

# **TRANSMISSION TARIFFS**

For the period FY2009-10 to FY2013-14



## **ORDER**

20<sup>th</sup> March 2009

**ANDHRA PRADESH**  
**ELECTRICITY REGULATORY COMMISSION**  
Singareni Bhavan, Red Hills, Lakdi-Ka-Pool,  
Hyderabad - 500 004

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**ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION  
HYDERABAD**

Date: 20-03-2009

*Present*

A. Raghotham Rao, Chairman  
R. Radha Kishen, Member  
C.R. Sekhar Reddy, Member

O.P No. 21 of 2008

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 11.02.2009 (Wednesday) at Hyderabad and having stood over for consideration till this day, the Commission passed the following

**O R D E R**

**Part I: Filing and Order Procedures**

*General*

1. The Transmission Corporation of Andhra Pradesh Ltd. (APTRANSCO) or Applicant is the holder of the Transmission License (License No.1/2000) issued by Andhra Pradesh Electricity Regulatory Commission (APERC) or Commission in the State of Andhra Pradesh under relevant provisions of the Electricity Act, 2003(Act). Further, as per section 39(1) of the Act, APTRANSCO is also the State Transmission Utility (STU). The Commission, to determine the tariff under section 62 for transmission of electricity, has notified on 30-11-2005, the APERC (Terms and Conditions for determination of Tariff for Transmission of Electricity) Regulation (Regulation 5 of 2005), *inter alia* specifying Multi Year Tariff (MYT) Regulatory Framework.
2. In accordance with Regulation 5 of 2005, APTRANSCO filed with the Commission on 29-11-2008 *inter alia* Aggregate Revenue Requirement (ARR), Tariff Proposals and Transmission Loss percent for each year of the MYT Control Period of five years from 2009-10 to 2013-14 (Control Period). Thus, the Commission has to determine the Transmission Tariff for each year of the Control Period, based on the application of the applicant, and as per the Commission's practice after

considering the objections/suggestions received/heard from general public and other stakeholders, on the application.

***Notice calling for objections / suggestions***

3. The applicant was directed to serve a public notice through publication, on 24-12-2008 in two daily newspapers in English and two in Telugu having largest circulation in the State informing the general public that it (the applicant) had made its filings for the Control Period with the APERC as per Regulation No.5 of 2005, and that copies of the filings (together with supporting materials) were available with Chief Engineer/ RAC, Reforms & IT, APTRANSCO, Vidyut Soudha, Hyderabad, and with the Chief Engineer/TL&SS at Visakhapatnam, Vijayawada, Cuddapah, Hyderabad and Warangal for inspection/perusal/purchase by interested persons and that objections/suggestions could be filed on these proposals with the Secretary, APERC, by 27-01-2009.

***Objections/suggestions received***

4. Following the public notice, 67 persons have sent their objections/suggestions to the Secretary, APERC, on the Tariff proposals of the applicant by the due date i.e., 27-01-2009. The Commission directed the applicant vide its letter dated 21-01-2009 to send replies on all the objections/suggestions by 02-02-2009 and also provide a copy of the same to the Objector by the same date duly posting the copies of replies on the applicant's official website.
5. Applicant had been informed of the date and venue of the public hearing on 28-01-2009. The objectors who had expressed their desire to be heard in person were also informed in writing about the venue and the date on which they would be heard. General public were also informed of the date of public hearing through a press release, on 28-01-2009. The objectors who had expressed their desire to be heard in person appeared and represented before the Commission during the public hearing on 11-02-2009 held at Hyderabad. The names of the objectors are given in Annexure-C.

***Hearing***

6. During the hearing:
  - The applicant made an opening presentation at the commencement of the hearing on its filings, as directed by the Commission.

- then, the Commission heard all the objectors desiring to be heard in person; and,
- the applicant gave its responses on the issues raised by the objectors during the hearing.

***Meeting of the State Advisory Committee***

7. Members of the State Advisory Committee (SAC) were provided with the copies of ARR/Tariff filings made by APTRANSCO and certain important issues of the filings were discussed in the SAC meeting held on 19.01.2009.

## Part II: MYT Filings for Control Period

### *General*

8. APTRANSCO filed the Transmission Tariff application consisting of a) Transmission Charge (Rs./kW/month) and b) Transmission Loss percent in kind for each year of the Control Period. The Transmission Charge is to recover the estimated transmission cost for each year of the Control Period. In addition to Transmission Charge, APTRANSCO filed the losses applicable for the users of the transmission system with loss range (upper and lower bands) for each year of the Control Period. The filing contained the details of the generation capacity on which the transmission tariff is proposed to be levied in each year of the Control Period. In the filings APTRANSCO requested the Commission to pass such Order as the Commission deems fit and proper in the facts and circumstances of the case.

### *Revenue Requirement*

9. APTRANSCO filed Rs.10420.90 Cr. as the gross ARR for the entire Control Period while giving the details for each year of the Control Period. The ARR amount for a year refers to the amount that is required for APTRANSCO to meet sum of estimated costs and allowed return on capital employed as per Regulation 5 of 2005, for transmission activity. The required investment is worked out based on a resource plan to meet the forecasted transmission capacity requirement for each year of the Control Period. After deducting the Non-Tariff Income (NTI), the income from sources other than tariff, APTRANSCO placed the net ARR at Rs.9915.91 cr. for the entire Control Period. The details of ARR given in Table-1.

**Table 1: Filings-Net Aggregate Revenue Requirement, FY2009-10 to 2013-14**

Financial Year	Gross Revenue Requirement	Less		Net Aggregate Revenue Requirement
		Expenses Capitalized	Non-Tariff Income	
1	2	3	4	5(2-3-4)
2009-10	1155.40	86.07	25.26	1044.06
2010-11	1639.84	76.22	25.26	1538.36
2011-12	2260.83	68.51	25.26	2167.06
2012-13	2572.28	72.25	25.26	2474.77
2013-14	2792.54	75.61	25.26	2691.66
<b>Total</b>	<b>10420.90</b>	<b>378.66</b>	<b>126.32</b>	<b>9915.91</b>

*Figures are rounded.*



### **Generation Capacity**

10. APTRANSCO estimated the generation capacity (in terms of MW) based on contracted generation capacities by four distribution companies and other generators (such as open access and captive users) who are likely to use the transmission system to transport the electricity to their chosen destinations. The generation capacity arrived in this manner will be the base on which the proposed Transmission Tariff is to be levied. The details of the generation capacity in terms of Megawatts filed by APTRANSCO are given in Table-2.

**Table 2: Filings-Generation Capacities, FY2009-10 to 20013-14**

<i>(MW)</i>				
<b>Financial Year</b>	<b>Distribution Companies</b>	<b>Other Generators, Open Access</b>	<b>Other Generators, Third Parties</b>	<b>Total Capacity in the State</b>
1	2	3	4	5(2+3+4)
2009-10	13511	0	462	13973
2010-11	14700	0	462	15162
2011-12	17169	0	462	17631
2012-13	17741	0	462	18203
2013-14	19760	0	462	20222

*Figures are rounded.*

### **Transmission Tariff**

11. The Transmission Tariff Schedule consist of a) Transmission Charge in Rs/MW/Month and b) Transmission Loss percent.
- a) To recover the estimated net ARR, APTRANSCO proposed to levy the monthly Transmission Charge/Rate on Generation Capacities estimated (excluding auxiliaries) for each year of the Control Period. APTRANSCO computed the Transmission Charge by dividing the net ARR with the estimated generation capacity (excluding auxiliaries) for each year of the control period.
  - b) Since the energy drawn by the users from the transmission system is always less than energy injected into system to the extent of transmission losses, APTRANSCO is accountable for energy to the users to the extent of input energy net of transmission losses. APTRANSCO estimated the transmission loss percentage and filed the same for each year of the Control Period.

12. The details of the Transmission Tariff and Transmission Loss Percentage as filed by APTRANSCO are given in Table-3.

**Table 3: Filings: Transmission Tariff Details**

Financial Year	Net Revenue Requirement, Rs. Cr.	Generation Capacity, MW	Transmission Tariff	
			Transmission Charge Rs/kW/Month	Transmission Loss, in (Avg. loss) Percent
1	2	3	4(2/3)	5
2009-10	1044.06	13973	62.27	4.16%
2010-11	1538.36	15162	84.55	4.13%
2011-12	2167.06	17631	102.43	4.10%
2012-13	2474.77	18203	113.29	4.06%
2013-14	2691.66	20222	110.92	4.02%

*Figures are rounded.*

***MYT Loss Reduction Target and System Availability***

13. APTRANSCO as required in Regulation 5 of 2005, filed the transmission loss reduction trajectory and also transmission system availability for each year of the Control Period.
- It contemplated the average loss reduction from 4.16 percent in 2009-10 to 4.02 percent by 2013-14, i.e. the end year of the Control Period,
  - The average loss reduction target as proposed by APTRANSCO is subject to  $\pm 0.3$  variation condition, as the loss band.
  - APTRANSCO further stated the performance parameter of 99.40 percent as System Availability for all the years of the control period.
14. The loss band is further subject to the investment levels as proposed by APTRANSCO. There may be variations in loss reduction path and band proposed by APTRANSCO if there is change in investments. The details are given in Table-4.

