ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION
Hyderabad

Date: 23.03.2006

Present

Sri K. Swaminathan, Chairman
Sri. K.Sreerama Murthy, Member
Sri Surinder Pal, Member

O.P No.1 of 2006

Transmission Corporation of Andhra Pradesh Limited ……. Applicant

This came up for public hearing before several consumers, generators, the representatives of various consumer organizations, political parties and other stakeholders, on 14.02.2006 at Hyderabad, and having stood over for consideration till this day, the Commission passed the following

O R D E R

Part I
INTRODUCTION

1. The Electricity Act 2003 (Act 36 of 2003) came into force with effect from 10-06-2003. While the previous Acts governing the electricity supply in the country viz., the Indian Electricity Act 1910 (9 of 1910), the Electricity (Supply) Act 1948 (54 of 1948), and the Electricity Regulatory Commissions Act 1998 (14 of 1998) stand repealed as on the date of this order, the provisions of A.P. Electricity Reform Act 1998, not inconsistent with the provisions of the Central Act, continue to apply to the State of Andhra Pradesh (A.P.).

2. The Transmission Corporation of Andhra Pradesh Limited (APTRANSCO) earlier the holder of Transmission and Bulk Supply Licence (Licence No. 1/2000) to carry out the transmission and bulk supply business in Andhra Pradesh was, under the Third Transfer Scheme notified by the Government of Andhra Pradesh (hereinafter 'GoAP') vide G.O.Ms.No.58 dated 07.06.2005, was divested of its bulk supply business with effect from 09.06.2005. APTRANSCO, being the State Transmission Utility (STU) also designated by the GoAP under Section 31(2) of the Central Act, as the agency to operate for the State Load Despatch Centre (hereinafter, SLDC), a function earlier also being discharged by APTRANSCO.

3.(a). A Transmission licensee, till FY 2005-06, was obliged to file, in terms of Sections 62 and 64 of the Central Act, read with Andhra Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 1999 as adopted by the Andhra Pradesh Electricity Regulatory Commission (Transitory provisions for Determination of Tariff) Regulation 2004 (No.9 of 2004), the Guidelines for Revenue and Tariff Filings framed by the Commission and the provisions of the licence, its calculations related to each licenced business for the ensuing financial year regarding (i) its expected aggregate revenue from charges under its currently approved tariff; (ii) its expected cost of service; and (iii) its expected revenue gap (if any) and a general explanation on how it proposes to deal with the revenue gap and the application for tariffs for the ensuing financial year.

(b). From the year 2006-07 onwards, the Commission has decided to go in for a multi-year tariff framework in accordance with the National Electricity Policy and accordingly notified, on 30.11.2005, the APERC (Terms and Conditions for determination of Transmission Tariff) Regulation, 2005 (Regulation No.5 of 2005) (hereinafter referred to as the Transmission Tariff Regulation or TTR). Under this Regulation, the Transmission Licensee has to make all the filings, as hithertofore, but for a control period, generally, of 5 years, the first control period, however being of a 3-year duration (2005-07 to 2008-09).

4. The APTRANSCO submitted its filings on 31-12-2005 for the Aggregate Revenue Requirement and application for Tariff for the control period 2006-2009, in respect of its licenced business, viz., Transmission of electricity. For the determination of the SLDC fees and charges, however it made its filings only for 2006-07 as the Regulation for determination of these charges is yet to be finalised; even the draft Regulation issued on 28.01.2006, provides for the first control period of 2-year duration in respect of these charges to commence only from 01.04.2007.

5. Thus, the Commission has to determine the Transmission tariffs for each year of the control period of 2006-07 to 2008-09 and SLDC fees and charges for FY 2006-07, based on the filings of APTRANSCO and considering the objections/suggestions received/heard from general public and other stakeholders, on those filings.

6. Under section 61 of the Electricity Act, 2003, while specifying the terms and conditions for determination of tariff, the Commission has to be guided inter-alia by the provisions of clauses (a) to (i) thereof. One of these provisions refers to the Tariff Policy to be notified by the Central Government. Tariff Policy has been notified very recently, on the 6th of January 2006, after the notification by the Commission of the aforementioned Transmission Tariff Regulation on 30.11.2005 and after

the submission of its ARR filings and application for tariff by APTRANSCO on 31.12.2005. Certain follow-up actions like rates of depreciation, evolving of operating norms, and development of tariff framework, sensitive to distance, direction and quantum of power flow, in consultation with the Central Electricity Authority, methodology for the transmission loss allocation etc., for the guidance of State Commissions are yet to be taken by CERC. Nevertheless, the Commission in determination of tariffs and in issuing this Order has paid due regard, to the extent possible, to the Tariff Policy. The Commission will be taking further actions required of it under the Tariff Policy in due course of time.

PART II

FILING OF ARR / TARIFF PROPOSALS AND PUBLIC HEARINGS

Notice calling for objections / suggestions

7. APTRANSCO, was directed to serve a public notice through publication on 04-01-2006, in at least two daily newspapers in English and two in Telugu having circulation in the State informing the general public that it (APTRANSCO) had filed its ARR and Tariff proposals for the first control period FY 2006-07 to FY 2008-09 with the Commission and that copies of the filings (together with supporting materials) were available with Chief Engineer/ RAC, APTRANSCO, Vidyut Soudha, Hyderabad and with the SEs/TL&SS at Visakhapatnam, Vijayawada, Cuddapah, Hyderabad and Warangal for inspection/perusal/purchase by interested persons and that objections/suggestions can be filed on these proposals with the Secretary, APERC, by 01-02-2006.

Objections/suggestions received

8. Following the public notice, 18 persons / organisations sent their objections/suggestions to the Secretary, APERC, on the ARR/Tariff proposals of APTRANSCO by the due date i.e., 01-02-2006.

9. The Commission directed APTRANSCO vide its letter dated 21-01-2006 to send replies to all the public objections by 07-02-2006 and also supply a copy of the same to the Objector by the same date.

10. Notice of public hearing on 14th February 2006 at the Institution of Engineers, Khairatabad, Hyderabad, was given to APTRANSCO and the GoAP. All persons who had expressed their desire to be heard in person were also initiated in writing about the venue and the date on which they would be heard. General public were also informed of the dates of public hearing on 07-02-2006, through a press release.

11. Seventeen (17) of the objectors desired to be heard in person and 15 persons actually appeared or were represented before the Commission during the public hearing on 14-02-2006.

Hearing

12. During the hearing:

(i) the licensee made an opening presentation at the commencement of the public hearing on its filings, as directed by the Commission vide its letter dated:21-01-2006;

(ii) then, the Commission heard all the objectors desiring to be heard in person;

(iii) next, the Staff of the Commission made a presentation on the issues and concerns relating to the filings of the licensee; and

(iv) the Licensee gave its responses on the issues raised by the objectors during the hearing and to the presentation made by the Commission Staff.

Meeting of the State Advisory Committee:

13. Many important issues concerned with the ARR/Tariff proposals of the Licensee/SLDC were discussed in the State Advisory Committee (SAC) meeting held on 04-03-2006 and suggestions made by the members of SAC have been taken into consideration by the Commission while finalising this Tariff Order.

PART III
MULTI-YEAR TARIFF FRAMEWORK

Multi-year tariff filings:

14. The present filings of APTRANSCO for the Control period FY 2007-2009 are the first Multi-year Tariff (hereinafter 'MYT') Filings. The 'TTR' lays down the principles to be followed by the Commission in determination of tariff for transmission of electricity under Section 62 and 64 of the Electricity Act, 2003. The existing Guidelines issued by the Commission for computing the ARR/ERC (Aggregate Revenue Requirement/Expected Revenue from existing Charges) to the extent modified continue to apply till such time as new Guidelines are issued. This part highlights the main changes introduced by the TTR to the ARR filings of APTRANSCO, the sole Transmission Licensee for transmitting electricity at high voltages, of 132 kV and above. The notification of GoAP with regard to the Third Transfer Scheme unbundling the transmission activity of APTRANSCO from supplier of bulk power accords legal sanction to the Transmission business of APTRANSCO. For the present, as stated earlier, GoAP has appointed APTRANSCO as the State Load Despatch Operator, an activity, which is independent of the transmission business.

Multi-year Tariffs and Regulation:

15. The main thrust of the TTR is the introduction of the MYT framework with effect from FY 2006-07 in Transmission business aimed at achieving operational efficiencies by providing incentives, and levying penalties on the Licensee for overachieving and failing to achieve respectively, the targets set out for items that are deemed 'controllable' by the Commission. The Commission can also set trajectories for other items considered necessary for enhancing the efficiency of the licensee's operations. While the Commission had outlined the 'controllable' and 'uncontrollable' items in its Tariff Order for FY2005-06 for the purpose of regulatory treatment of 'true-up', in an MYT framework, the entire

concept of 'controllable' and 'uncontrollable' items undergoes a definitional change in that the reference is now with regard to the targets fixed and consequently the associated problems of meeting the targets. Before examining 'controllable' and 'uncontrollable' items, it is appropriate to identify the items that are amenable to fixation of targets.

Items amenable to fixation of targets:

16. a) Operation & Maintenance costs:

Operation and Maintenance (O&M) costs, which include employee – related costs, repairs and maintenance costs, and administrative and general expenses constitute the obvious candidates for fixation of targets. The Commission has considered it appropriate to fix norms for O&M costs and has in the TTR outlined the formula on the basis of which the admissible quantum of O&M expenses will be fixed for each year of the control period. The O&M cost for the Base Year FY 2005-06, is determined based on latest audited accounts, best estimates of Licensee for the O&M expenses for relevant years and other factors considered relevant. The Licensee can also propose the required indexation for projecting the O&M costs over the relevant control period. These O&M costs are then related to the proposed investments in sub-stations and lines. Norms so fixed for O&M costs will remain constant for the entire control period.

b) Return on Capital Employed:

The Commission has considered it appropriate to adopt Return on Capital Employed (RoCE) instead of return on Equity (RoE) providing thereby hereafter flexibility to the Licensee to determine its capital structure based on own perceptions of financial market functioning. The RoCE will be computed on the Regulated Rate Base (RRB) using the Weighted Average Cost of Capital (WACC). WACC derivation depends on three components: (i) Debt-Equity Ratio; (ii) Cost of Debt; and (iii) Return on Equity, all determined at the beginning of the Control period. All the three components will be based on the Licensee's proposals, previous years' pattern, market conditions and other factors considered relevant by the Commission. Once fixed, these three components will not be changed during the Control period.

