluru, Vzianagaram, Rajahmundry, Srikakulam and Visakhapatnam from EPDC; Warangal, Karimnagar, Khammam, Nizamabad and Adilabad from NPDC; Vijayawada, Guntur, Ongole, Nellore and Tirupati from SPDC. The sample size of measurement is 366 MW and is a good sample of the total agricultural load. The percentage of metered Agricultural power works out to 4.76% if the agricultural load is taken as 7691 MW and 7.07 % if the load is taken as 5178 MW. This is also shown in Table-1.
4. Column 5 of Table-1 shows that for this 366 MW of agricultural load, the metered consumption for 30 days is 50.38 MU.

5. Columns 8 of Table-1 shows the Average hours of Pump operation/day calculated on the basis of the figure of Units consumed per HP per month. Average number of hours per day = units per HP per month /(30*0.745). Average hours of operation of pump sets are 4.59. This number of hours of operation of pump sets reflects real situation. Using this figure and considering 200 days/year of pump operation, the average number of hours of operation/year can be calculated for each DISCOM. Average number of hours per year = Average number of hours per day *200.
6. The average number of hours of operation/year calculated thus for each DISCOM is given in column 10 of Table-1. It works out to be 1573 hours/year for CPDC, 735 for EPDC, 1025 for NPDC and 950 for SPDC. The weighted average (weighted on connected HP of measurement) works out to be 918 hours/year. For comparison, the ARR 2001 has taken 1800 hours/year for CPDC, 1355 for EPDC, 1140for NPDC and 1180 for SPDC. This works out to a weighted average of 1415 hours/year.
7. Tables-2a and 2b summarise the number and load information of pumpsets. Data on this is available from 2 sources. First is from ARR 2001-02 which gives the DISCOM-wise information on the number of pumpsets and the average HP. This data can be used to calculate the total agricultural load and gives a figure of 7691 MW from 19.85 Lakhs pumpsets as shown in Table-2a. The second source is ARR 2000-01, which had given the HP range wise, break of the number of pumpsets. Using this data, the agricultural load works out to be 4568 MW from 18.2 Lakhs pumpsets. Extrapolating the MW value (taking an average 5 HP power for the extra 1.6 Lakhs pumpsets) gives a value of 5178 MW for the agricultural load in 2001-02 from this data. This is shown in Table-2b.
8. In the ARR of each DISCOM, the total agricultural consumption for 2000-01 and 2001-02 has been estimated and is given in Table-3. The total agricultural consumption estimate given for 2000-01 is 10860 MU and 2001-02 is 10,500 MU.
9. Metering of Agricultural consumers was in place in 1981. Table 4 gives the data for 1981-82 on the number of pumpsets and metered energy consumption. This data can be extrapolated to arrive at the agricultural consumption levels today. In this procedure power consumption in 1981-82 is divided by the then existing pumpsets and the resultant figure is multiplied by the present number of pumpsets ([942/4.86] x 19.85) = 3847 MU. This is shown in Table-4.
10. We submit that the estimate given for power consumption in the agriculture sector in ARR 2001-02 is very high. Estimates are high because of two major reasons:

a) The average duration of operation of pumpsets has been taken as 1415 hrs/year, and this is high as available metered data show that this could be 918 hrs/year.
b) The connected MW agricultural load is taken as 7691 MW, which is very high.

11. Having done the good work of metering 5-7% of agricultural load spread over 20 circles for a period 0f 30 days, it will be scientific to use this data to prepare estimates of agricultural consumption by proper extrapolation methods. The metering data given in the ARR's can be used to calculate alternate estimates of agricultural consumption. In ARR submission, DISCOMs have stated inability to use this data right now for estimation. To quote from Section 2.2.1.2 of the ARR of CPDC, one of the DISCOMs (Similar text is present in the ARRs of other DISCOMs): “APCPDCL intends to use the metering and census information for developing its future

agricultural forecasts. However, for making projections this data would need to be refined and would be needed for a substantial period of time. APCPDCL will be happy to share the data with the Hon'ble Commission as it is available and arrive at an appropriate basis for developing agricultural projections. However for the ensuing year it requests the Commission to accept its estimate of agricultural consumption of 4,795 MU". We submit that the metering data given in the ARR can be used to calculate alternate estimates of agricultural consumption. Estimates based on 7 different alternate methods are given in Table 5.