**Table 4: Filings: Transmission Loss, Band and System Availability**

*(percent)*

Financial Year	Average Transmission Loss	Transmission Loss, Upper Band	Transmission Loss, Lower of Band	Target System Availability
1	2	3	4	5
2009-10	4.16%	4.46%	3.86%	99.40%
2010-11	4.13%	4.43%	3.83%	99.40%
2011-12	4.10%	4.40%	3.80%	99.40%
2012-13	4.06%	4.36%	3.76%	99.40%
2013-14	4.02%	4.32%	3.72%	99.40%

*Figures are rounded.*

**Conclusion**

- APTRANSCO filing for Transmission Tariff is broadly in conformity with the Regulation 5 of 2005, issued for the purpose of fixation of Transmission Tariff. APTRANSCO requested that the filing may be examined and fix the Transmission Tariff for each year of the control period. The Commission analyzed the filings in detail and determined the costs and capacity for each year of the control period. Based on these workings, the Commission fixed/determined the Transmission Tariff for each year of the Control Period. The Commission analysis on these filings wherever there is a change is detailed in Part V.

### **Part III: Important Issues Raised by General Public and APTRANSCO Responses**

#### ***Annual Report on Accounts/Balance Sheet***

16. Issue: Failure to comply with the mandatory provision in respect of Annual Report on Accounts/Balance Sheet

APTRANSCO: APTRANSCO has been registered under the Companies Act, 1956 and the accounts are being maintained separately with effect from 1<sup>st</sup> February 1999. Section 211 (1) of the Companies Act, 1956 specifies that “every balance sheet of the company shall give true and fair view of the state of affairs of the company and be in the form set out in Part I of Schedule VI or in such other form as may be approved by the Central Government either generally or in any particular case; provided nothing contained in this sub-section shall apply to any company engaged in the generation or supply of electricity for which a form of balance sheet has been specified in or under the Act governing such Class of Company”. The Companies Act 1956 and its applicability to the companies governed by special Acts to insurance, banking, electricity supply and other companies have been discussed at Section 616. The section 616 (c) specifies the provisions of the Companies Act shall apply “to companies engaged in the generation or supply of electricity, except in so far as the said provisions are inconsistent with the provisions of the Electricity (Supply) Act, 1948”. Considering the provisions of the Companies Act, 1956 (stated above), the APTRANSCO has been preparing (since inception from 1999) its Annual Statement of Accounts in the forms prescribed under the Electricity (Supply)(Annual Accounts) Rules 1985, notified by Department of Power, Ministry of Energy, Govt. of India. Further, necessary disclosures are being made in the Annual Statement of Accounts every year in “Statement of Accounting Policies” and also to the Statutory Auditors comments and C&AG’s Comments by way of the Company’s replies. Further Section 185 (2) (d) of the Electricity Act 2003 (came into force from 10-6-2003), specifies, “all rules made under sub-section (1) of section 69 of the Electricity (Supply) Act 1948 (Act 54 of 1948) shall continue to have effect until such rules are rescinded or modified”.

#### ***Depreciation on Fixed Assets in use***

17. Issue: Depreciation on Fixed Assets in Use

APTRANSCO: APTRANSCO has been calculating depreciation as per the depreciation rates notified by the Ministry of Power/Government of India, from time to time.

### ***Special Appropriations***

18. Issue: (a) APTRANSCO claimed a special appropriation of Rs.386.07 Cr besides projections of revenue gap of Rs. 5.79 Cr FY 2008-09, due to unrealistic assessment of expenditure and revenue by APTRANSCO and APERC

APTRANSCO: The revenue gap shown in the objection is the difference between the surplus of Rs.107.76 Cr provided in the tariff order (for both transmission and SLDC put together) and revised estimates based on actuals, is Rs.101.97 Cr. When compared to the total ARR (excluding surplus) Rs.665.25 Cr (as per revised estimates), the reduction in surplus is only Rs.5.79 Cr (0.87% which is less than 1%)

19. Issue: (b) APTRANSCO request for examining the desirability or method of allowing claims for true ups or Special appropriations of a particular financial year in the subsequent year itself instead of at the end of control period for all years

APTRANSCO: This issue is in the purview of APERC

### ***Capital Expenditure***

20. Issue: Does APTRANSCO overcome the problems in achieving the proposed capital expenditure for the current year FY 2008-09 as APTRANSCO showing exaggerated the estimate of capital expenditure for the current year, as it is almost 200% to the actually capital expenditure of FY 2007-08.

APTRANSCO: APTRANSCO proposes the required expenditure every year keeping in view that the whole of the planned schemes will be executed in time for utilization of the targeted expenditure and to meet the completion of the targeted substations in all respects for meeting the load growth in concerned areas. For the past few years, construction of substations and lines are getting obstructed due to number of right of way problems in laying of the lines and land acquisitions for construction of the substations. Due to 9 months standing crops out of 12 months prevailing in a year in coastal areas of the state in particular the execution of works were delayed. Hence APTRANSCO is unable to spend the targeted expenditure in a complete year and the amounts are being spilled over to next

coming years. More over, system improvement schemes are planned for the year 2008-09 particularly in twin cities with GIS substations and connected XLPE cable for which erection cost of each substation is six times of conventional substations. Hence the expenditure from 2008-09 is more when compared to other two years. And also lift irrigation schemes works are covered during the year 2008-09.

***Generation Capacity to be wheeled***

21. Issue: APTRANSCO estimates the generation capacity to be wheeled is 13973 MW in 2009-10 to 20222 MW in 2013-14. Whether the estimated installed generation capacities can be added during the 2<sup>nd</sup> Control Period especially projects like BPL in Ramagundam?

APTRANSCO: GoAP in the letter dated 19.12.2007, has directed APTRANSCO/DISCOM to take further necessary action to reinstate the PPA dated 10.07.2003 with BPL Power Project by annulling the earlier termination dated 09.07.2004 by APTRANSCO. Based on the orders of the GoAP, BPL furnished its proposals for amendments of PPA, wherein the company mentioned that scheduled date of completion shall be within 30 months and 33 months for first and second generating units respectively from the date of achieving financial closer. The amendments of the PPA are under process of finalization. Anticipating the achievement of financial closure of the project by BPL and also based on the schedule COD of 30 months and 33 months of first and second generating units respectively indicated by BPL, APTRANSCO included the BPL Power Project in the Programme of gross capacity addition during the second control period i.e. 2009-10 to 2013-14

***Transmission Losses***

22. Issue: What are the actual achievements of APTRANSCO in reducing Transmission Losses during 1<sup>st</sup> Control Period against the targets fixed Hon’ble Commission. Does the variation of capital expenditure incurred actually during 1<sup>st</sup> Control Period have its impact reduction of Transmission Losses?

APTRANSCO:

<b>Item</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
APERC target	4.45%	4.3%	4.20%
Actual *	4.0%	4.27%	3.89% (Provisional)
* APTRANSCO network losses.			

The variation in Transmission loss achieved by APTRANSCO was not only due to variation in investments incurred but also due to variation in hydel generation and consequent import of power from other states.

### ***Pay and Allowances, and Posts***

23. Issue: (a) Are the Pay and Allowances worked out on the basis of filled up posts only for the 2<sup>nd</sup> Control Period

APTRANSCO: As per Regulation 5 of 2005, Determination of Transmission Tariffs, the O&M cost consists of 'Employee Cost,' A&G' and 'Repairs and Maintenance Cost' has been worked out based on the actual expenditure for base year and projected for the 2<sup>nd</sup> control period of 5 years duly considering the average inflation @ 8.03% (55% of CPI-industrial workers and 45% of WPI-transmission goods) and number of bays and CKT. Hence for the second control period, the pay and allowances are worked out on the basis of existing posts and posts to be filled up to handle the new capacity addition

24. Issue: (b) when nearly 50% posts are lying vacant, where is the necessity for creating four posts of EDs in APTRANSCO afresh? Are the contents of the APSEB Engineers Association representation dated: 5-1-2009 addressed CMD/APTRANSCO regarding promotion of A. Chandra Shekhar Reddy, CGM (CC) to the cadre of ED true. If it is true why is the management of APTRANSCO misusing its authority repeatedly, violating establishment norms and procedures to show undue favors for an individual employee in the organization?

APTRANSCO: As a part of business, the Officials of APTRANSCO in the rank of Executive Director have to interact with different stakeholders, Government and other Private Organizations. At present, there are 19 CE, 2 FA&CCA posts and 1 CGM posts which are feeder cadre posts to Executive Director Posts. Accordingly, it is felt necessary to provide promotional avenues to CE rank personnel and hence, Govt., was addressed for up gradation of 2 CE rank posts as ED on floating basis with flexibility as per needs each time, in addition to the existing 2 ED posts.

### ***Energy Conservation Measures***

25. Issue: (a) what are the measures taken by APTRANSCO for energy conservation following the energy conservations act?

APTRANSCO: ((i) Organized All India Seminar on the topic “Carbon Footprints - Its sources, Strategies and Solutions” jointly with Energy Conservation Mission, Institution of Engineers, AP State Center during November, 2008 with the objective of promoting energy conservation (ii) Observed Energy Conservation Week from 14<sup>th</sup> to 20<sup>th</sup> December, 2008 to create awareness among its employees and consumers (iii) Replaced energy inefficient Tube Lights with Compact Fluorescent Lamps for corridor lighting at Vidyut Soudha (iv) Entrusted the work of fixation of agency for energy audit for Vidyut Soudha to NEDCAP (v) Spread of message of Energy Conservation through posters.

26. Issue: (b) Does APTRANSCO have authority to constitute an energy conservation cell? Does APTRANSCO consult and seek the consent of all proposed organization and the government before issuing an order for creating energy efficiency and conservation cell. Is the above cell formed is functioning? If so, what is the outcome of the functioning? Does APTRANSCO want to continue the above cell or cancel the order?

APTRANSCO: In consultation with CMDs, APTRANSCO has withdrawn the T.O.O issued on 5/09/2008.