Regulated rate base

17. The RRB will consist of both short-term and long-term assets. Under long-term assets, what are included is the OCFA (Original Cost of Fixed Assets) plus new investments expected to be capitalized during the year minus the accumulated depreciation and consumer contributions. Short-term assets refer to working capital. The Licensee is required to provide detailed scheme-wise / project-wise Capital Investment Plan with a capitalization schedule covering the entire Control period. As regards inclusion of investments in the capital base, the procedure set out in Tariff Order 2005-06 (paragraph 390) regarding submission of Physical Completion Certificates and Financial Completion Certificates will continue to apply, to ensure timely completion of the projects/ schemes. Similarly, Capital Works-in-Progress (CWIP) will continue to be not included in the rate base.

Loss reduction:

18. The Commission had directed APTRANSCO to file a loss reduction trajectory for each year of the Control period with upper and lower limits to enable fixation of incentives and penalties. Reduction of transmission losses to below the approved range shall earn an incentive and such incentive shall be added to the ARR relating to subsequent Control period. Similarly, losses beyond the approved range shall attract a penalty to be deducted from the ARR for the subsequent Control period. The levy of penalties is however limited to 10% of the Return on Equity.

Controllable and Uncontrollable Items in MYT:

19. The table below summarizes the items considered as controllable and uncontrollable by the Commission, of the MYT filings of APTRANSCO for the transmission business:

Table 1: Classification of ARR items

ARR ITEM	Controllable or Uncontrollable
O&M Expenses	Controllable
RoCE	Controllable
Depreciation	Controllable
Taxes on Income	Uncontrollable
Non-tariff Income	Controllable

20. As per the earlier practice, true-up will be permitted only in the case of 'uncontrollable' items. The true-up however, will be on the availability of data as per actuals, with provision for any carrying cost on account of delay. Regarding 'controllable' items the Commission will review the gains and losses on each item and make appropriate adjustments, wherever required. A statement of gains and losses for each controllable item will be presented in the filings for the next Control period.

Transmission tariff design:

21. The transmission tariff will be payable by all users of the Transmission system on the basis of their contracted capacity as explained in the TTR. Variations in revenue recovery over approved revenue requirements on account of variations in transmission usage will be adjusted in the subsequent Control period with financing cost at average rate of borrowing during the year to which the variations relate.

PART -IV

GENERAL OVERVIEW OF THE LICENSEE'S FILINGS

Financial:

22. In its application, APTRANSCO has requested the Commission to permit it to charge Rs.49.30/kW/month as transmission charges on consumers using the transmission network within the State of Andhra Pradesh for FY 2006-07, Rs.61.09/KW/month for FY 2007-08 and Rs.60.32/kW/month for FY 2008-09. The State Load Dispatch Centre (SLDC) charges for the same period have been projected at Rs.3.74/kW/month for FY 2006-07, Rs.3.93/kW/month for FY 2007-08 and Rs.3.39/kW/month for FY2008-09.

Table 2: Proposed Transmission Tariffs and SLDC charges

	FY 06-07	**FY 07-08**	**FY 08-09**
Transmission Charges (Rs./kW/Month)	49.30	61.09	60.32
SLDC Charges (Rs./kW/Month)	3.74	3.93	3.39

23. These tariffs will enable APTRANSCO to recover its ARR for each year of the Control period as given in the table below:

Table 3: ARR of APTRANSCO for the Control period

(Rs. Crores)

	FY 06-07	**FY 07-08**	**FY 08-09**
ARR of Transmission Business	712.01	909.14	1,113.04
ARR of SLDC Business	53.99	58.49	62.63
Total	**766.00**	**967.63**	**1,175.67**

24. The total revenue requirement for Transmission business and SLDC operation taken together has been projected as Rs.766 crs. for FY 2006-07, Rs.967.63 crs. for FY 2007-08 and Rs.1175.67 crs. for FY 2008-09. The base year for the multi-year projections is taken by the licensee as the Revised Estimates for FY 2005-06, the ARR for which is projected at Rs.830.88 crs. for the Transmission business and SLDC operation.

25. In line with MYT principles, O&M expenses are estimated as per the formula specified in the TTR. APTRANSCO has claimed interest on loans, depreciation as per Central Electricity Regulatory Commission (CERC) rates and advance against depreciation (AAD). It has claimed return on Capital Employed restricted to interest on loans only. PGCIL transmission costs are included as part of the ARR. Provision for Contingencies Reserve is included although the regulation does not provide for it.

26. APTRANSCO expects to recover its ARR through transmission charges and SLDC charges from the users of the transmission networks, including third parties/Open Access Users requiring their electricity to be transmitted as per the capacities given below:

Table 4 : Transmission Network usage for the Control period

	2005-06	2006-07	2007-08	2008-09
Total capacity to be wheeled (MW)	**11,076**	**12,036**	**12,402**	**15,376**
Wheeling of Third party/Open access Capacity (MW)	456	626	773	911

Loss reduction:

27. APTRANSCO, as mandated, has projected the loss reduction range for each year of the Control period, as follows:

Table 5 : Target Transmission Loss Range for the Control period (%)

	FY 2005-06	FY 2006-07	FY 2007-08	FY 2008-09
Target Transmission Loss	4.97	4.5	4.4	4.3
Loss reduction range	-	+/-0.3	+/-0.3	+/-0.3

Resource and Investment Plan:

28. In compliance with the TTR and the Guidelines, APTRANSCO has also submitted the Resource Plan for the first Control period along with the Capital Investment Plan for the Control period.

29. The following load forecast and investment requirements have been projected to take into account anticipated generation capacity additions, combined with the expected growth in demand of electricity at different load centres:

Table 6 : Summary of Resource & Investment Plan for the Control period

	FY 2005-06	FY 2006-07	FY 2007-08	FY 2008-09
Capacity additions in generation (MW)	850.6	1617.6	351.6	811.6
Peak Demand (MW)	8444	9072	9741	10154
Capital Investment (Rs. Crores)	514.99	807.66	1126.88	1122.34

PART-V
REVIEW OF PERFORMANCE OF APTRANSCO

Performance in 2005-06

30. The performance of APTRANSCO in the current year FY 2005-06 is examined from two dimensions: i) financial, and ii) operational performance.

Financial performance:

31. In financial terms, APTRANSCO has estimated a net benefit of Rs.6.98 Crores for FY 2005-06 to be passed on to the users. There has been timely closure and audit of accounts.

Operational performance:

32. The Commission while accepting vide paragraph 337 of Tariff order 2005-06, Transmission loss level of APTRANSCO'S projected 5.00% for FY 2005-06 had directed it to endeavour to achieve a loss level not exceeding 4.5%. In the present filings, APTRANSCO has estimated a loss level of 4.97% for FY 2005-06 achieving thereby the set-out target of 5.00% but not meeting the fervent expectation of the Commission brining the loss level down to 4.5%. However, it has complied with other directives on power purchases.

33. APTRANSCO has publicly declared for FY 2005-06 a transmission availability of 99.40%, which is creditable.

PART – VI

LEGAL AND OTHER IMPORTANT OBJECTIONS / SUGGESTIONS RECEIVED AGAINST THE PUBLIC NOTICE ISSUED BY APTRANSCO AND APTRANSCO'S RESPONSES THERETO

LEGAL ISSUE

34. Issue 1: Applicability of Transmission charges on wheeling under pre-existing Wheeling Agreements

The wheeling charges at the rates as specified in the policy directions of the State Government will continue to apply to wheeling agreements entered into in pursuance of those directions and subsisting as on date, and these charges are inclusive of charges for transmission of electricity. The proposal presumes abrogation of all existing agreements completely and requiring fresh agreements with the licensees as per an earlier order of the Commission, which has been set aside by the Hon'ble High Court.

APTRANSCO: The present ARR proposals of APTRANSCO are in accordance with the provisions of the Electricity Act, 2003.

OTHER IMPORTANT ISSUES

35. Issue 1: Return on Capital Employed (ROCE)

(a). ROE may be allowed though APTRANSCO has voluntarily given up this element.

APTRANSCO: ROE is not claimed to reduce the burden on the end-consumer

(b). The ROCE for 2006-07 works out to 368.2 crores out of which the interest on loan is Rs.205.48 crores as per filings. Thus the balance ROCE of Rs.162.72 crores works out to a high return of 20.88% on the Equity component of Rs.779.22 crores for 2006-07. The need for allowing such high return as per formula prescribed by Commission needs re-examination.

APTRANSCO : As per Tariff policy notified by GoI on 06-01-2006, 14% return as per CERC Regulations is to be allowed to APTRANSCO. The Commission is to take a view regarding the provision in its own Regulation on Transmission Tariffs and the Tariff Policy notified by GoI.

36. Issue 2: Past claims

The claim made earlier for Rs.237.34 crores in 2005-06 filings towards the power purchase supplemental bills of APGENCO and others does not find place in 2006-07 filings.

APTRANSCO: The APGENCO's claim is for Rs.244.07 crores. The APTRANSCO accepted the APGENCO claim to the extent of Rs.107.81 crores and the same was recommended for approval by the Commission. For the balance amount, clarification is awaited from APGENCO.

37. Issue 3: Underutilization of Transmission capacity created for evacuation of power from Gas-based projects

What will be the impact of underutilization of the Transmission capacity erected with hefty investments to evacuate power from the 4 new gas - based power projects for which gas availability is not certain till end of 2008?

APTRANSCO: 400 kV Substation at Vemagiri is required to maintain system reliability as the 400 KV line from Gazuwaka to Nunna (Vijayawada) is too long. It will also improve the system voltage and reduce the transmission losses. Further, cost of the lines from the generating stations for evacuation to the grid sub-substation is not high.

38. Issue 4: Variations in transmission losses

The reasons for wide variations in losses from 6.026% in April 2005 to 4.022% in September 2005 are to be stated.

APTRANSCO: The variations in losses occur on account of factors like changes in Load-Generation scenario, Hydro generation, which is closer to load centers, compared to thermal generation, agricultural load variations, etc. The losses were high in April 2005 due to lower generation from hydel units (220 MU). In September the losses came down due to higher generation from hydel units (1468 MU) and lower generation (1091 MU) from thermal units.