11.1 S.No 1 is the estimate prepared using the average hours of pumpset operation per year calculated in Table-1 (918 hours) and the total agricultural load estimated based on ARR 2000 data extrapolated to 2001 (Table 2: 5178 MW). (5178MW x 918hrs x 1000kwh/1,000,000 = 4751 MU)

11.2 S.No 2 is based on extrapolating the energy consumption for the metered sample to the total agricultural load. As per Table-1, the metered sample of 366 MW consumes 50.38 MU in 30 days. This figure is extrapolated to the total agricultural load of 5178 MW for a period of 200 days to give the yearly consumption. {(50.38MU x [5178MW/366MW] x [200days/30days]) = 4751 MU}

11.3 S.No 3 uses the metered agricultural consumption available for 1981-82 as given in Table 4. This figure was for 4.86 Lakhs pumpsets. The number of pumpsets has increased 4 times and therefore the energy consumption figure of 1981-82 is extrapolated to get the consumption for 19.85 Lakhs pumpsets. ([942 MU/4.86 Lakh pumpsets] x 19.85 lakh pumpsets = 3847 MU)

11.4 S.No 4 calculation is similar to that of S.No 1. The only difference is that the total agricultural load is taken as the higher figure of 7691 MW as given in ARR 2001 (Table 2). (7691MW x 918hrs x 1000kwh/1,000,000 = 7057 MU)

11.5 S.No 5 calculation is similar to that of S.No 2. The only difference is that the total agricultural load is taken as the higher figure of 7691 MW as given in ARR 2001 (Table 2). {(50.38MU x [7691MW/366MW] x [200days/30days]) = 7057 MU}

11.6 S.No 6 uses the average hours of pumpset operation per year for each DISCOM as given in Table 1 (Column 10) and calculates the energy consumption for each DISCOM based on the MW load as given in Table 2, last column. The individual MU figures for the DISCOM's are added up to get the total MU figure.

11.7 S.No 7 uses the total agricultural load as 5178 MW (ARR 2000 figure extrapolated to 2001). It is assumed that half this load is on the grid for two periods of 9 hours each for 200 days in a year. Based on this assumption, the yearly MU figure is calculated. (5178MW x 0.5 x 9hrs x 2shifts x 1000kwh x 200hrs = 9320MU)

12. All these estimates have used base data from TRANSCO. The basis for TRANSCO's estimate of 10,500 MU is not clear. Basis for the 7 alternate estimates is briefly given in section 11 above. From Table- 5, it can be seen that all estimates are smaller than the estimate of 10,500 MU given in ARR. In fact the estimates vary from 37 % (3847 MU) to 89 %(9320 MU) of the ARR estimate (10,500 MU).

13. We submit that the real life metering information available with TRANSCO and DISCOM's should be used to arrive at the estimates of Agricultural Consumption. Our feeling is that Estimates 1 and 2 (4751 MU) may be closer to the actual agricultural consumption in AP.
14. We request the Commission to get clarifications/comments from TRANSCO on these estimates and accordingly suggest to revise the ARR figures for agricultural consumption.