27. Issue: (c) It is learnt that there is one Transco-DISCOMs co-ordination body. Is it a permanent body? Do you take up any measures in conservation of power? Do you have any plans to proceed with awareness activity? What is the total expenditure incurred on Advertisement? Paper wise details are solicited.

APTRANSCO: Govt. of AP has constituted a committee called “AP Power Co-ordination Committee (APPCC) to look after all Commercial issues related to Bulk Supply and all legal issues related to IPPs and other generators as per the G.O.Ms.No.59, Dt.7-6-2005. It is a temporary body and the decision to make it a permanent body is under purview of Govt. of AP

***Justification in claiming transmission charges***

28. Issue: What is the justification in claiming transmission charge of Rs.62.27 per KW per month against the proposed wheeling capacity of 13973 MW during FY 2009-10



as against transmission charges Rs.38.91 per KW per month for wheeling of 15376 MW in FY 2008-09?

APTRANSCO: On account of huge capital investments/addition of Transmission capacity in the 2<sup>nd</sup> control period (as shown at Para 3.2 Table 6, page No.42 & 43 of Transmission ARR) the O&M cost, Depreciation, ROC have gone up during second control period as shown at Para No.57, table 7. This has resulted in increase in Transmission Tariff. The transmission cost has increased by Rs.186.18 Cr (Rs.1044.06 Cr in FY 2009-10) over the base transmission cost projected for FY 2008-09 (Rs.857.88 Cr). Similarly, there is reduction in capacity by 1403 MW over the capacity considered in Tariff order for FY 2008-09 (15376 MW) and (13973 MW projected) for FY 2009-10 (ARR projections) due to the following reasons i) Installed Capacities are taken at ex-bus, ii) Open Access Consumers are projected less than previous as they are not realized during first control period as projected, and iii) NTPC Simhadri Expansion Project was not completed as projected in the first control period. As such the Transmission charges tend to go up in view of increase in cost and reduction in capacity.

#### ***Realization of Capacity Additions***

29. Issue: Transco's capital expenditure estimate as well as transmission tariff is based on estimated additional capacity of 10,399 MW of power during the control period. This capacity addition may not be realized. It is also to be noted that no PPAs are signed for any of the plants that are supposed to generate the estimated addition. We request the Commission to give consent to the corresponding capital expenditure on evacuation of this power only after the PPA is signed following proper public process and Commission's approval for the same.

APTRANSCO: At present APTRANSCO is importing very expensive power to abridge the demand-supply gap. It is also to inform that present maximum demand met by the APTRANSCO is 9374 MW during October, 2008 and it is anticipated to reach 10,000 MW by March' 2009. APTRANSCO estimated the net peak demand of 17292 MW by the end of the second control period i.e., FY 2013-14, considering the growth in all the categories especially the lift irrigation load of 3500 MW which alone contributes to the maximum share in the estimation of demand. There is an increase of 7954 MW in demand when compared to the present demand of 9374 MW during this financial year. Keeping in view of the above conditions and also giving special

attention to the lift irrigation load of 3500 MW, which is going to materialize during second control period, APTRANSCO estimated the gross capacity addition of 10399 MW. The capacity addition of 10399 MW comprises of three gas based Projects for which PPAs have been entered out of four projects with the estimated capacity of 1129 MW which are supposed to commence Commercial date of operation in the financial year 2008-09. It is also to be noted that out of 10399 MW, 6880 MW of the capacity addition alone is from state owned APGENCO projects. 4524 MW is under construction and these projects are likely to come in 11<sup>th</sup> plan period. Remaining projects are under LOA, tendering and developmental stage. Most of the APGENCO projects which are under construction or about to start construction are in principle agreed by the APTRANSCO/ DISCOMs and also they are state owned projects which are given privilege to purchase power regardless of high or low cost of power. 4524 MW is under construction and is going to materialize by the end of second control period.

#### ***Krishnapatnam Ultra Mega Power Project***

30. Issue: The new schemes for which evacuation facilities are set up do not include Krishnapatnam Ultra Mega Power Project (UMPP). The CERC has already cleared the power purchase cost from this plant. A portion of the power to be generated here is allocated to AP. Why this was not taken in to account for planning new transmission network.

APTRANSCO: As per the guidelines of Government of India (GoI), one of the primary conditions for setting up of UMPP projects is that project should cater power requirements more than one State. Accordingly MoP, GoI allocated power 1600 MW of power to the State of Andhra Pradesh and balance power of 2400 MW out of 4000 MW was allocated to the States of Tamilnadu, Karnataka & Maharashtra 800 MW each. Coastal Andhra Power Limited (a wholly owned subsidiary of PFC) which was a nodal agency appointed by GoI for coordination of the project requested PGCIL to establish Inter State Transmission System (ISTS) for evacuation of power from 4000 MW UMPP on a long term open access basis to the above beneficiaries including 1600 MW to Andhra Pradesh. This was approved by Standing Committee in Southern Regional Power Committee (SRPC) and Western Regional Power Committee (WRPC).

#### ***Excess Capital Expenditure***

31. Issue: Capital expenditure during the year 2008-09 is Rs. 930.39 Cr (p.42 of the ARR) over and above the expenditure permitted by the Commission in the Tariff Order. Also, IDC during this period is five times more than that permitted by the Commission. Here it is also to be noted that capital expenditure transferred to fixed assets during the first control period is Rs.94.76 Cr less than the amount allowed by the Commission. This also shows that the huge spurt in capital expenditure has taken place in one year. The Commission is requested to satisfy itself that every rupee is spent correctly and judiciously before allowing its addition to be fixed assets.

APTRANSCO: The revised base Capital Expenditure (excluding IDC and expenses capitalized) for the Financial Year 2008-09 is projected at Rs.1339.91 Cr as against the Tariff Order figure for Rs.500 Cr due to system improvement schemes planned particularly in twin cities with GIS substations and XLPE cable for which erection cost of each substation is six times of conventional substations and also lift irrigation scheme works are covered during the year 2008-09. In view of recent increase in interest rates, the IDC has been projected at 12% p.a. as against 9% p.a., factored in the Tariff Order. The increase in IDC from Rs.16.21 Cr to Rs.88.08 Cr is due to (i) Increase in capital expenditure (ii) Increase in the rate of interest.

Capital Expenditure: APERC had allowed an amount of Rs.2020.69 Cr through Tariff order for FY 2005-06 to FY 2008-09 towards capital expenditure. Against this, APTRANSCO had invested/investing Rs.2823.95 Cr with an increase of Rs.803.26 Cr over the tariff order. The capital expenditure transferred to fixed assets during the above period amounts to Rs.1825.54 Cr against the tariff order figure of Rs.1920.30 Cr Normally, the transmission works involve gestation period as certain works taken up during the year gets completed in the subsequent years. The fact can be seen from (page 42 of the filings) the figures capitalized during FY 2005-06 to FY 2007-08.

***No change in non-tariff income***

32. Issue: No change in non-tariff income is assumed even when the ARR of transmission business is projected to increase by 150% during the control period. This assumption is questionable.

APTRANSCO: The major portion of non-tariff income is on account of levy of penalties, liquidated damages (due to noncompliance of certain contractual obligations pertaining to material procurement and works contract etc.), sale of scrap, rebates for advance payments etc. This depends on various parameters and is not assured/regular income for each year. As such, the non-tariff income for second control period is projected based on actual non-tariff income in FY 2007-08. Hence, the non-tariff income is same for all the five years in the second control period

### ***OFC Network***

33. Issue: APTRANSCO proposes to spend Rs.248.22 Crores on laying OFC network for communication purposes. What is the length of the existing OFC network? We also would like to know whether Transco proposes to lease it or use it other ways to raise additional, non-tariff income.

APTRANSCO: At present APTRANSCO is having OFC networking length of 1558 RKM. Further keeping in view of the provision of Electricity Act, 2003, APTRANSCO being the STU and SLDC operator has to cater the needs of data and voice communications to SLDC and among the EHT Sub-stations and Generating Stations. For this purpose APTRANSCO has been investing in OFC networking. Depending upon the surplus capacity, APTRANSCO having IPI license (dark fibers can be leased out) will explore the possibilities for commercial use of the proposed OFC network

### ***Court cases on wheeling charges***

34. Issue: Court cases on wheeling charges are pending for more than 6 years. There appears to be no effort on the part of the Licensee to obtain judgments on these cases. If these cases are allowed to prolong like this even if the judgment comes in the favor of Licensee the service users may prefer to close their businesses rather than pay huge sums piled up during nearly a ten-year period. The sooner the Licensee wakes up the better for the state's economy. We take this opportunity to request the Commission to direct APTRANSCO to provide the amounts pending from these concerns on the basis of the wheeling charges fixed by the Commission

APTRANSCO: The issue is within the purview of Hon'ble High Court / Supreme Court. APTRANSCO / DISCOMs are making untiring efforts to finalize these cases at the earliest

### ***Recovery of Profits for the First Control Period***

35. Issue: Transco proposes to recover Rs.90.70 Cr during the second control period for the profits it was not able to recover during the first control period. This may not be allowed
36. APTRANSCO: APTRANSCO had claimed differential amount of profit for FY 2006-07 (Rs.47.67 Cr) and FY 2007-08 (Rs.43.03 Cr), allowed in Tariff Order and actual workings based on audited accounts and factored in the ARR proposals as special appropriation

***Entry in to Other Businesses***

37. Issue: Commission may advise APTRANSCO and the DISCOMs to explore all the options to enter into other business to make themselves self sustaining and also reduce the increasing revenue gap