39. Issue 5: Capital investments VS Loss reduction

(a). Huge investments of Rs.1679.90 crores are proposed during the period 2004-05 to 2006-07, whereas the system loss reduction is shown as 0.9% which is not commensurate with the level of investments. What is the ultimate minimum level of transmission losses to be achieved, and the programme for achieving this target along with capital investments required?

APTRANSCO: The investments in Transmission are also meant for evacuation of power from new generating projects, system expansion to meet local growth, to maintain system reliability and quality of supply, which are not related to loss-reduction, but nevertheless are instrumental in some incidental loss-reduction. The investment schemes are formulated in accordance with the provisions of the Transmission System Planning and security standards.

(b). Has the need for new lines been examined by the Commission on techno-economic considerations?

APTRANSCO: No reply from APTRANSCO.

40. Issue 6: Quality Control Cell

Whether any quality control cell is formed to inspect the capital works which are taken up on large scale. If so, what are the findings of this unit and action taken on the findings?

APTRANSCO: The quality control cell is already formed and is functioning under the control of Joint Managing Director (V&S). It inspects all capital works taken up by APTRANSCO and its reports are reviewed regularly by the Joint Managing Director, Director(projects) and the CMD, APTRANSCO.

41. Issue 7: Vacant posts

(a). The filings reveal that 4072 posts out of the total of 8186 sanctioned posts were vacant as on 31-12-2005. How does the licensee propose to carry out the works with 50% of the posts vacant? APTRANSCO proposes to fill up 50% of the vacant posts in initial cadres during 2006-07. What is the financial impact if all 4072 posts are filled up?

APTRANSCO: 50% of vacancies in initial cadres of AE, Sub-Engineer, LDC / Assistant, etc., works out to 956 posts in 2006-07 projections, with a financial commitment of Rs.12.09 crores per annum which is provided for in the ARR filing. 60% of the vacancies is in the O&M cadre, which will not be filled up since most of the O&M works are being outsourced.

(b). The vacant posts (4072) should be (abolished) surrendered forthwith and if wages are calculated on the basis of sanctioned strength, the cost should be scaled down.

APTRANSCO: Same reply as in the case of (a) above.

42. Issue 8: Interruptions to EHT systems

APTRANSCO has stated that there will be no actual interruptions to power supply to consumers as alternate feeding arrangement is available. This will not be true for the radial feeders.

APTRANSCO: In the case of interruptions on radial feeders, alternate feeding arrangements are through 33 KV feeders from adjacent EHT substations. 58 out of the total of 239 substations of 132 KV / 33 KV are identified as requiring alternate supply. Works will be completed for 35 substations by May 2006, and balance by March 2007.

43. Issue 9: PGCIL Transmission costs

(a). The PGCIL transmission costs are to be recognized as part and parcel of power purchase costs of DISCOMs' share from the Central Generating Stations. Hence they are to be excluded from the ARR. The corresponding related expenditure in respect of other heads of expenditure also is to be excluded.

APTRANSCO: It is under the purview of APERC.

(b) Transmission cost on MW-Mile basis:

As per the Tariff policy (para 7.1.2) the CEA/CERC have to announce the Transmission tariff for PGCIL system on MW-Mile basis from 01-04-2006. The costs will come down, as A.P. is conveniently located. Even if there is delay, the benefit should be allowed with effect from 01-04-2006.

APTRANSCO: No specific response from APTRANSCO.

44. Issue 10: Copies of ARR / Tariff filings

Copies of ARR / Tariff filings should be made available at all the district headquarters.

APTRANSCO: Will be made available from next year with the approval of the Commission.

45. Issue 11: Depreciation

(a). The reduced rates of depreciation will affect the APTRANSCO's interests adversely. May be reconsidered.

APTRANSCO: Depreciation now claimed is at the reduced rates along with advance against depreciation as notified in CERC Regulation of March 2004. APTRANSCO's interests are safeguarded by claiming advance against depreciation.

(b). Advance against depreciation is not envisaged. Hence this needs to be deleted. Pre-91 depreciation rates to be adopted and all loans are to be re-scheduled.

APTRANSCO: One cannot view the depreciation rates and advance against depreciation in isolation of each other. If CERC depreciation rates are followed, then advance against depreciation also has to be allowed, as both are inter-linked. Long-term loans have repayment tenure of 10-12 years while the CERC has spread the depreciation over 25-35 years.

46. Issue 12 : Interface metering

Delay in replacing 0.5% accuracy class meters with 0.2% accuracy class meters at 220/132 kV substations needs to be explained.

APTRANSCO: All interface points with generating stations have been provided with 0.2 class meters as directed by APERC. Action is being taken to provide 0.2 class meters with ABT features and online data transfer facility at all Generating Stations in the first instance and later extended to the T-D (Transmission – Distribution) interface points in a phased manner with the approval of the Commission.

47. Issue 13: O&M costs

Steep rise of over 80% in O&M costs in two years is very disconcerting. How is the increase justified?

APTRANSCO: In the past, significant quantities of equipments and O&M spares were drawn from capital stores and booked as capital expenditure thereby understating the O&M costs even though the actual expenditure was higher. This is being corrected from the base year and during the Control Period.

48. Issue 14: Energy conservation

Steps taken by the APTRANSCO to encourage engineers to become energy managers as per the Energy Conservation Act, 2001, and to follow efficiency norms which are mandatory

APTRANSCO: The initiatives taken for energy conservation in APTRANSCO are installation of capacitor banks, erection of EHT substations and lines at strategic locations etc. The initiatives taken in the distribution system are segregation of agriculture feeders, installation of capacitor banks and LT line capacitors, usage of energy efficient CFLs, requirement of adoption of DSM measures for pumpsets by farmers and implementation of High Voltage Distribution System (HVDS).

49. Issue 15: Inter-Unit Accounts

Inter-stores transactions are not being accounted for properly and the materials drawn from the stores of other Circles remain unadjusted without being charged to works or to the stock accounts. All such transactions need to be brought to works account or to stores stock account.

APTRANSCO: In the Audit Report for 2004-05, the Statutory Auditors have commented as follows:

"The provisions carried forward against Inter Unit Balances was Rs.254.89 crores (Credit) as against the inter unit balance of Rs.163.05 crores which is in excess and required to be written back (Schedule-26(e))".

The action for writing off the Inter-Unit balances against the provision available is being taken up in final 3rd Transfer Scheme and necessary action is also being taken to follow the procedure laid down in this regard.

50. Issue 16: Contingencies Reserve and its investments

The illegal provisions for the Contingencies Reserve and its investment should be withdrawn retrospectively by APTRANSCO and DISCOMs.

APTRANSCO: Provision for Contingencies Reserve has been made for meeting contingencies as provided for in the VI Schedule to Electricity (Supply) Act, 1948. If it is not provided each year, the entire capital expenditure incurred will get loaded onto the ARR of a particular year, which will adversely affect the Transmission Tariff by burdening the users.

51. Issue 17: Voltages and Capacitor Banks

(a). Low voltages in the EHT system

Minimum voltages of 118-130 KV and 208-210 kV are observed in Chilkapalem substation. What are the tail-end voltages on the 11 kV feeder emanating from 33 kV substations which are incidental on this EHT SS?

APTRANSCO: Tail-end voltages (during peak hours and off-peak hours) on the 11 kV feeder emanating from 33 kV substation, which are incidental on 132 kV Chilkapalem SS are within permissible limits of 11.66 kV to 10.01 kV (+ 6%, - 9%).

(b). Capacitor Banks

Substation-wise availability of capacitor banks with the reactive compensations during the peak period in both Khariff and rabi seasons and in peak summer may be furnished.

APTRANSCO: The capacitor banks will be in service during all seasons of peak period of demand subject to voltage profile at the feeding end. There is improved voltage profile throughout the State due to the existence of these capacitor banks. Of the total 6393 MVAR capacity, 2690 MVAR capacity is installed in EHT substations.

PART – VII

STAFF PRESENTATION AND LICENSEE'S RESPONSE THERETO

Commission Staff Presentation

52. During the public hearing the Commission Staff made a presentation to the Commission on their analysis of the ARR/ERC filings and tariff proposals of the licensee. The important issues raised by the Commission Staff and the Licensee's replies thereto are depicted in this Part.

SLDC Charges

53. The filings of APTRANSCO for FY 2006-09 are a combined filing for transmission and SLDC activities intended to recover its entire ARR/cost for each year from both transmission tariff and SLDC charges. The staff are of the opinion that the TTR stipulates that the ARR filings should be for fixation of the transmission tariff for the use of the network and the Commission will fix SLDC charges independently.

Response of APTRANSCO: No response

Design of Transmission Tariff

54. The Staff commented that as per the Regulation, transmission tariff is to be determined on the basis of 'contracted capacity' of the users of the network. A user of transmission system will contract for its peak capacity without reference to generation capacity. APTRANSCO has proposed the transmission tariff by allocating costs on the basis of generation capacity.

Response of APTRANSCO: Transmission costs and SLDC charges may be recovered along the lines followed by PGCIL. PGCIL determines and recover its transmission charges per kW of peak demand of its beneficiaries and since there is uncertainty in assessing the number of open access consumers, the entire transmission and SLDC costs will be recovered from the distribution licensees. Charges so fixed will also be levied on open access consumer with adjustments made at the year-end.

Computational differences in ARR

55. Differences in computational methodology of the Staff and APTRANSCO were presented. First, the PGCIL costs were transferred to distribution licensees from the ARR of APTRANSCO and SLDC costs were removed. Second, advance against depreciation (AAD) was not reckoned in the calculations in accordance with the Tariff Policy. Similarly the provision for Contingencies Reserve was not provided, as it is not provided for in the TTR. Third, the Staff have considered debt-equity Ratio at 75:25 as being more representative of prevailing conditions.

Response of APTRANSCO: On the differences in computational methodology, APTRANSCO submits that as regards debt-equity ratio, the ratio of 70:30 as filed be maintained as otherwise it will impact the flow of investments into the sector especially for interim financing of deficits which do not normally occur in the course of business. APTRANSCO strongly feels that AAD should not be denied to it as it is part of the CERC depreciation norms that have been provided in the TTR.