Table-1
Agricultural Metering Data Summary

1	2	3	4	5	6	7	8	9	10
DISCOM	**Period of Metering**	**No of Transformers metered**	**Connected load in HP**	**Consumption recorded (MU)**	**Units per HP per Month**	**No of Days of Measurement**	**Avg hrs of operation per day**	**Number of days of operation/ year**	**Number of hrs of operation/ year**
CPDC	oct-nov	71	6678	1.17	176	30	7.87	200	1573
EPDC	oct-nov	1784	125071	10.27	82	30	3.68	200	735
NPDC	oct-nov	911	89526	10.26	115	30	5.13	200	1025
SPDC	jun-oct	3601	270058	28.67	106	30	4.75	200	950
Total		**6367**	**491332**	**50.38**					
			366	**MW**					
Weighted Avg					**103**	**30**	**4.59**		**918**

Estimate for Total Agricultural Load (MW)

1. From ARR 2001 7691
(Based on no of Pumpsets per DISCOM and the Average HP)

2. From ARR 2000 5178
(From the HP wise count of pumpsets in 2000 and extrapolated to 01)

Metered portion as % of total Agl.Load (Sample Size)

Considering 7691 MW as Total Load	4.76
Considering 5178 MW as Total Load	7.07

Table-2a
Number and Load of Pumpsets
From ARR 2001

DISCOM	**No of Sets(sept-00).L**	**Average HP**	**HP(L)**	**MW**
CPDC	7.63	5	38	2842
EPDC	1.33	8	11	793
NPDC	6.22	5	31	2317
SPDC	4.67	5	23	1740
Total	**19.85**		**103**	**7691**

Table-2b
Number and Load of Pumpsets
From ARR – 2000

HP Range	**Average HP**	**Number of Pumpsets(L)**			
		DPAP	**Others**	**Total**	**MW**
< 3	2	3.15	6.1	9.3	1378.3
3 to 5	4	2.28	5.13	7.4	2208.2
5 to 10	7.5	0.26	1.09	1.4	754.3
> 15	15	0.00363	0.2	0.2	227.6
Total	**3.37**			**18.2**	**4568.3**

Total MW Extrapolated to 2001 **5177.8**

Table-3
Agricultural Consumption Estimate in ARR

DISCOM	MW	2001(MU)	2002 (MU)
CPDC	2842	5082	4795
EPDC	793	1076	1088
NPDC	2317	2646	2577
SPDC	1740	2056	2040
Total	**7691**	**10860**	**10500**

Table-4
Data in 1981-82, when metering was in place & Present

Number of Pumpsets-Lakhs		MU	No of hrs of supply
Year	No		
1981-82	4.86	942	18
2000-01	19.85	3847	9

Source :
APSEB Power Development (Statistics) 1998-99

Table-5
Estimates for Agricultural Consumption in AP, 2001-02

S.No.	MU	Source	Method	% of ARR Estimate
1	4751	Calculated	Based on total agl load as per ARR00 extrapolated to 01 (Table-2:4568 to 5178 MW), Number of hours of operation calculated based on measured data given in ARR01(Table-1:918 hrs)	45
2	4751	Calculated	Use the recorded MU consumption of measured load (Table-1: 366 MW) and extrapoloate to total load (5178 MW). 30 day consumption extrapoloated to 200 days.	45
3	3847	Calculated	Using the Consumption figures available in Table 4 for 1981-2 (942MU) when 4.86L pumpsets were metered. Extraoplated for the current no of pumpsets (19.85L)	37
4	7057	Calculated	Based on total agl load as per data given for DISCOMS in ARR01(Table-2: 7691MW), Number of hours of operation averaged for the 4 DISCOMS based on measured data given in ARR01(Table-1: 918 hrs)	67
5	7057	Calculated	Use the recorded MU consumption of measured load (Table-1: 366 MW) and extrapoloate to total load (7691 MW). 30 day consumption extrapolated to 200 days.	67
6	9082	Calculated	Based on total agl load as per data given for DISCOMS in ARR01(totalling to 7691MW), Number of hours of operation of each DSCOM based on measured data given in ARR01	86

7	9320	Calculated	Based on half the total agl load as per ARR00 extrapolated to 01 (Table-2: 4720 to 5178 MW), operating for two shift of 9 hrs each for 200 days	89
8	10500	ARR 2001-02	Added up the consumption figures for the DISCOMS	100