APTRANSCO: APTRANSCO had achieved the miles stones envisaged Electricity Act, 2003 National Electricity Policy and National Tariff Policy. Further the State has been progressing towards rationalization of Tariff. This has resulted in tremendous growth in the sale of power to subsidizing categories (Industrial, Commercial etc.). Thus the retail customers are not resorting to open access for drawl / purchase of power from the outside agencies (other than DISCOMs). Further the challenges highlighted by the objector have successfully faced by the all utilities in the state. APTRANSCO has been filing ARR of MYT to recover its full cost plus in addition to the return on internal resources / equity invested in i.e., 25% of Regulated Rate Base (RRB). As such the ERC has been ensuring the APTRANSCO / DISCOMs to meet the revenue gap. However APTRANSCO/ DISCOMs have been exploring the commercial option to enhance non-tariff income/ other revenue so as to achieve rationalization as envisaged in the Electricity Act, 2003, National Tariff Policy

***Debt Burden of Employee Terminal Payments***

38. Issue: Commission may advise the state government to take over the debt burden of employee terminal payments

APTRANSCO: As per the first transfer scheme, APGENCO had got assets equivalent to the liabilities (including terminal benefits) transferred. As per the PPA between APTRANSCO and DISCOMs the revenues / cash flows generated by the assets of

APGENCO take care of the servicing liabilities including the liabilities pertaining terminal benefits. In this connection, APERC has already approved principles / processors including other commercial parameters to address terminal benefits. Further, it is to mention that APGENCO, APTRANSCO and four DISCOMs have been regularly contributing towards future liabilities of terminal benefits. As such the liabilities pertaining to terminal benefits are partly met through the assets transferred to APGENCO and partly through the regular contributions being made by the all the six companies.

### ***Monitoring of Frequency Variations***

39. Issue: A plan has to be prepared to reduce the frequency variations with the targets for each year to each sub station and closely monitored

APTRANSCO: APTRANSCO is one of the constituent members of the Southern Regional Grid and operates in synchronism with the power grids of the other southern states of Karnataka, Tamilnadu, Pondicherry, Kerala and a part of Goa. The system frequency is monitored by the Southern Regional Load Dispatch Center (SRLDC) located at Bangalore. As per the operating principles laid down by SRLDC, all constituent members are expected to maintain system frequency as near as possible to 50 Hz. Hence in the interconnected grid it not possible to put the targets for each sub station wise in AP alone to reduce the frequency variations

### ***Payments to Victims of Accidents***

40. Issue: Amount paid to the victims for both fatal and non-fatal accidents for departmental and non-departmental accidents.

APTRANSCO: Contract Labor who are engaged through Contractor or agencies are being reimbursed 3% of wages towards group insurance. Responsibility is fixed on the Contractor for payment of compensation to the contract labor incase of accidents occurred while carrying out the works as per the clause 25 & 28 of the tender specification. No adverse complaints have been received regarding non-payment of compensation to the persons who met with the accidents

### ***Cost Benefit Analysis-Investments***

41. Issue: What is the capital amount invested by Transco year wise? Have losses comedown? Is there any study regarding cost benefit analysis?

APTRANSCO: The year wise Capital Expenditure of APTRANSCO for 2006-07 is 499.46 Cr, for 2007-08 is 482.06 Cr and for 2008-09(RE) is 1484.25 Cr. The actual Transmission Losses in the APTRANSCO network for the 1<sup>st</sup> Control Period is shown below.

Financial Year	2005-06	2006-07	2007-08	2008-09
Transmission Loss	4.1%	4.0%	4.27%	3.89% (Provisional)

Erection schemes are formulated on two factors. One is System Improvement and the other one is Power Evacuation. System improvement and power Evacuation schemes are formulated based on the load growth in a particular area and for terminal voltage improvement for tail end consumers. Generally schemes are worked out based on technical feasibility and financial viability. In financial viability calculations, cost benefit analysis will be worked out on each proposed scheme and will be sent to Andhra Pradesh electricity Regulatory Commission for approval. So total investment on every scheme will be cost benefit oriented.

***Limitations of Installed Technologies***

42. Issue: An expert committee should examine the limitations of the already installed technology sought to replace the same.

APTRANSCO: Govt. of India entrusted the responsibility of implementing the SCADA technologies for all the states in the country (SLDCs), to Power Grid Corporation of India Limited (POWER GRID), a PSU for online operation of the Indian Power System. The systems provided already are with state of art technology in hierarchical setup for energy management and SCADA facilities coupled with a reliable wideband communication network from world-class technology provides at that time (1998). This is done with a view to facilitate coordinated online management of the Indian Power System Operational at National, Regional and State Level.

There is heavy reliance on information technology with components having high obsolescence rate. The applications (such as EMS/ SCADA) are offered by a limited number of vendors and costs are high. As the modernization of SLDC is a continuous process, CAPEX plans for a rolling five-year period are submitted to the ERC to take care of the system expansion, associated real-time data requirements as well as technological innovations and obsolescence of control centre equipment.

The procurement of computer hardware and up gradation of software proposed in investment plan is envisaged for improving the performance of the existing computer systems of Load Dispatch Centre in the state. The up gradation proposals are essential for effective and efficient functioning of Load Dispatch Centre, which is in line with the recommendations of the Committee constituted by Ministry of Power, Government of India for System Operation and Ring Fencing Load Dispatch Centers.



## Part IV: Commission Analysis on Select Issues

### *Transmission Losses*

43. APTRANSCO filed the Transmission Loss reduction path for the Control Period with lower and upper bands as per Regulation 5 of 2005. The Commission approved the transmission loss reduction path along with lower and upper band after considering the following;
- a) existing transmission loss levels,
  - b) approved investment for the Control Period, and
  - c) other loss reduction avenues
44. However, the reduction in transmission losses as projected by APTRANSCO and approved by the Commission requires systematic approach towards monitoring of loading of power transformers. In view of existing incentive and penal mechanisms under MYT framework, the Commission wish to leave ways and means of loss reduction to the discretion of APTRANSCO.
45. APTRANSCO shall put the losses to user account provisionally at average transmission loss filed by APTRANSCO and approved by the Commission. Upon the availability of actual transmission losses, APTRANSCO may settle the final energy account for users of the transmission system. In this context, the Commission directs that;
- APTRANSCO shall put up a transparent energy accounting system based on boundary meter readings to arrive at monthly energy losses in the transmission system and seek the approval of the Commission for such measurement mechanism. Upon approval of the Commission, APTRANSCO shall use such accounting mechanism to settle the transmission losses to user accounts on actual basis. Till such time, APTRANSCO shall apply only the average transmission losses approved in this Order for energy settlement.***
46. Further, the Commission intends to put incentive/penal mechanism for APTRANSCO with regard to transmission loss reduction path during the Control Period. In this context, the Commission provisionally approves the following;
- a) APTRANSCO can collect 10 percent of average variable cost of energy from transmission users in case the transmission loss is below the lower band for a year.

- b) APTRANSCO shall pay 10 percent of average variable cost of energy to transmission users in case the transmission loss is higher than the upper band for a year.
47. The basis for both incentive and penalty is the energy saving or loss beyond the threshold loss limits, i.e. beyond lower and upper bands of transmission loss for any year.

#### ***Annual Accounts***

48. The Commission noted that APTRANSCO is yet to segregate SLDC assets in its Annual Accounts despite the existence of such requirement. This is necessary in view of different regulatory treatment of assets. The SLDC investments are recovered in full through amortization of capital investment without any return on capital employed. In case of APTRANSCO, investments are recovered through depreciation expenses and the assets get the return on capital employed. APTRANSCO needs to expedite the process of segregation of the SLDC assets. The Commission already issued a directive to APTRANSCO in this matter and reiterates the same in this Order duly extending the date.

***APTRANSCO shall segregate the SLDC accounts in full shape within a year, i.e. by 31<sup>st</sup> March 2010 and also immediately start maintaining separate asset registers on prospective basis. These asset registers will be inspected by the Commission Staff from time to time.***

#### ***Special Appropriation***

49. APTRANSCO filed the special appropriation amount of Rs.1005.08 cr. as expenses for the Control Period while giving the details for each year. The amount consists of a) true up amount for previous years and b) income tax. Both the amounts claimed as special appropriation have been disallowed in view of;
- a) The Commission noted that the amounts claimed for true up on account of previous year's expenses are not as per the Regulation 5 of 2005. According to the Regulation only the income tax amount is uncontrollable. APTRANSCO may file a separate application on these items, if it wishes to be considered.
- b) In view of small amount of income tax paid during previous years and high-income amounts claimed as expense for the Control Period, the Commission felt that it is

better to allow APTRANSCO to claim income tax on actual basis *ex-post*. The Commission will examine this issue on separate application as and when made.

#### **Entering into Other Businesses**

50. Several objectors during the public hearing mentioned before the Commission that it is worthwhile to explore possibility for APTRANSCO to enter other businesses using its asset base especially the Optical Fiber Cable (OFC) network. The Commission also feels that APTRANSCO should seriously explore the possibilities of scaling economies in laying the OFC network and of leasing out the surplus capacities for others on commercial basis. It may also examine the other areas where it can do profitable business. In this context, the Commission directs that;

***APTRANSCO shall file with the Commission an approach paper to enter into other businesses especially using its asset base (including the qualified manpower) by November 30, 2009. The paper may contain details of leasing out of surplus OFC network and possibilities for entering into transmission contracts outside license area.***

#### **Carrying Cost of R&M Stores**

51. APTRANSCO though identified the working capital requirement for R&M stores, has neither included working capital amount in Regulated Rate Base (RRB) nor its carrying cost as expense item in the filings. The Commission felt that it is necessary to have some provision towards stores and accordingly provides the carrying cost on R&M stores equivalent to one fourth of R&M component. O&M cost approved has been allowed as expense item in the ARR. The details are given in Table-05.