PART – VIII

COMMISSION'S ANALYSIS ON SUBSTANTIVE ISSUES

Contracted capacity Vs Allocated capacity

56. As per the TTR, specifying the terms and conditions for determination of tariff for transmission of electricity, transmission tariff (Rs. /kW/month) is to be based inter-alia on the total contracted capacity in kW of the transmission system by all long-term users. However, in respect of the distribution licensees, APTRANSCO in its filings has used their allocated capacity instead of the contracted capacity.

57. Clause 20.2 of the aforementioned TTR provides that each transmission user, including the distribution licensees, shall have to execute an agreement in terms of the Commission's Open Access Regulation (Regulation No.2 of 2005) mentioning therein inter-alia the contracted capacity with APTRANSCO. The Commission notes with regret that the distribution licensees have not entered into such agreements with APTRANSCO.

58. With a view to determining the Transmission tariffs appropriately for the subsequent control period, the Commission directs that:

APTRANSCO shall bring to the notice of the distribution licensees the requirement of entering into agreements with it in terms of clause 20.2 of the Commission's TTR duly mentioning therein, inter-alia, their contracted capacity before 30th September 2006.

59. In the absence of the agreements, the Commission accepts the proposal of APTRANSCO to determine the Transmission Tariff for the control period on the basis of the allocated capacity.

PGCIL costs:

60. A number of objectors have pointed out that the costs related to the Transmission of electricity by the Power Grid Corporation of India Limited (PGCIL) is a charge related to power purchase costs of distribution licensees with no correlation with the intra-State transmission costs of APTRANSCO and should therefore not be allowed to APTRANSCO.

61. The objections also endorsed by the Commission Staff in their presentation, are eminently correct and are accepted.

Contingencies Reserve:

62. The Contingencies Reserve was created in pursuance of the provisions of the Sixth Schedule to the Electricity (Supply) Act, 1948, from the revenues of the licensees at the rate of not less than 0.25% and not more than 0.50% of the original cost of fixed assets (OCFA) provided that such appropriations to the Reserve will cease as and when the accumulations reach 5% of OCFA. The stipulated ceiling of 5% has not been reached in case of any of the licensees in the State. The Electricity (Supply) Act, 1948, was repealed by the Electricity Act, 2003, which came into force w.e.f 10.06.2003.

63. While finalizing the TTR, the Commission carefully considered the continuance or otherwise of this Reserve and decided that no further contributions be made to it w.e.f FY 2006-07. Appreciating simultaneously, however, that the minimal cushion so far available to the licensees through this Reserve did serve some purpose, the Commission decided not to disband the Reserve altogether.

64. The Tariff Policy notified by the GoI on 06.01.06 i.e., after the issue of the aforementioned TTR on 30.11.2005, lays down that the Contingencies Reserve should be drawn up only with prior approval of the Commission and only in the event of contingency conditions specified

by the Commission through Regulations. Pending issue of an appropriate Regulation, therefore, the Commission reiterates its earlier directive with a modification as regards to allowing some freedom to the licensees to go in for, if they so desire, some more remunerative investments. The Commission accordingly directs that:

> ***The contributions towards Contingencies Reserve must be invested in securities authorised under the Indian Trusts Act, 1882, within a period of six months from the close of the year of account in which the appropriation is made. Any drawals from the Reserve can be made only to meet the emergent expenditure required to restore the system after damage caused by natural calamities, fire accidents, etc and restore supply. Such drawals should be reported to the Commission within 15 days with details of the damage to the system.***
>
> ***Should the licensee, however, desire to invest the accumulations in the Reserve in securities/investments other than those authorised under the Indian Trusts Act, it must seek prior approval of the Commission indicating inter-alia the securities/instruments in which it proposes to invest the funds and the investment ratings of those securities/investments from at least two reputed rating agencies.***

Depreciation:

65. APTRANSCO has in its filings claimed depreciation at the rates specified by CERC plus AAD in accordance with the provisions of CERC Regulation dated 26th March 2004 on Terms and Conditions of Tariff, as stipulated in the TTR issued by the Commission. The Commission Staff on the other hand, relying upon the Tariff Policy notified by the GoI on 06.01.06, have proposed that the licensees be allowed depreciation at the rates specified by the CERC as above, but not the AAD as the Tariff Policy frowns upon the AAD being allowed.

66. The conclusion arrived at by the Commission Staff is not acceptable: while it is correct that the Tariff Policy does not favour AAD being allowed what it also specifically lays down is that the rates of

depreciation to be notified by CERC should be such that there is "no need" for any advance against depreciation.

67. Depreciation enables a licensee to meet it's obligations for repayment of long-term loans availed for creating capital assets. Allowing the licensee the low rates of depreciation specified by CERC, without the component of AAD could leave the licensee financially distressed inasmuch as he may have to look elsewhere for additional financing to meet his repayment liabilities. In the process, his creditworthiness could also get adversely affected. In this view of the matters, the Commission is left with mainly two choices: one, that it adopts the existing CERC formulation in toto i.e. comprising both depreciation and AAD or, two, goes in for the erstwhile formulation prescribed by the Ministry of Power (MoP), GoI.

68. The Commission has carefully considered this issue. Considering that the CERC is yet to come up with the revised rates of depreciation as envisaged in the Tariff Policy, the Commission is of the view that no useful purpose will be served by going in for any ad hoc arrangement, by now adopting the existing CERC rates (depreciation plus AAD) only to switch over later to the new CERC formulation. Accordingly, in exercise of powers vested with it under the provisions of clause 24.2 of TTR, the Commission in relaxation of clause 15.2, thereof, has decided to allow APTRANSCO insofar as the present control period is concerned depreciation at the MoP rates as hithertofore.

Return on Capital Employed Vs Return on equity

69. A number of objectors have raised questions on the RoCE approach adopted by the Commission which, according to them, allows licensees a higher RoE than that generally admissible. The concern apparently flows from the CERC norm of allowing RoE at 14% to generation and transmission utilities (for Distribution, it has to be higher considering the risks involved). A specific reference has also been made to the RoCE

computations of APTRANSCO, the transmission licensee, in its ARR filings for FY 2006-07, concluding that if the interest component is excluded therefrom, the residuary return works out to a high 20.88% on the licensee's equity. Many of the objectors have also simultaneosly pleaded that the licensees should not be allowed to forgo the RoE, as proposed in their filings.

70. At the very outset, the Commission allays the apprehension of the objectors that it may indeed accept the offer of the licensees to forgo the RoE. The Commission is of the firm belief that a reasonable return is sine qua non for the health of the licensees in general and the electricity sector, in particular. The Commission has therefore duly factored the cost of equity while laying down the formula for computation of RoCE.

71. Coming to the specific instance referred to above, even after assuming the computations to be correct though full details are not available, the Commission like to point out that the Cost of equity (return related) component is high in percentage terms because of the low equity base of the licensee, a GoAP-owned utility. Further, the said high return is what appears in the filings and not what is allowed by the Commission. The Commission for instance, has allowed the normative equity component as only 25% as against 30% in the licensee's filings. This, too, brings down the RoE. One pertinent fact that tends to get overlooked is that were the GoAP to augment their equity in APTRANSCO to the level of 30% allowed by CERC, the RoE as computed by the objectors would cease to look high. Also, the investments are not confined to debt and equity alone; internal accruals are often invested in the business.

72. Another major factor in favour of allowing a reasonable return irrespective of the quantum of equity, is that if that be not done, the licensee will not have much interest in running his business more efficiently and providing better service to the consumer. For example, in an extreme case of a licensee with a fully debt-funded capital structure, the licensee will not be entitled to a single paisa as return.

The extent of his interest in running his business efficiently can be well imagined.

73. It is indeed possible that a licensee under RoCE may at times earn a higher RoE, but it is not that the consumer gains nothing in the bargain. Some of the gains to the consumer do not however, appear in the balance sheets. The first gain to the risk is borne by the licensee, protecting the consumer from the risk of interest rates going up during the control period. On the interest aspect, the consumer also gains in another way, inasmuch as that the licensee will have a vested interest in redesigning his capital structure and would endeavour to earnestly negotiate for better borrowing term and /or go in for loan-swapping, wherever possible, to reduce his interest costs, the benefit of which will be passed to the consumers in the subsequent control period(s). The Licensee will also have a vested interest in early completion of the projects / schemes if only to get than included in his regulated rate Base at the earliest to earn him the RoE on normative basis. This too benefits the consumer.

74. Summing up, therefore, RoE is a mechanical approach assuring as it does to the licensee a fixed return on equity and interest as per the actuals, with no incentive to him to reduce its interest costs. The RoCE approach on the other hand allows the licensee to choose own capital structure and in the MYT framework, where the costs of debt and equity are frozen upfront for the entire control period to provide inter-alia for regulatory certainty, we necessarily have to move away from the 'actuals' towards the 'normative'.

75. In any case, the Commission will be revisiting the whole issue before the commencement of the next control period.

Debt-equity ratio:

76. APTRANSCO considered 70:30 as the debt-equity ratio for computing the RoCE. The debt-equity ratio is a key input or decision factor for determining the required returns of the licensee and is largely based on the risks that are inherent in the business. CERC while determining the terms and conditions for determination of tariff for inter-state transmission of electricity has adopted 70:30 as the debt-equity ratio and also specified that in case the equity is less than 30% the actual debt-equity ratio would be considered in the tariff determination.

77. The Commission considers a debt-equity ratio of 75:25 as more appropriate to the Transmission business for the control period under consideration. The decision has been on various factors especially the existing debt-equity ratio of the licensee, future investment and financing plans, capital structure prevailing in the preceding years and the prevailing market conditions. The Commission intended to incentivise the transmission licensee for bringing in better financial leverage and efficiency gains into the sector and this approach would be consistent with the Multi-Year or Performance based regulation. This ratio should enable the financial market participants and the licensee to respond and make appropriate decisions. Hence, for the first control period the Commission has adopted 75:25 as the debt-equity norm and the same norm would be considered for each year of the control period.

Availability of copies of ARR/Tariff filings:

78. It has been requested that copies of ARR/tariff filings should be made available at all the district headquarters. The Commission accepts the request and directs that:

The Licensees shall henceforth make available copies of their ARR/Tariff filings available at all the district headquarters.

Transmission costs on MW – KM basis:

79. One of the objectors has stated that as per para 7.1(2) of the Tariff Policy notified by the GoI on 06.01.06, the CEA/CERC have to announce the transmission tariff for PGCIL system on MW-KM basis with effect from 01.04.06. It has been contended that the costs for AP will come down, as the State is conveniently located and that even if there is delay in announcement of such tariff, the benefit should be allowed with effect from 01.04.06.

80. The Commission would decide upon and take suitable action on such tariff as and when developed by CERC after taking into consideration the advice of the CEA, as contemplated in the Tariff Policy.

Wheeling agreements:

81. A number of objectors have contended that insofar as wheeling (which term was earlier used and accepted as to include the transmission of electricity through both the transmission and distribution network of the licensees and is now treated as a separate activity in the Electricity Act, 2003, as relating to the distribution networks alone) agreements entered into prior to the coming into force of the Electricity Act, 2003, and in pursuance of the specific policy directions of the Government continue to subsist since the previous order of the Commission to levy wheeling charges on the parties concerned has been set aside by the Hon'ble High Court. It has also been pointed out that the term 'wheeling' in such agreements includes transmission of electricity.

82. The Commission recognizes the fact that the term 'wheeling' earlier used does include intra-State transmission. It also clarifies that while it is laying down the transmission tariff in this Order and the wheeling charges for use of the distribution systems of the distribution licensees separately, the tariffs as determined by it shall be subject to the orders of the Hon'ble Supreme court in the appeals pending before it and orders of the Hon'ble High Court in the writ petitions pending before it.

Investments:

83. APTRANSCO has projected an ambitious investment program of Rs.3321.73 Crores for the control period. The annual investments proposed appear to be unrealistically high when seen in the light of the capital expenditure incurred by APTRANSCO in previous years.

84. The Commission would like to point out that such unrealistically high projections of investments tend to give rise to a number of comments on the filings of the licensees, including the one that the proposed reduction in transmission losses is not commensurate with the level of investments. It is pertinent to mention here that the transmission investments are not specifically and necessarily linked to reduction of transmission losses. The investments required are mainly for system expansion, upgradation and replacement, and evacuation of power from new generation sources, in addition to removing the transmission constraints in meeting the forecast demand. Based on the review of the physical and financial progress of schemes the Commission has trimmed the capital expenditure to realistic levels as follows:

Table 7: Capital Expenditure

Financial Year	APTRANSCO	APERC
2006-07	887.93	550.08
2007-08	1225.42	559.10
2008-09	1208.38	553.86
Total	**3321.73**	**1663.04**

85. In regard to the investments, it is also important that the projects / schemes taken up are completed on schedule so that the full benefits therefrom, as envisaged, flow to the consumers quickly, and the consumer is also not saddled with avoidable cost overruns due to the time overruns in the shape of extra interest during construction (IDC), etc. The Commission accordingly directs that:

The licensee shall take all possible measures to ensure that the projects / schemes taken up are completed on schedule. In this regard, the Commission clarifies that it will not allow any interest during construction for delays exceeding one month and three months in respect of completion of projects / schemes with the completion schedules of up to one year and more than one year, respectively, unless the Commission's approval for extension in the completion schedules is obtained in advance.

Sharing of Gains and Losses:

86. In accordance with the provisions of the TTR, the gains and losses in respect of controllable items of ARR will be reviewed upon the completion of the control period and appropriately adjusted in the revenue requirement for the next control period.

87. In case of *force majeure* for controllable items, however, APTRANSCO can request a review any time during the control period. The Commission can also intervene *suo motu* for a review based on forced majeure conditions. For this purpose, a 25 percent or higher variation from approved revenue requirement will be considered as force majeure. The Commission directs that:

> **APTRANSCO shall file the figures of actual costs and revenues for each quarter within three weeks of the close of the quarter to facilitate a review of the variations in the revenue requirements. For this purpose, the Commission will issue an appropriate format for filing of information relating to each item of the ARR**

PART IX

Determination of Transmission Tariff for the Control period

88. The Commission has examined the ARR/ERC and the FPT (filing on proposed tariffs) of APTRANSCO, and indicates herein the areas where the computations of the Licensee are found to be incorrect or unacceptable, with reasons therefor and the Commission's alternative computations. In this order, the Commission will determine the ARR for the Transmission business and accordingly fix the transmission tariffs for each year of the control period in accordance with clause 3 of the TTR. The SLDC charges will however, be fixed only for the year 2006-07 after duly examining the costs as indicated by APTRANSCO in the Allocation Statement filed.

Rate Base:

89. The Rate Base for the purpose of computing the Return on Capital Employed (RoCE) will consist of the investments completed and capitalized during the year and the proposed asset creation expected during the ensuing year after adjusting for depreciation set aside for the projects to be capitalized and user contributions pertaining to the proposed new investments. APTRANSCO has proposed, for its Transmission business, base capital expenditure projections in its ARR filings, an amount of Rs.514.99 Crores as Revised Estimate (RE) for FY 2005-06 and Rs.807.66 Crores for FY 2006-07, the first year of the Control period Rs.1126.88 Crores for FY 2007-08 and Rs.1122.34 Crores for FY 2008-09.

90. The Commission has examined in detail the capital expenditure projections proposed by the Licensee. Based on the physical and financial progress of schemes / projects during FY 2005-06 and taking into consideration the status of project planning, procurement/tendering process of works yet to commence, etc only those investments that are

likely to be completed and thereby added on to fixed assets during the control period have been accepted for inclusion in the Rate Base.

Original Cost of Fixed Assets:

91. The licensee has projected the Original Cost of Fixed Assets (OCFA) for FY 2006-07 at Rs.4871.08 Crores based on the closing balance of Rs.3974.94 Crores of Gross Fixed Assets as per the audited accounts for FY 2004-05 to which addition of Rs.896.15 Crores has been claimed towards projects completed and capitalized for FY 2005-06. Taking the audited accounts for FY 2004-05 and the earlier years as the basis, the Commission has suitably moderated the additions to the Rate base in FY 2005-06 as per trends of the progress achieved towards project completion, as follows (Details in Annexure – I).

Table – 8: Original cost of fixed assets

(Rs.Crs)

	APTRANSCO			**APERC**		
	2006-07	**2007-08**	**2008-09**	**2006-07**	**2007-08**	**2008-09**
Original Cost of Fixed Assets	5756.21	6975.75	8335.83	5104.74	5616.59	6174.75
At the beginning of the year	4871.08	5756.21	6975.75	4759.74	5104.74	5616.59
Additions during the year	885.13	1219.54	1360.08	345.00	511.85	558.16

Capital outlay – Progress during FY 2005-06

92. In the ARR for Control period FY 2006-07 to FY 2008-09, the APTRANSCO has projected a revised capital outlay (Base expenditure) of Rs.514.99 Crores for FY 2005-06 along with IDC of Rs.43.46 Crores and expenditure capitalization of Rs.35.87Crores, which aggregate to rs.594.32 Crores as total capital expenditure expected to be incurred during FY 2005-06 as against Rs.304.13 Crores reckoned in the Tariff Order for FY 2005-06. The Commission considers this projection to be on the higher side keeping in view the progress of expenditure during the first nine months

of the year, up to December 2005, and considers an amount of Rs.375.31 Crores towards base expenditure, as detailed in the Table below:

Table – 9: REVISED ESTIMATED CAPITAL OUTLAY FOR FY 2005-06

(Rs.Crs)

Sl.No.	Name of the Scheme	APTRANSCO	Actual expenditure up to December 2005	APERC
1	Srisailam Power Transmission System Project	0.70	0.00	0.10
2	Simhadri – Vizag Transmission Scheme	19.00	7.03	19.00
3	Erection of 400KV Sub-stations at Nellore and Chittoor	31.00	10.12	31.00
4	Erection of 400KV Mahaboobnagar sub-stations	14.00	1.69	14.00
5	Short Gestation Transmission Project - I	18.30	15.26	18.30
6	Erection of 400KV Dichpally and Gazwel Sub-stations and Associated Transmission lines	29.00	1.05	1.00
7	Short Gestation Transmission Project - II (Modified as 400KV Narasaropet Sub-station)	1.00	0.25	0.00
8	400KV Ring main around twin cities of Hyderabad and RR District	2.00	0.00	0.00
9	APL-1 main	0.00	0.00	0.00
10	APL – Supplementary	3.00	0.00	1.50
11	Schemes under REC funding	119.98	63.33	104.47
12	Schemes under PFC funding	181.16	58.66	143.60
13	Schemes under DFID funding	1.30	0.00	1.30
14	Twin Cities Transmission Project	0.50	0.00	0.00
15	Normal plan* and Bulk loads	94.03	15.01	41.04
	TOTAL	**514.97**	**172.40**	**375.31**

(*) Comprises of a number of schemes, each costing less than Rs.5 Crores

The amount to be taken to CWIP in respect of the above schemes works out to Rs.442.85 Crores as detailed in the Table below:

Table No – 10: Amounts taken for CWIP for FY 2005-06
(Projected CWIP as on 31.03.2006)

(Rs.Crs)

Particulars	**APTRANSCO**	**APERC**
Base capital expenditure	514.97	375.31
Expenses capitalized	35.87	35.87
Interest (IDC) capitalized	43.46	31.67
TOTAL	594.30	442.85

The projected CWIP as on 31.03.2006 would constitute the Opening Balance for FY 2006-07.

Capital outlay – Projections for FY 2006-07:

93. As regards FY 2006-07, the ARR filings project a Base capital expenditure for Rs.807.66 Crores for FY 2006-07, which together with the expenditure capitalization of Rs.44.12 Crores and IDC of Rs.36.15 Crores aggregates to Rs.887.93 Crores. Based o a review of physical and financial progress of the schemes, the Commission considers an estimated amount of Rs.492.82 Crores as base capital expenditure as against Rs.807.66 Crores projected by the Licensee . The details of schemes are shown below:

Table – 11: Capital expenditure for 2006-07

(Rs. Crs)

S.No.	**Name of the scheme**	**APTRANSCO**	**APERC**
1	Srisailam Power Transmission System Project	0.00	0.00
2	Simhadri – Vizag Transmission Scheme	5.00	5.00
3	Erection of 400KV Sub-stations at Nellore and Chittoor	3.00	3.00
4	Erection of 400KV Mahaboobnagar SS	3.00	3.00
5	Short Gestation Transmission Project – I	12.00	12.00
6	Erection of 400KV Dichpally and Gazwel Sub-stations and Associated Transmission lines	160.00	100.00

S.No.	Name of the scheme	APTRANSCO	APERC
7	Short Gestation Transmission Project – II (Modified as 400KV Narasaropet Sub-station)	32.00	20.00
8	400KV Ring main around twin cities of Hyderabad and RR District	30.00	5.00
9	APL-1 main	0.00	0.00
10	APL – Supplementary	0.00	1.50
11	Schemes under REC funding	154.45	122.11
12	Schemes under PFC funding	187.19	139.21
13	Schemes under DFID funding	0.00	0.00
14	Twin Cities Transmission Project	8.00	1.00
15	Normal plan* and Bulk loads	213.00	81.00
	TOTAL	**807.66**	**492.82**

(*) Comprises of a number of schemes each costing less than Rs.5 Crores.