**Table 5:R&M Stores Carrying Cost**

(Rs.Cr.)

Financial Year	R&M Stores		Carrying Cost	
	Filing	APERC	Filing	APERC
1	2	3	4	5
2009-10	23.75	31.34	0.00	3.13
2010-11	25.92	34.65	0.00	3.47
2011-12	28.80	38.32	0.00	3.83
2012-13	31.23	42.37	0.00	4.24
2013-14	34.75	46.84	0.00	4.68
<b>Total</b>	<b>144.45</b>	<b>193.52</b>	<b>0.00</b>	<b>19.35</b>
<i>Figures are rounded</i>				

52. The provision for the stores and carrying cost provided by the Commission shall be utilized by APTRANSCO to minimize the hurdles in procuring the R&M stores for transmission operations. In this context, the Commission directs that;

***APTRANSCO shall on an average maintain a minimum 75 percent value of stores provided in this Order on quarterly basis (three months) for every year of the Control Period. For the purpose of this directive, the value of R&M stores on 1<sup>st</sup> of every month will be considered as monthly stock and then the three months average shall be computed.***

53. During the discussions with APTRANSCO, the Commission has noted uncomfortable position of APTRANSCO over depreciation calculations in view of;

- a) It already adopted the depreciation rates announced by Ministry of Power, Government of India for the purpose of its Annual Accounts.
- b) APTRANSCO may have to compute the depreciation on all assets irrespective of funding in view of statutory requirements for Annual Accounts.
- c) The depreciation amount shown in Annual Accounts may be higher than the depreciation amount actually recovered through tariffs.

54. It is to be noted that the statutory requirements of Annual Accounts differ from regulatory methods used in recovery of the expenses. Accordingly, the Commission directs that;

***APTRANSCO shall file a comparative statement with the Commission on completion of Annual Accounts on depreciation amount calculated following the regulatory principles as stated in Regulation 5 of 2005 and as per approved Statutory Annual Accounts with possibly for FY2007-08 onwards. It shall file this statement with the Commission FY2008-09 onwards without fail.***

## Part V: Commission Analysis and Decisions on Filings

### *Investment Plan*

55. APTRANSCO filed the investment plan for the Control Period based on the resource plan incorporated in the filings. As per the investment plan, APTRANSCO intends to invest an amount of Rs.8429 cr. during the Control Period. The details of investments filed are given in Tabale-6.

**Table 6: Filed Investments, 2009-10 to 2013-14**

*(Rs.Cr.)*

Financial Year	Evacuation and System Improvement		GIS and UG Cable Project, HMDA Area	Renovation and Modernization	Bulk Load Works	Telecom Infra. Development	Total
	440 KV	220 and 132 KV					
1	2	3	4	5	6	7	8
2009-10	292.62	1091.45	1220.21	74.14	351.10	83.00	<b>3112.52</b>
2010-11	541.28	673.37	556.70	83.82	75.68	80.00	<b>2010.85</b>
2011-12	597.78	318.32	107.64	98.65	0.88	80.10	<b>1203.37</b>
2012-13	467.27	538.44	0.00	113.43	0.00	5.12	<b>1124.26</b>
2013-14	383.39	471.55	0.00	123.05	0.00	0.00	<b>977.99</b>
<b>Total</b>	<b>2282.34</b>	<b>3093.13</b>	<b>1884.55</b>	<b>493.09</b>	<b>427.66</b>	<b>248.22</b>	<b>8428.99</b>
<b>Figures are rounded</b>							

56. While examining the investment plan and investment amount required, the Commission has considered the following aspects;
- a) Power evacuation needs in tune with the revised implementation schedules of the generating stations,
  - b) System improvement to meet the projected load growth and system strengthening requirements during the Control Period,
  - c) Renovation and Modernization requirements and proposed loss reduction trajectory during the Control Period,
  - d) Commission approved investment schemes and the investment schemes filed for approval with the Commission, and,
  - e) Historical capital expenditure and reasonableness of the proposed investment schemes during the Control Period.

57. While paying due attention to the above factors, the Commission revised the investment amount at Rs.4900 cr. against the filed amount of Rs.8429 cr. for the Control Period. The investment plan proposed by APTRANSCO is quite ambitious given the system requirements and historical capital expenditure. The details of investment approved by the Commission are given in Table-7.

**Table 7: Approved Investments, 2009-10 to 2013-14**

(Rs.Cr.)

Financial Year	Evacuation and System Improvement		GIS and UG Cable Project, HMDA Area	Renovati on and Moderni zation	Telecom Infra. Develop ment	Total
	440 KV	220 and 132 KV				
1	2	3	4	5	6	7
2009-10	200.00	200.00	500.00	50.00	10.00	<b>960.00</b>
2010-11	300.00	200.00	500.00	50.00	10.00	<b>1060.00</b>
2011-12	350.00	200.00	500.00	50.00	10.00	<b>1110.00</b>
2012-13	350.00	200.00	500.00	50.00	10.00	<b>1110.00</b>
2013-14	400.00	200.00	0.00	50.00	10.00	<b>660.00</b>
<b>Total</b>	<b>1600.00</b>	<b>1000.00</b>	<b>2000.00</b>	<b>250.00</b>	<b>50.00</b>	<b>4900.00</b>

*Figures are rounded*

***The Return on Capital Employed***

58. As per the Regulation 5 of 2005, APTRASNSO is permitted to claim the Return on Capital Employed (ROCE). The amount claimed in this manner is expected to meet the cost of debt and equity capital used to finance the assets and capital used and useful in the transmission business. The regulatory framework relating to compensating the capital employed in general is;
- The assets and capital used in the transmission business known as Regulated Rate Base (RRB).
  - The Return on Capital (cost of capital in percent) is worked out based on a) debt-equity ratio, b)cost of debt and c)return on equity.
  - The Return on Capital is applied on RRB to arrive the ROCE for each year of the Control Period.
59. APTRANSCO stated that it computed the ROCE as per the procedures laid down in Regulation 5 of 2005. As per the filing, the RRB is worked out at Rs.31315.62 cr for the Control Period. The Return on Capital is worked out at 12.5 percent using

75:25 debt equity ratio with cost of debt and return on equity at 12 percent and 14 percent respectively.

60. Applying the Return on Capital of 12.5 percent on the RRB, APTRANSCO computed the ROCE at Rs. 4414.46 cr. for the Control Period while giving the details for each year of the Control Period. The Commission has computed the RRB with the following modifications.
- The approved investment and capitalization schedule for each year of the Control Period are taken into computations of the RRB.
  - The working capital requirement is computed for O&M by considering 45 days equivalent of approved O&M expenses for each year of the Control Period.
  - The opening value of the asset base is computed by excluding the amounts not funded by APTRANSCO, such as assets funded by consumers and government.
  - The cost of debt, based on existing loan profile and likely future interest rates, is placed at 10 percent instead of 12.5 percent as filed by APTRANSCO.
61. With these changes in RRB calculations and Return on Capital, the Commission computed the ROCE at Rs.2533.47 cr. for the Control Period. The details of RRB and ROCE are given in Table-8.

**Table 8: Regulated Rate Base and Return on Capital Employed**

(Rs.Cr.)

Financial Year	Regulate Rate Base (RRB)		Return on Capital Employed (ROCE)	
	Filing	APERC	Filing	APERC
1	2	3	4	5
2009-10	3251.00	2770.69	406.38	304.78
2010-11	5392.29	3605.64	674.04	396.62
2011-12	7940.08	4892.2	992.51	538.14
2012-13	9072.25	5657.01	1134.03	622.27
2013-14	9659.99	6287.84	1207.5	691.66
<b>Total</b>	<b>35315.61</b>	<b>23213.38</b>	<b>4414.46</b>	<b>2553.47</b>
<i>Figures are rounded</i>				

### ***Operation and Maintenance Costs***

62. The operating and maintenance (O&M) cost consist of a) employee cost, b) Repair and Maintenance (R&M) cost and c) Administration and General (A&G) expenses. APTRANSCO projected the O&M cost for each year of the Control Period as per the principles stated in the Regulation 5 of 2005. For the purpose of forecasting, APTRANSCO used the following;
- a) Estimated O&M Cost for FY2008-09 and this amount is considered as base for the purpose of projections,
  - b) Wholesale and Retail Price Indices are taken in the ratio 55:45 and this ratio has been used to arrive at the composite inflationary factor at 8.03 for future,
  - c) Number of substation bays and line length have been projected using the historical information and the resource plan filed, and
  - d) Estimated O&M expenses capitalized with reference to proposed investments for each year of the Control Period.
63. Using these parameters, APTRANSCO estimated the net O&M cost at Rs.1699.02 cr. for the entire Control Period while giving the details for each year. The projected net O&M cost has the increasing trend in the range of 12-14 percent per annum during the Control Period.
64. Compared with actual O&M expenses in the previous year from Annual Accounts, it is found that the projected O&M Cost is rather high. The reasons for such high projected values are partly on account of;
- a) APTRANSCO has taken only one year, i.e.FY2008-09 as the base year for the purpose of projections, and
  - b) The projections are sensitive to investment plan that has a bearing on number of substation bays and line lengths, which influence the forecast.
65. Considering these facts, the Commission felt that the O&M costs projected are rather on higher side. As per the Commission's calculations with approved investment and capitalization schedule, the net O&M cost is expected to increase by about 10.57 percent per annum during the Control Period. Accordingly, the Commission calculated the O&M cost for each year of the Control Period and the sum of the O&M cost approved for the entire Control Period is placed at Rs.1591.09 cr.
66. APTRANSCO projected a sum of Rs.378.66 cr. capitalization of O&M expenses for the Control Period based on the projected Investment levels and O&M cost. In



tune with the approved investment and O&M cost, the Commission placed the capitalization value of O&M cost at Rs.217.44 cr. for the Control Period. The details of O&M cost filed and approved by the Commission are given in Table-9.