94. The APTRANSCO shall submit monthly progress reports on physical and financial progress on each of the Schemes as directed earlier in paragraph 390 of Tariff Order 2005-06.

Capital outlay – Projections for FY 2007-08 and 2008-09

95. The Licensee has projected base capital expenditure of Rs.1126.88 Crores and Rs.1122.34Crores for FY 2007-08 and 2008-09 respectively. The Licensee has not clearly established the inadequacy of the existing Transmission capacity or specific Transmission System constraints to meet the forecast peak demand to justify specific capital investments to enhance the Grid capacity. The Transmission schemes proposed are also not supported by adequate system studies data.

96. In respect of evacuation schemes, there is no reliable basis to assume that some of the proposed generating stations will be coming up as per the time schedule indicated in the filing and hence the requirement of corresponding evacuation schemes.

97. In view of the above and based on the past experience about the actual investments made vis-à-vis the projections made, the capital investments for FY 2007-08 and 2008-09 have been accepted at the level of Rs.500 crores for each year. The total CWIP projected for these two

years and the amount considered by the Commission for respective years is indicated below:

Table – 12: Amounts taken for CWIP for FY 2007-08 & 2008-09 (Projected CWIP as on 31.03.2008 and as on 31.03.2009)

(Rs. Crs)

	APTRANSCO	APERC	APTRANSCO	APERC
Base capital expenditure	1126.88	500.00	1122.34	500.00
Interest during construction	51.76	22.97	36.39	16.21
Expenses capitalized	46.77	36.13	49.66	37.65
Total	**1225.41**	**559.10**	**1208.39**	**553.86**

Depreciation and Consumer Contributions:

98. Deductions have been made from the OCFA on account of accumulated depreciation and consumer contributions inclusive of capital grants and capital subsidies received by the Licensee. (Annexure – I)

Table – 13: Deductions to Original Cost of Fixed Assets

(Rs.Crs)

	APTRANSCO			**APERC**		
	2006-07	**2007-08**	**2008-09**	**2006-07**	**2007-08**	**2008-09**
Original Cost of Fixed Assets	**5756.21**	**6975.75**	**8335.83**	**5104.74**	**5616.59**	**6174.75**
At the beginning of the year	4871.08	5756.21	6975.75	4759.74	5104.74	5616.59
Additions during the year	885.13	1219.54	1360.08	345.00	511.85	558.16
Depreciation	**1871.32**	**2049.02**	**2264.54**	**1958.23**	**2246.38**	**2559.18**
At the beginning of the year	1721.08	1871.32	2049.02	1706.00	1975.37	2264.37
For the year	150.24	177.70	215.52	252.23	271.01	294.81
Consumer contributions	**76.40**	**251.40**	**170.39**	**317.80**	**411.79**	**451.79**
At the beginning of the year	76.40	76.40	76.40	302.80	317.80	411.79
Additions during the year	0.00	175.00	93.99	15.00	93.99	40.00

Working Capital

99. Working Capital requirement equivalent to 45 days' O&M expenses as allowed for the year (paragraph 105) has been included in the Rate Base.

Table – 14: Working Capital

(Rs.Crs)

	APTRANSCO			**APERC**		
	2006-07	**2007-08**	**2008-09**	**2006-07**	**2007-08**	**2008-09**
Working Capital	**54.15**	**60.50**	**65.97**	**22.32**	**24.87**	**26.61**
Operation and maintenance expenses	32.13	35.89	39.14	22.32	24.87	26.61
Operation and maintenance stores	22.03	24.61	26.83	0.00	0.00	0.00

Carrying cost vs. Capital cost of O&M stores:

100. APTRANSCO in its filings has claimed Rs.22.03 crores for FY 2006-07, Rs.24.61 crores for FY 2007-08 and Rs.26.83 crores for FY 2008-09 as being equivalent to three months' R&M expenses as additional working capital in the Rate Base. This claim is in addition to 45 days' O&M expenses towards working capital. As per the Transmission Tariff Regulation, the Licensee is entitled to only ' the carrying cost of maintaining an appropriate inventory level of O&M stores'. The Commission after careful examination, considers appropriate level of O&M stores equivalent to thee months of R&M component of O&M expenses as filed by the Licensee for FY2006-07 (Rs15.67 crores), 2007-08 (Rs 18 crores) and 2008-09 (Rs 20 crores) as a special case, since such an inventory should normally be maintained from out of the normal O&M expenses admissible to the Licensee . The Commission clarifies that the Licensee shall be entitled only to the carrying cost (Rs.1.41 crores for FY 2006-07, Rs.1.62 crores for FY 2007-08 and Rs.1.80 crores for FY 2008-09) @ 9% p.a. of this inventory and not any return thereon.

Also, the Commission expects the Licensee to manage its further requirements if any, of O&M stores from its entitlement of working capital itself.

Rate Base for the Control period

101. After the above adjustments, the Regulated Rate Base approved by the Commission for each year of the Control period is as given in the table below.

Table-15: Regulated Rate Base

(Rs.Crs)

	APTRANSCO			APERC		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
Regulated Rate Base	3495.20	4302.41	5441.59	2812.14	2909.87	3078.72

The Commission thus allows Rs.2812.14 crores for FY 2006-07, Rs.2909.87 crores for FY 2007-08, Rs.3078.72 crores for FY 2008-09 as against the Rate Base of Rs.3495.20 crores for FY 2006-07, Rs.4302.41 crores for FY 2007-08, Rs.5441.59 crores projected by APTRANSCO (Details in Annexure-I).

Expenditure

102. The Commission examined the different items of expenditure and has carried out the following corrections:

PGCIL transmission and related costs:

103. PGCIL transmission costs of Rs.194.99 crores for FY 2006-07, Rs.204.74 crores for FY 2007-08 and Rs.214.97 Crores for FY 2008-09 for the control period have been transferred to distribution licensees in consonance with the allocation of power purchase agreements to them, as discussed in paragraphs 60 and 61.

O&M expenses:

104. As per clause 12 of the TTR, the Licensee is required to submit consolidated O&M expenses for the base year (2005-06) as also for the two years preceding the base year and projecting the base year expenses on the basis of the latest audit accounts available, best estimates of the Licensee of the actual expenses for the base year and other factors relevant. The Licensee has however, projected the base year expenses, for further projections for the control period, on the basis of its estimates of the expenses for the base year, 2005-06, alone. Accordingly, the Commission has had to undertake the whole exercise *de novo*. The base norms for O&M cost per bay and per km of line were calculated from the FY 05 audited accounts of APTRANSCO. While doing so, the Commission also noticed that the R&M expenses during the year 2004-05 were abnormally high. After making all necessary adjustments, the Commission arrived at the base year figure for O&M expenses as Rs.166.38 crores (excluding SLDC) for the FY 2005-06 as against Rs.231.88 Crores projected by the Licensee.

105. The O&M cost allowance for transmission is determined on norms for O&M costs per sub-station bay and per km of line length in the transmission network. The base year costs as above yielded the norms of Rs.0.075 crore per substation bay and Rs.16240 per km line length for the base year which inflated at an annual rate of 5% were applied to the number of bays and kilometers of line length for each year of the control period. Projections for the number of bays and Km of line length are based on the capital investment plan considered by the Commission for this Order. On the basis of these norms and the O&M expenses for FY 2005-06, the O&M cost works out to Rs.181.02 crores for 2006-07, Rs. 201.75 crores for FY2007-08 and Rs.215.87 crores for FY2008-09.

Depreciation and Advance Against Depreciation

106. In its filings, APTRANSCO has computed depreciation as also the AAD, in accordance with the provisions of the TTR. The AAD has been taken as the difference between the amount required for loan repayments and the depreciation admissible as per the CERC formulation. As stated earlier in paragraph 68, however, the existing practice of following MoP rates for depreciation is continued. Accordingly, no AAD is provided.

Contribution to Contingencies Reserve

107. Contribution to Contingencies Reserve is not part of MYT principles incorporated in the TTR and is not included as part of expenditure, as discussed in the paragraph 64.

Special Appropriation

Adjustments pertaining to previous years

108. On the basis of audited accounts for the year 2004-05, adjustments are required in respect of the following items to the extent of the amounts noted against each, in terms of the principles laid down in paragraph 416 of Tariff Order for FY 2005-06:

a) Interest and Finance Charges (-) Rs. 106.31 Crores
b) Depreciation (-) Rs. 12.10 Crores
c) Other Income (-) Rs. 52.43 Crores

109. Accordingly, the total special appropriation works out to (-) Rs. 170.84 crores and the same has been apportioned over three years of the control period to reduce the impact on cash flows for the licensee.

Total expenditure:

110. The total expenditure after the above adjustments is Rs.342.03 crores for FY 2006-07 as against Rs. 520.50 crores claimed by the Licensee. For

FY 2007-08, the Commission considers as appropriate an expenditure of Rs. 380.71 crores as against Rs. 650.77 crores filed by APTRANSCO. The expenditure allowed for FY 2008-09 is Rs. 417.19 crores as against the filings of Rs. 803.02 crores made by the Licensee.