**Table 9:O&M Costs for the Control Period**

(Rs.Cr.)

Financial Year	Gross O&M Cost		Expenses Capitalized		Net O&M Cost	
	Filing	APERC (*)	Filing	APERC	Filing	APERC
1	2	3	4	5	6(2-4)	7(3-4)
2009-10	347.95	284.22	86.07	26.55	261.88	257.68
2010-11	372.87	325.15	76.22	40.24	296.65	284.91
2011-12	404.69	357.72	68.51	42.69	336.18	315.03
2012-13	450.19	413.08	72.25	64.76	377.94	348.33
2013-14	501.98	428.36	75.61	43.21	426.37	385.15
<b>Total</b>	<b>2077.68</b>	<b>1808.54</b>	<b>378.66</b>	<b>217.44</b>	<b>1699.02</b>	<b>1591.09</b>
<i>Figures are rounded, * includes O&amp;M carrying cost also</i>						

**Depreciation**

67. APTRANSCO computed the depreciation amount on assets using rates notified by Ministry of Power, Government of India. Applying these rates on forecasted assets, the depreciation amount is computed at Rs.2923.48 Cr. for the entire Control Period while giving the details for each year. As per the Regulation 5 of 2005, APTRANSCO shall adopt the depreciation rates announced by Central Electricity Regulatory Commission (CERC) for transmission assets. APTRANSCO did file neither the reason nor justification for adopting the rates notified by Ministry of Power, Government of India. **The Commission decided to adopt the depreciation rates announced by CERC for transmission assets during the Control Period.**
68. Based on the Commission’s approved investment and capitalization schedule for each year of the control period, the Commission worked out the asset base for the purpose of computing depreciation at the beginning of each year of the Control Period. As per Regulation 5 of 2005, the assets not funded by APTRANSCO, such as assets funded by consumers, government and grants by others have been removed from the asset base for computing depreciation at the rates announced by CERC.

As per the Commission's calculations, the depreciation amount is placed at Rs.1893.42 cr. as against Rs. 2923.48 cr. filed by APTRANSCO for the entire Control Period. The details of asset base and depreciation filed and approved are given in Table-10.

**Table 10:Asset Base and Depreciation for the Control Period**

(Rs.Cr.)

Financial Year	Asset Base		Depreciation	
	Filing	APERC	Filing	APERC
1	2	3	4	5
2009-10	5653.11	5302.00	312.21	250.94
2010-11	7482.01	6308.98	414.56	292.23
2011-12	11083.12	8282.09	616.10	387.84
2012-13	13676.98	9706.49	761.27	459.78
2013-14	14714.51	10484.64	819.34	502.62
<b>Total</b>	<b>52609.73</b>	<b>40084.20</b>	<b>2923.48</b>	<b>1893.41</b>
<i>Figures are rounded</i>				

**Net Aggregate Revenue Requirement**

69. With the changes observed in this section of the Order, the net ARR for APTRANSCO is approved at Rs.5911.66 cr. as against Rs.9915.91 cr. filed by APTRANSCO for the entire Control Period. The details of net ARR filed and approved are given in Table-11.

**Table 11:Net Aggregate Revenue Requirement**

(Rs.Cr.)

Financial Year	Net ARR	
	Filing	APERC
1	2	3
2009-10	1044.06	788.13
2010-11	1538.36	948.50
2011-12	2167.06	1215.75
2012-13	2474.77	1405.12
2013-14	2691.66	1554.16
<b>Total</b>	<b>9915.91</b>	<b>5911.66</b>
<i>Figures are rounded</i>		

### **Generation Capacity**

70. The Commission examined the generation capacity details filed by APTRANSCO for the purpose of levying the Transmission Tariff. The Commission has effected the following changes with reference to the generation capacity filed by APTRANSCO;
- a) Based on discussions held with Generation Corporation of Andhra Pradesh (APGENCO) and APTRANSCO, the ex-bus generation capacities have been revised in tune with schedules of upcoming generating stations.
  - b) The conventional generation capacities and non-conventional energy generation capacity have been reworked for each Distribution Company based on Third Transfer Scheme as announced by GOAP.
  - c) Based on proposed amendments to Power Purchase Agreements, 20 percent of ex-bus generation capacity of four upcoming gas based thermal stations is considered as Open Access (OA) capacity.
  - d) The available information suggest that there would be a potential for 1000 MW (including 660 MW NTPC Simhadri Expansion) OA capacity. This number is also reckoned in the computations.
71. The details of the capacity determined by the Commission are given in Table-12.

**Table 12:APERC-Generation Capacities, FY2009-10 to 20013-14**

<i>(MW)</i>				
<b>Financial Year</b>	<b>Distribution Companies</b>	<b>Other Generators Open Access</b>	<b>Other Generators, Third Parties</b>	<b>Total Capacity in the State</b>
1	2	3	4	5=(2+3+4)
2009-10	12891	391	462	13744
2010-11	14038	1041	462	15541
2011-12	14410	1091	462	15963
2012-13	16274	1141	462	17877
2013-14	19469	1291	462	21222
Notes: Figures are rounded. The Generation Capacities mentioned here are taken as Long Term Contracted Capacity for the purpose of computing the Transmission Charge.				

### ***Transmission Tariff for the Control Period***

72. The Commission computed the Transmission Charge in Rs/kW/Month as per Regulation 5 of 2005 using the approved Net ARR and the Generation capacity for each year of the Control Period. The Transmission Charge computed using the following formulae;

$$\text{Transmission Charge (Rs/kW/Month)} = \text{Net ARR} / (\text{Generation Capacity in kW} \times 12)$$

73. The Commission approved the Transmission loss as filed by APTRANCO with provisional settlement of losses at average transmission loss level.
74. At the tariff determined by the Commission, APTRANSCO will recover the approved revenue requirement without incurring any financial loss. The details of Transmission Tariff consisting of a) Transmission Charge and b) Transmission Loss (in kind) for each year of the Control Period are given in Table-13.

**Table 13: Transmission Tariff Schedule, 2009-10 to 2013-14.**

Financial Year	Net ARR, Rs. Cr.	Generation capacity, MW	Transmission Tariff	
			Transmission Charge/Rate (Rs/kW/Month)	Transmission Loss(kind),
1	2	3	4(3/2)	5
2009-10	788.13	13744	47.79	4.16%
2010-11	948.50	15542	50.86	4.13%
2011-12	1215.75	15963	63.47	4.10%
2012-13	1405.12	17877	65.50	4.06%
2013-14	1554.16	21222	61.03	4.02%

**Notes:** Figures are rounded

#### **Notes on Transmission Tariff:**

1. The users of the transmission system shall pay transmission charge and bear the transmission loss 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.

**Commission Intervention in Case of Variations in Cost and Revenues**

75. APTRANSCO should be in a position to recover the approved revenue requirement with the charge fixed by the Commission on annual and cumulative basis for the Control Period. The details are given in Table-14.

**Table 14 : APERC Approved Cost, and Annual and Cumulative Recovery**

(Rs.Cr.)

Sl. No.	Net ARR	YEAR					MYT Period
		2009-10	2010-11	2011-12	2012-13	2013-14	
1	Approved	788.13	948.50	1215.75	1405.12	1554.16	5911.66
2	Cumulative Recovery	788.13	1736.63	2952.38	4357.50	5911.66	

76. If the cumulative actual cost is less than 10 percent of cumulative approved cost at the beginning of the financial year starting from 2010-11, the Commission may require the APTRANSCO to explain the reasons for cost variations. If necessary, the Commission may also require APTRANSCO to file the Transmission Tariff for the rest of the Control Period.
77. If the cumulative actual revenue is more than 10 percent of cumulative approved revenue at the beginning of the financial year starting from 2010-11, the Commission may require the APTRANSCO to explain the reasons for revenue variations. If necessary, the Commission may also require APTRANSCO to file the Transmission Tariff for the rest of the control period of five years.
78. If the actual recovery of revenue through Transmission Charge is less than 10 percent of the actual cost, the APTRANSCO may file the details with the Commission seeking the remedy for under recovery of the cost. The Commission, upon examination of these details may pass an appropriate Order or show the ways and means to address issue of the under recovery of the cost.
79. For the purpose of monitoring the actual cost and revenue, the Commission will issue a format for filing of actual cost and revenues. In this context, the Commission directs that;

*APTRANSCO shall file the actual costs and revenues by 25<sup>th</sup> of every month for the previous month in the format prescribed for this purpose by the Commission. APTRANSCO may also state its own observations on cost, revenues and capacities along with the monthly report.*

80. The Transmission Charge and Loss in kind fixed for each year of the control period are applicable from 1<sup>st</sup> April to 31<sup>st</sup> March of the respective year. The Transmission Tariff Schedule is given in Annexure-A and it is applicable as stated in the notes therein.

This Order is signed on the 20th day of March 2009.