Table - 16: Expenditure for FY 2006 – 09 for Transmission Activity

(Rs. crores)

	APTRANSCO			APERC		
	2006-07	**2007-08**	**2008-09**	**2006-07**	**2007-08**	**2008-09**
PGCIL Transmission Costs	167.85	176.24	185.05	0.00	0.00	0.00
a) Operation and Maintenance Expenses	233.72	261.13	317.44	181.02	201.75	215.87
b) Carrying cost of O&M Stores	0.00	0.00	0.00	1.41	1.62	1.80
Depreciation	150.24	177.70	215.52	252.23	271.01	294.81
Advance Against Depreciation	34.57	116.79	182.93	0.00	0.00	0.00
Prior Period Expenses/(Income)	0.00	0.00	0.00	0.00	0.00	0.00
Interest & Finance Charges*	0.00	0.00	0.00	0.00	0.00	0.00
Income Tax	0.00	0.00	0.00	0.00	0.00	0.00
Contribution to Contingency Reserve	14.39	17.44	20.84	0.00	0.00	0.00
Special Appropriation	0.00	0.00	0.00	-56.95	-56.95	-56.95
Less Expenses Capitalized						
IDC Capitalised	36.15	51.76	36.39	0.00	0.00	0.00
O&M Expenses Capitalised	44.12	46.77	49.66	35.20	36.13	37.65
Net Expenditure	520.50	650.77	803.02	342.52	381.30	417.89

* Transferred to ROCE in Table No.18.

Revenue requirement

111. The revenue requirement for the Transmission business of APTRANSCO approved by the Commission is Rs. 615.29 crores for FY 2006-07, Rs. 664.09 for FY 2007-08 and Rs. 717.99 crores for FY 2008-09.

Table - 17: Revenue requirement for transmission business for the Control Period

(Rs.Crores)

	APTRANSCO			APERC		
	2006-07	**2007-08**	**2008-09**	**2006-07**	**2007-08**	**2008-09**
Return on Capital Employed	205.48	272.34	323.98	288.24	298.26	315.57
Total Expenditure	520.50	650.77	803.02	342.52	381.30	417.89
Non Tariff Income	13.97	13.97	13.97	15.47	15.47	15.47
Revenue Requirement	712.01	909.14	1113.03	615.29	664.09	717.99

Return on Capital Employed:

112. Return on Capital Employed (RoCE) is estimated taking into account the debt equity ratio of 75:25 as appropriate after examining the current debt-equity structure of the Licensee and the risks involved in the Transmission business. The Commission reiterates that return on equity will continue to be provided being a prerequisite for the health of the sector. Interest cost on debt at 9% and return of equity of 14% are factored in computing the Weighted Average Cost of Capital (WACC). This, for the transmission business, computed on the approved Rate Base works out to Rs. 288.24 crores for FY 2006-07, Rs. 298.26 crores for FY 2007-08 and Rs. 315.57 crores for FY 2008-09.

Network usage forecast

113. In its Resource Plan for the first control period, APTRANSCO has made a Transmission Load Forecast to estimate its investment requirements. It has considered the following two major contributing factors for its further investment requirements:

1. Generation capacity additions within the State requiring evacuation

Table - 18: Generation Capacity Additions

(MW)

2006-07	2007-08	2008-09
1,617.60	351.60	811.60

2. Growth in demand of electricity at different load centers during the first Control Period requiring expansion of transmission system

Table – 19: Peak Demand Estimates for the Control Period

(MW)

Anticipated Peak Demand	2006-07	2007-08	2008-09
APEPDCL	1312	1437	1518
APCPDCL	4003	4303	4501
APNPDCL	1541	1587	1599
APSPDCL	1899	2073	2181
Total for all 4 distribution Licensees	8755	9400	9799
Actual Grid Demand	9119	9781	10185

APTRANSCO expects to wheel energy as shown in the table below including 626, 772.89 and 910.79 MWs for third parties Open Access Users for FYs 2006-07, 2007-08 and 2008-09, respectively:

Table – 20: Capacity to be wheeled

(MW)

	FY 2006-07	FY 2007-08	FY 2008-09
Total Capacity to be wheeled	12036.00	12402.00	15376.00
Wheeling of Third Parties / Open Access Users	626.00	772.89	910.79

Transmission losses

114. Transmission losses projected by the Licensees are modified to the extent given below. The Commission examined the band proposed by APTRANSCO for the tolerable variance of losses with reference to the

target of +/- 0.3%. The Commission does not accept the band as the proposed reduction in transmission losses in the successive years is only 0.1% of the total energy handled. A band of 0.3% as proposed eliminates grant of any incentives or levy of penalties as envisaged in the Transmission Tariff Regulation.

115. APTRANSCO has proposed the transmission loss targets of 4.5%, 4.4% and 4.3% for the year FY 07, FY 08 and FY 09 respectively. The Commission examined the scope afforded by optimizing the operation of transformers in service during non-peak hours period in terms of possible additional loss reduction. The revised transmission loss targets accordingly set out for Control Period are given in the table below:

Table -21: Transmission Loss Trajectory for the Control Period

	APTRANSCO			APERC		
	2006-07	**2007-08**	**2008-09**	**2006-07**	**2007-08**	**2008-09**
Lower Value of the Band	4.20%	4.10%	4.00%	4.35%	4.20%	4.10%
Average Transmission Loss	4.50%	4.40%	4.30%	4.45%	4.30%	4.20%
Upper Value of the Band	4.80%	4.70%	4.60%	4.55%	4.40%	4.30%

Provisional billing shall be on average transmission loss subject to settlement as per actuals.

116. The following incentives are provided for improved performance of APTRANSCO towards reduction of transmission losses.

i) For FY 06-07 - 25% of average variable cost of energy saved beyond the lower value of the target range

ii) For FY 07-08 - 35% of average variable cost of energy saved beyond the lower value of the target range

iii) For FY 08-09 - 45% of average variable cost of energy saved beyond the lower value of the target range

This being the first Control Period, no penalties are proposed to be levied in case the actual losses are higher than the target range.

PART X
TRANSMISSION TARIFF FY 2006-07, FY 2007 – 08, FY 2008-09

117. The Revenue requirement for transmission business for each year of the control period as approved shall be recovered by APTRANSCO from the user of the transmission system of the State. Clause 20 of the TTR specifies that the tariff shall be determined in accordance with the following formula:

TR=Net ARR / (12*TCC)

Where:
TR: Transmission Rate in Rs. / kW / Month
Net ARR: Net ARR as determined by the Commission

TCC: Total Contracted Capacity in kW of the Transmission system by all Long Term Users

118. As mentioned in paragraph 113, the total capacity to be wheeled by APTRANSCO during the control period is 12036 MW in FY 2006-07, 12402 MW in FY 2007-08 and 15376 MW in FY 2008-09, inclusive of the capacity to be transmitted for persons other than the Distribution Licensees. The table below summarizes the approved revenue requirement for the three years of the Control period and the consequent transmission tariff. On the basis of the total capacity to be transmitted / wheeled for each year the Transmission tariff is determined (Annexure E) as Rs. 42.60 /kW/month for FY 2006-07, Rs. 44.62 /kW/month for FY 2007-08 and Rs. 38.91 /kW/month for FY 2008-09, as follows:

Table – 22: TRANSMISSION TARIFF FOR THE CONTROL PERIOD

	APTRANSCO			**APERC**		
	2006-07	**2007-08**	**2008-09**	**2006-07**	**2007-08**	**2008-09**
Total Capacity for Transmission (MW)	12036	12402	15376	12036	12402	15376
Revenue Requirement (Rs.Cr)	712.01	909.14	1113.03	615.29	664.09	717.99
Tariff, Rs/kW/ Month ((2 / (1X12))*1000)	49.30	61.09	60.32	42.60	44.62	38.91

Note:

1. The users of the network in addition bear energy losses in transmission in kind.

2. The Transmission charges payable and the energy losses to be borne shall be related to the contracted capacity in KW, at the entry point.

3. The other conditions applicable for levy and collection of these charges shall be as per the provisions of the Andhra Pradesh Electricity Regulatory Commission (Terms and conditions of Open Access to Intra-State Transmission and Distribution networks), Regulation, 2005 (No.2 of 2005) and the Balancing and settlement code, in force.

4. The rates passed by the Commission shall, however, be subject to the orders of the Hon'ble Supreme Court in the pending appeals, which have arisen out of interpretation of the provisions of the A.P. Electricity Reform Act, 1998, and have been the subject matter of the order passed by the Hon'ble High Court. This order shall be read subject to any, orders, directions, etc., that may be issued by the Hon'ble High Court and the Hon'ble Supreme Court in the pending proceedings.

PART XI
SLDC CHARGES FOR FY 2006 – 07

119. The revenue requirement for SLDC for FY 2006-07 has been filed as Rs. 53.99 crores. This includes PGCIL charges of Rs. 27.14 crores. The Commission has excluded PGCIL charges and adopted the O&M charges for SLDC as filed. The Revenue requirement for SLDC activity for FY 2006-07 so accepted by the Commission is Rs. 26.85 crores, to be recovered from wheeled units as per the table given below:

Table – 23: SLDC charges for FY 2006-07

	APTRANSCO	APERC
Generation Capacity (MW)	12036	12036
Revenue Requirement (Rs.Cr)	53.99	26.85
SLDC charges (Rs/kW/Month)	3.74	1.86

Note : These charges are payable as per the provisions of the Electricity Act, 2003, by the generators and licensees engaged in the intra-state transmission of electricity.

120. This order is signed by the Andhra Pradesh Electricity Regulatory Commission on the Twenty third day of March 2006

sd/-	sd/-	sd/-
(SURINDER PAL)	**(K.SREERAMA MURTHY)**	**(K.SWAMINATHAN)**
MEMBER	**MEMBER**	**CHAIRMAN**

ANNEXURE – A

LIST OF DIRECTIVES BROUGHT FORWARD AND REQUIRING CONTINUING COMPLIANCE

Energy Audit

1. APTRANSCO shall conduct regular and thorough energy audit to ensure accountability. A copy of the Energy Audit Reports of each DISCOM to be filed with the Commission on a quarterly basis.

2. The Commission directs that the Licensee shall henceforth reconcile the energy accounting figures annually and file reconciliation statements along with the audited Annual Accounts every year.

Capital Investments

3. Considering the importance of capitalization of works, the Commission lays down the following requirements to be fulfilled before accepting inclusion of the value of a capitalized work in the OCFA:

   a) On completion of a capital work, a physical completion certificate (PCC) to the effect that the work in question has been fully executed, physically, and the assets created are put to use, to be issued by the concerned engineer not below the rank of Superintendent Engineer.

   b) The PCC shall be accompanied or followed by a financial completion certificate (FCC) to the effect that the assets created have been duly entered in the Fixed Assets Register by transfer from the CWIP register to OCFA. The FCC shall have to be issued by the concerned finance officer not below the rank of Senior Accounts Officer.

c) The above-mentioned certificates have to be submitted to the Commission within 60 days of completion of work, at the latest.

The Commission may also inspect or arrange to inspect, at random, a few of the capitalized works included in the OCFA to confirm that the assets created are actually being used and are useful for the business.

ANNEXURE – B

LIST OF FRESH DIRECTIVES
2006-2009

Contracted capacity Vs Allocated capacity

1. APTRANSCO shall bring to the notice of the distribution licensees the requirement of theirs entering into agreements with it in terms of clause 20.2 of the Commission's Transmission Tariff Regulation mentioning therein, inter-alia, their contracted capacity before 30th September, 2006. (Paragraph 56)

Contingencies Reserve:

2. The contributions towards Contingencies Reserve must be invested in securities authorized under the Indian Trusts Act, 1882, within a period of six months from the close of the year of account in which the appropriation is made. Should the licensee, however, desire to invest the accumulations in the Reserve in securities / investments other than those authorized under the Indian Trusts Act, it must seek prior approval of the Commission indicating inter-alia the securities/instruments in which they propose to invest the funds and the investment ratings of those securities / investments from at least two reputed rating agencies.

   Any drawal from the Reserve can be made only to meet the emergentexpenditure required to restore the system damaged by natural calamities, fire accidents, etc. Such drawals should be reported to the Commission within 15 days with details of the damage to the system.

   (Paragraph 64)

Availability of copies of ARR/Tariff filings:

3. The Licensees shall henceforth make available copies of their ARR/Tariff filings available at all the district headquarters.

(Paragraph 78)

Timely completion of projects/schemes:

4. The licensee shall take all possible measures to ensure that the projects / schemes taken up are completed on schedule. In this regard, the Commission clarifies that it will not allow any interest during construction for delays exceeding one month and three months in respect of completion of projects / schemes with the completion schedules of up to one year and more than one year, respectively, unless the Commission's approval for extension in the completion schedules is obtained in advance. (Paragraph 84)

Variations in revenue requirements:

5. APTRANSCO shall file the figures of actual costs and revenues for each quarter within three weeks of the close of the quarter to facilitate a review of the variations in the revenue requirements. For this purpose, the Commission will issue an appropriate format for filing of information relating to each item of the ARR. (Paragraph 87)

ANNEXURE – C
RATEBASE AND RETURN ON CAPITAL EMPLOYED: FY:2007 – 2009
(Reference: Paragraphs 101 and 112 of the Order)

(Rs.Crores)

		APTRANSCO			APERC		
		2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
1.0	**Assets (1.1+1.2)**	5756.21	6975.75	8335.83	5104.74	5616.59	6174.75
1.1	Opening Balance of OCFA	4871.08	5756.21	6975.75	4759.74	5104.74	5616.59
1.2	Additions during the year	885.13	1219.54	1360.08	345.00	511.85	558.16
2.0	**Depreciation (2.1+2.2)**	**1871.32**	**2049.02**	**2264.54**	**1958.23**	**2246.38**	**2559.18**
2.1	Opening Balance	1721.08	1871.32	2049.02	1706.00	1975.37	2264.37
2.2	Depreciation during the year	150.24	177.70	215.52	252.23	271.01	294.81
3.0	**Consumer contributions (3.1+3.2)**	**76.40**	**251.40**	**170.39**	**317.80**	**411.79**	**451.79**
3.1	Opening Balance	76.40	76.40	76.40	302.80	317.80	411.79
3.2	Additions during the year	0.00	175.00	93.99	15.00	93.99	40.00
4.0	**Working Capital**	**54.15**	**60.50**	**65.97**	**22.32**	**24.87**	**26.61**
4.1	O&M, (45 days' O&M Expenses)	32.13	35.89	39.14	22.32	24.87	26.61
4.2	O&M Stores Inventory	22.03	24.61	26.83	0.00	0.00	0.00
5.0	**Change in Rate Base (1.2 - 2.2 - 3.2)/2**	**367.44**	**433.42**	**525.28**	**38.88**	**73.42**	**111.68**
6.0	**Regulated Rate Base (1.1 - 2.1 - 3.1 + 4 + 5)**	**3495.20**	**4302.41**	**5441.59**	**2812.14**	**2909.87**	**3078.72**
7.0	**Capital Structure**						
7.1	Debt (percent)	70%	70%	70%	75%	75%	75%
7.2	Equity (percent)	30%	30%	30%	25%	25%	25%

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		APTRANSCO			APERC		
		2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
8.0	**Cost of funds**						
8.1	Cost of Debt (percent)	9.12%	9.02%	8.48%	9.00%	9.00%	9.00%
8.2	Return on equity (percent)	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%
9.0	**Cost of Capital ((7.1 X 8.1)+(7.2 X 8.2))**	**10.53%**	**10.17%**	**9.50%**	**10.25%**	**10.25%**	**10.25%**
10.0	**Return on Capital Employed, Rs.Cr (6 X 9)**	**368.20**	**437.64**	**516.89**	**288.24**	**298.26**	**315.57**

ANNEXURE - D
TRANSMISSION CHARGES AND SLDC CHARES AS FILED BY APTRANSCO
(Reference: Paragraphs 22-26 of the Order)

(Rs.Crores)

	2006-07			2007-08			2008-09		
	Transmission	SLDC	Combined	Transmission	SLDC	Combined	Transmission	SLDC	Combined
Expenditure	**600.77**	**53.99**	**654.76**	**749.30**	**58.50**	**807.80**	**889.07**	**62.63**	**951.70**
PGCIL Tranmission Costs	167.85	27.14	194.99	176.24	28.50	204.74	180.05	29.92	214.97
Operation & Maintenance Costs	233.72	26.85	260.57	261.13	30.00	291.13	284.73	32.71	317.44
Depreciation	150.24	0.00	150.24	177.70	0.00	177.70	215.52	0.00	215.52
Advance Against Depreciation	34.57	0.00	34.57	116.79	0.00	116.79	182.93	0.00	182.93
Prior Period Expenses/ (Income)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interenst & Finance Charges	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Income Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Contribution to Contingency Reseve	14.39	0.00	14.39	17.44	0.00	17.44	20.84	0.00	20.84
Special Appropriation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Expenses Capitalized	**80.27**	**0.00**	**80.27**	**98.53**	**0.00**	**98.53**	**86.05**	**0.00**	**86.05**
IDC Capitalised	36.15	0.00	36.15	51.76	0.00	51.76	36.39	0.00	36.39
O&M Expenses Capitalised	44.12	0.00	44.12	46.77	0.00	46.77	49.66	0.00	49.66
Net Expenditure (11-12)	**520.50**	**53.99**	**574.49**	**650.77**	**58.50**	**709.27**	**803.02**	**62.63**	**865.65**
Return on Capitl Employed	205.48	0.00	205.48	272.34	0.00	272.34	323.98	0.00	323.98
Non Tariff income	13.97	0.00	13.97	13.97	0.00	13.97	13.97	0.00	13.97
Revenue Requirement, Net (13+14-15)	**712.01**	**53.99**	**766.00**	**909.14**	**58.50***	**967.64***	**1113.03***	**62.63**	**1175.66***
Capicity, Tariff and Revenue									
Capacity (MW)	12036	12036	12036	12402	12402	12402	15376	15376	15376

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	2006-07			2007-08			2008-09		
	Transmission	**SLDC**	**Combined**	**Transmission**	**SLDC**	**Combined**	**Transmission**	**SLDC**	**Combined**
Transmission Charges / SLDC Charges (Rs./KW/Per month)	49.30	3.74	53.04	61.09	3.93	65.02	60.32	3.39	63.72
Revenue	712.01	53.99	766.00	909.14	58.50*	967.64*	1113.03*	62.63	1175.66*

(*) - The difference of Rs.0.01 crores between these figures and those appearing in paragraph 23 of the order is due to rounding

ANNEXURE – E

APERC COMPUTATIONS OF TRANSMISSION AND SLDC CHARGES

(Reference: Paragraph 118 of the Order)

(Rs.Crs)

	2006-07		2007-08	2008-09
	Transmission	**SLDC**	**Transmission**	**Transmission**
Expenditure	377.71	26.85	417.44	455.54
PGCIL Transmission Costs	0.00	0.00	0.00	0.00
Operation & Maintenance Costs	181.02	26.85	201.75	215.87
O & M Stores carrying costs	1.41	0.00	1.62	1.80
Depreciation	252.23	0.00	271.01	294.81
Advance Against Depreciation	0.00	0.00	0.00	0.00
Prior Period Expenses/ (Income)	0.00	0.00	0.00	0.00
Interest & Finance Charges	0.00	0.00	0.00	0.00
Income Tax	0.00	0.00	0.00	0.00
Contribution to Contingency Reserve	0.00	0.00	0.00	0.00
Special Appropriation	-56.95	0.00	-56.95	-56.95
Expenses Capitalized	**35.20**	0.00	**36.13**	**37.65**
O&M Expenses Capitalised	35.20	0.00	36.13	37.65
Net Expenditure (11-12)	**342.52**	**26.85**	**381.30**	**417.89**
Return on Capital Employed	288.24	0.00	298.26	315.57
Non Tariff Income	**15.47**	0.00	15.47	15.47
Revenue Requirement, Net (13+14 -15)	**615.29**	**26.85**	**664.09**	**717.99**

-contd..

	2006-07		2007-08	2008-09
	Transmission	**SLDC**	**Transmission**	**Transmission**
Capacity, Tariff and Revenue				
Capacity, MW	**12036.00**	**12036.00**	**12401.59**	**15375.79**
NPDCL	1908.65	1908.65	1942.16	2440.36
EPDCL	1962.13	1962.13	1998.87	2468.43
SPDCL	2647.12	2647.12	2695.46	3345.87
CPDCL	4892.10	4892.10	4992.21	6210.34
OTHERS (Third Party / Open Access)	626.00	626.00	772.89	910.79
Transmission charges / SLDC charges (Rs/kW/per month)	**42.60**	**1.86**	**44.62**	**38.91**
Revenue	**615.29**	**26.85**	**664.09**	**717.99**