Sd/-  
C.R. SEKHAR REDDY  
MEMBER

Sd/-  
R. RADHA KISHEN  
MEMBER

Sd/-  
A. RAGHOTHAM RAO  
CHAIRMAN

**Annexure-A**  
**Transmission Tariff Schedule, 2009-10 to 2013-14.**

Year	Transmission Charge (Rs./kW/Month)	Transmission Loss (percent)
2009-10	47.79	4.16
2010-11	50.86	4.13
2011-12	63.47	4.10
2012-13	65.50	4.06
2013-14	61.03	4.02

**Notes on Transmission Tariff:**

1. The users of the transmission system shall pay transmission charge and also bear the transmission loss in kind for both energy and capacity as indicated above.
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 transmission tariff/charges are to be levied as per the terms and conditions approved by the Commission from time to time.

## **Annexure-B**

### **List of Directives**

#### **Energy Accounting**

1. APTRANSCO shall put up a transparent energy accounting system based on boundary meter readings to arrive at monthly energy losses in the transmission system and seek the approval of the Commission for such measurement mechanism. Upon approval of the Commission, APTRANSCO shall use such accounting mechanism to settle the transmission losses to user accounts on actual basis. Till such time, APTRANSCO shall apply only the average transmission losses approved in this Order for energy settlement. (Para 45).

#### **Accounts Segregation**

2. Segregate the SLDC accounts from APTRANSCO Books of Accounts in full shape within a period of one year, i.e. by 31<sup>st</sup> March 2010 and also immediately start maintaining separate asset registers on prospective basis. These asset registers will be inspected by the Commission Staff from time to time (Para 48).

#### **Entry into Other Business**

3. APTRANSCO shall file with the Commission an approach paper to enter into other businesses especially using its asset base (including the qualified manpower) by November 30, 2009. The paper may contain details of leasing out of surplus OFC network and possibilities for entering into transmission contracts outside license area. (Para 50)

#### **O&M Stores**

4. APTRANSCO shall on an average maintain a minimum of 75 percent value of stores provided in this Order on quarterly basis (three months) for each year of the Control Period. For the purpose of this directive, the value of R&M stores on 1<sup>st</sup> of every month will be considered as monthly stock and then the three months average shall be computed. The Commission staff will monitor the value of stock from time to time. (Para 51 and 52).

#### **Depreciation Statement**

5. APTRANSCO shall file a comparative statement with the Commission on completion of Annual Accounts on depreciation amount calculated following the regulatory principles as stated in Regulation 5 of 2005 and as per approved Statutory Annual Accounts with possibly for FY2007-08 onwards. It shall file this statement with the Commission FY2008-09 onwards without fail (Para 54).

#### **Cost and Revenue Variations**

6. APTRANSCO shall file the actual costs and revenues by 25<sup>th</sup> of every month for the previous month in the format prescribed for this purpose by the Commission. APTRANSCO may also state its own observations on cost, revenues and capacities along with the monthly report. (Para 79).



### **Timely completion of projects/schemes:**

7. The licensee shall take all possible measures to ensure that the projects /schemes taken up are completed as per 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(Brought forward).

### **Capital Investments**

8. 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 (Brought forward).

**Annexure-C**  
**List of Objectors**

<b>Sl. No.</b>	<b>Name and Address of the Objector</b>
1	M.Krishna Murthy, SAO (Retd.), SRT-302, Sanath Nagar, Hyderabad-18
2	D.Ramaswami Reddy, B.E., F.I.E., Retd.SE, 21/71, Trunk Road, Opp.Collector's Office, Cuddapah - 516001
3	M.Venugopala Rao, Special Correspondent, Prajashakti, Telugu daily, H.No.7-1-408 to 413, flat.No.203, Sri Darsan Residency, Balkampet Road, Ameerpet, Hyd - 16
4	Vangala Subba Rao & Samineni Rama Rao, A.P.Raithu Sangham, 1-1-9/10, Jawahar Nagar, RTC X Road, Hyderabad - 20
5	Sarampalli Malla Reddy, H.No.1-1-60/2, RTC X Roads, Musheerabad, Hyderabad-20. Cell- 9490098666
6	Dr.L Muralidhar, Doctor, Newton colony, vanaparathi, Mahaboobnagar
7	Dr.K Veeraiah, Lecturer, H.No. 39-111, Bandiram Nagar, Vanaparathi, Mahaboobnagar - 509103
8	K Venkateswarllu, Librarian, H.No.42-242/11/8, Nandi Hills, Vanaparathi, Mahaboobnagar - 509103
9	Abdhul Kalli, Teacher, H.No. 6-8, Gandhi Chowk, Vanaparathi, Mahaboobnagar - 509103
10	MD.Affjalluddin, Govt.Employee, H.No. 20-60, Old Fort, Gandhi Chowk, Vanaparathi, Mahaboobnagar-509103
11	K Madhusudhan, Suguru, Pebbela, Mahaboobnagar 509104
12	Krishnaiah, Suguru village, Pebbela Mandal, Mahaboobnagar - 509104
13	G. Sreenivasulu, Chennaram Village, Gopalpet Mandal, Mahaboobnagar
14	K Prabhakar, Lawyer, H.No. 11-3-125, Nehru Nagar,Khammam Post, Khammam Mandal, Khammam.
15	Dr.Y Prasadarao, Doctor, Prasad Nursing Home, Nehru Nagar, Khammam Post&Mandal, Khammam-507002
16	A Vijayalaxmi, Sambhavi Nagar, Khammam (Post & Mandal), Khammam
17	Dr. P. Rammohan Rao, Doctor, 5-7-43, Sanjeev Nursing Home,Khaleel Wadi, Nizamabad (Post & Mandal), Nizamabad
18	N Rama Rao, Teacher, D.No. 6-88/6/1/A, Arya Nagar, Bhorgan (post & Mandal) Nizamabad
19	D.Vijayananda Rao, H.No. 6-18-106, Old NGO Colony, Subash Nagar, Nizamabad (Post & Mandal),Nizamabad-503 002
20	K Gangakishan, H.No. 3-3-497/1, Gyathri Nagar, Nizamabad (Post & Mandal), Nizamabad-503001.
21	A Sankaraiah, H.No. 4-6-47, Ambedkar Nagar, Siricilla (Post & Mandal),Karimnagar 505301
22	K Rajamouli, H.No.10-5-97, Kishan Nagar, Karimnagar(Post & Mandal), Karimnagar

<b>Sl. No.</b>	<b>Name and Address of the Objector</b>
23	K Bhagavanthu Rao, H.No.9-5-176, Shiva Nagar, Ramnagar, Karimnagar(Post & Mandal), Karimnagar
24	Dr. M Rama Rao, Jyothi Hospital, Miryalaguda, Miryalaguda (Post & Mandal), Nalgonda
25	R Anajaiah, H.No.19-119, Reddi Colony, Miryalaguda (Post & Mandal), Nalgonda
26	Shiak Baba, Hidayat Ali, Nilayagudem, Tripuraram (Post & Mandal), Nalgonda
27	P Srujana, Teacher, Kanigiri, Kanigiri (Post & Mandal) Prakasam
28	C.A.Prasad, Opp:PNCA College, Somarajupalli, Harizonwada, Singarayakonda, Prakasam
29	K.V.Ramana Reddy, Teacher, Vengalreddypalli, Vegalreddypalli (Post & Mandal), Prakasam
30	G. Malyadri, D.No. 8-1-6, First Stage, Balaji Rao heat, Tenali (Post & Mandal), Guntur - 522101
31	J Rajakumari, H.No. 1-43-17, Najarpeta, Tenali(Post & Mandal) Guntur
32	KTV Prasad, Sriram Rural Kalasala, Chillumuru,Chillumuru Post, Kolluru, Guntur
33	N Narayana, Teacher, D.No. 17/67, Dhronamraju Veedhi, Nellore(Mandal & Post), Nellore
34	K Srinivasulu, Teacher, Kothapalli Village, Gudinarva, Gandipalem, Varikuntapadu Mandal, Nellore 524236
35	N Subrahmanyam, D.No. 27-1-1395, 2nd Street, Vasavi Nagar, Balaji Nagar, Nellore
36	G Srinivasulu, Flat No.103, A Block, Pawani Prestiage, Magunta Layout, Nellore
37	Dr. G.Vijayakumar,Doctor, Nellore Hospital, Aravinda Nagar, Nellore
38	M .Ajit Babu, H.No.1041/B, Andhrakesari School, Opp: Janatpet North, Kavli, Kavali (Post & Mandal), Nellore-524202
39	Dr. D. Venkateswarlu, Professor, 15-54/2, Padmavathi Nagar, Tirupathi(Post & Mandal), Chittoor
40	G. Venkateswarlu, H.No.4/73, Peroor, Dhalithawada, Tirupathi Rural, Chittoor
41	Dr.G Guruvaiah, Doctor, 7-48, Srinagar Colony, Vykuntapuram, Tirupathi(Post & Mandal) Chittoor
42	B Suresh Kumar, H.No. 46-1-m-9A, Aditya Nagar, A Camp, Kurnool (Post & Mandal), Kurnool
43	MD.Miya, Teacher, Laxmipuram village, Dhoopadu post, Kurnool Mandal, Kurnool
44	A Pratap Reddy, Flat No. 101, Deeraj Enclave, B Camp 9, Kurnool
45	N Chennakesava Reddy, Laxmipuram Village, Dhoopadu Post, Kurnool Mandal, Kurnool-518218
46	Dr. V. Brahama Reddy, Laxmipuram Village, Dhoopadu Post, Kurnool-518218
47	B,Sunkanna,Student,H.No.2-115/1, Ullindakanda Village & Post, Kalluru, Kurnool - 518218

<b>Sl. No.</b>	<b>Name and Address of the Objector</b>
48	B.Ismail, Brahmareddy Praja Hospital, Tadipatri Road, Guthi Post, Guthi Mandal, Anantapur - 515401
49	M.Suresh Babu,H.No.12-4-383, Vidyut Nagar,Ananthapur - 515 001
50	L.Ravindranath, Lawyer, H.No.6-2-991, Ramnagar, Ananthapur - 515 004
51	B.Viswanath, Teacher, Mydukur, Mydukur Post, Mydukar Mandal, Kadapa
52	N.Devadattu, Teacher, H.No.14-57/2, Mydekur, Mydukuru Post, Kadapa
53	P.Ratnakar, H.No.7/137, Upstairs, Jayanagar Colony, Kadapa
54	A.V.Ramanaiah, Teacher, H.No.14/422-3, K.C. Nagar Street,Mydekuru,Kadapa
55	M.Veeranna, Employee, F8 & F9 , Dolar Chamber, 6-2-40, A.C.Gards, Hyderabad - 500 004
56	M.V.N.VenkatRao, Gurajada Public School, Poolbag, Vijayanagaram Post, Vijayanagaram Mandal, Vijayanagaram - 535 003
57	Dr.L.Muralidhar, State President, Jana Vignana Vedika (A.P.), H.No.42-242, Praja Vaidyasala, Wanaparthi - 509103, Mahabubnagar dist
58	Ch.Diwakar Babu, Secretary, Consumers Guidance Society, D.No.56-11-13/1, 1st floor,Sri Devi Complex, Y.V.R.Street, Opp.Donka Road, patamata, Vijayawada - 520010. Ph: 0866-2554324
59	RAOG Prabhakar, Co-ordinator, 221, Jalavayu Vihar, Near Siva Parvathi Theatre, Kukatpally, Hyderabad - 72
60	K.Raghu, H.No.3-6-27/2, Opp.Pension office, Near Skyline Theatre, Bhaseer Bagh, Hyderabad - 29
61	Kommididi Narsimha Reddy, Ex-MLA, Convenor, Praja Chaitnya Vedika, AB2#205, Singapur Township, Pocharam - 500088
62	Rachamalla Punnamacharyulu, Akhila Bharatheeya Viswakarma Parishat, Thilak Bhavan, T.R.T.141, Street No.9, Jawahar Nagar, Hyderabad - 560020
63	B.V.Raghavulu, S/O B.Venkata Subbaiah, H.No.1-1-60/2, M.B.Bhavan, RTC X Roads, Musheerabad, Hyderabad - 500 020
64	Gade Diwakar, Secretary, All India Kisan Mazdoor Sabha(AP), Marx Bhavan, H.No.658, Vidya Nagar, 7th Lane, Hyderabad - 44
65	M.Thimma Reddy, People's Monitoring gropu on electricity Regulation, c/o Centre for environment concerns, 3-4-142/6, Barkatpura, Hyderabad - 500 027
66	Kandarapu Murali, Communist Party Of India(Marxist), Chittoor district Committee, M.B.Bhavan, Yasoda nagar, Tirupathi - 517507
67	G.Narendranath, E.C.Member, Rashtriya Raithu Seva Samithi, Flat No.115, Saphire Building, Amritha Hills, Panjagutta, Hyderabad -500 082

## Annexure-D

### Generation Capacity for Control Period 2009-10 to 2013-14, MW

Generating Station/Source	APTRANSCO					APERC				
	2009-10	2010-11	2011-12	2012-13	2013-14	2009-10	2010-11	2011-12	2012-13	2013-14
<b>APGENCO</b>										
VTPS I	381	381	381	381	381	381	381	381	381	381
VTPS II	381	381	381	381	381	381	381	381	381	381
VTPS III	381	381	381	381	381	381	381	381	381	381
RTPP I	380	380	380	380	380	380	380	380	380	380
KTPS A	217	217	217	217	217	217	217	217	217	217
KTPS B	217	217	217	217	217	217	217	217	217	217
KTPS C	217	217	217	217	217	217	217	217	217	217
KTPS D	453	453	453	453	453	453	453	453	453	453
KTPS VI	0	453	453	453	453	0	453	453	453	453
RTS B	57	57	57	57	57	57	57	57	57	57
RTPP-II	382	382	382	382	382	382	382	382	382	382
VTPS IV	463	463	463	463	463	463	463	463	463	463
RTPP-III	191	191	191	191	191	0	191	191	191	191
RTPP-IV	0	0	546	546	546	0	0	0	546	546
Kakatiya TPS Stage I	455	455	455	455	455	455	455	455	455	455
Kakatiya TPS Stage II	0	0	546	546	546	0	0	0	546	546
IGCC Plant at Dr. NTTPS	0	0	121	121	121	0	0	0	121	121
Krishnapatnam TPP (JVP)	0	0	0	0	1456	0	0	0	0	1456
<b>TOTAL THERMAL</b>	<b>4174</b>	<b>4626</b>	<b>5840</b>	<b>5840</b>	<b>7296</b>	<b>3983</b>	<b>4626</b>	<b>4626</b>	<b>5840</b>	<b>7296</b>
MACHKUND PH AP Share	83	83	83	83	83	83	83	83	83	83
TUNGBHADRA PH AP Share	57	57	57	57	57	57	57	57	57	57
USL	238	238	238	238	238	238	238	238	238	238
LSR	455	455	455	455	455	455	455	455	455	455
DONKARAYI	25	25	25	25	25	25	25	25	25	25
SSLM	762	762	762	762	762	762	762	762	762	762
SSLM LCPH	896	896	896	896	896	896	896	896	896	896
NSPH	807	807	807	807	807	807	807	807	807	807
NSRCPH	89	89	89	89	89	89	89	89	89	89
NSLCPH	59	59	59	59	59	59	59	59	59	59
POCHAMPAD PH	36	36	36	36	36	36	36	36	36	36
NIZAMSAGAR PH	10	10	10	10	10	10	10	10	10	10
PABM	20	20	20	20	20	20	20	20	20	20
SINGUR	15	15	15	15	15	15	15	15	15	15
JURALA HES	232	232	232	232	232	232	232	232	232	232
LOWER JURALA	0	79	198	238	238	0	0	198	238	238
Nagarjuna Sagar Tail Pond	50	50	50	50	50	0	50	50	50	50
PULICHINTALA	89	119	119	119	119	0	119	119	119	119
DUMMUGDEM	0	0	154	309	309	0	0	154	309	309

Generating Station/Source	APTRANSCO					APERC				
	2009-10	2010-11	2011-12	2012-13	2013-14	2009-10	2010-11	2011-12	2012-13	2013-14
SINGAREDDIPALLY	0	0	79	198	198	0	0	0	198	198
POLAVARAM	0	0	0	238	475	0	0	0	238	475
SATTUPALLY	0	0	594	594	594	0	0	0	0	594
<b>TOTAL HYDRO</b>	<b>3922</b>	<b>4031</b>	<b>4977</b>	<b>5528</b>	<b>5766</b>	<b>3784</b>	<b>3952</b>	<b>4304</b>	<b>4934</b>	<b>5766</b>
MINI HYDRO&OTHERS	12	12	12	12	12	12	12	12	12	12
Wind	2	2	2	2	2	2	2	2	2	2
<b>Total A.P. Genco</b>	<b>8110</b>	<b>8671</b>	<b>10831</b>	<b>11382</b>	<b>13075</b>	<b>7780</b>	<b>8592</b>	<b>8945</b>	<b>10788</b>	<b>13075</b>
<b>Central Generating Stations (CGS)</b>										
NTPC(SR) Ramagundam- U1-U6	680	680	680	680	680	680	680	680	680	680
NTPC (SR) Ramagundam -U7	170	170	170	170	170	170	170	170	170	170
NLC TS-II Stage-I	114	114	114	114	114	114	114	114	114	114
NLC TS-II Stage-II	197	197	197	197	197	197	197	197	197	197
NPC-MAPS	40	40	40	40	40	40	40	40	40	40
Talcher Stage 2	398	398	398	398	398	398	398	398	398	398
NTPC- Simhadri	925	925	925	925	925	925	925	925	925	925
SIMHADRI EXPANSION	0	311	311	311	311	0	311	311	311	311
Kaiga (Nuclear) Plant I&II	128	128	128	128	128	128	128	128	128	128
Kaiga (Nuclear) Plant III	62	62	62	62	62	62	62	62	62	62
<b>Total Central Sector</b>	<b>2715</b>	<b>3025</b>	<b>3025</b>	<b>3025</b>	<b>3025</b>	<b>2715</b>	<b>3025</b>	<b>3025</b>	<b>3025</b>	<b>3025</b>
<b>Joint Sector Power</b>										
APGPCL-I	14	14	14	14	14	14	14	14	14	14
APGPCL-I	39	39	39	39	39	39	39	39	39	39
<b>Total Joint Sector</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>53</b>
<b>IPPs (Independent Power Projects)</b>										
GVK	210	210	210	210	210	210	210	210	210	210
Spectrum	202	202	202	202	202	202	202	202	202	202
Kondapalli	341	341	341	341	341	341	341	341	341	341
BSES	215	215	215	215	215	215	215	215	215	215
GVK Extension	213	213	213	213	213	171	171	171	171	171
Vemagiri	359	359	359	359	359	287	287	287	287	287
Gowthami	450	450	450	450	450	360	360	360	360	360
Konaseema	432	432	432	432	432	345	345	345	345	345
Krishnapatnam (Ultra Mega)	0	0	0	0	310	0	0	0	0	310
BPL-R	0	291	582	582	582	0	0	0	0	582
<b>Total IPPs</b>	<b>2422</b>	<b>2713</b>	<b>3004</b>	<b>3004</b>	<b>3314</b>	<b>2131</b>	<b>2131</b>	<b>2131</b>	<b>2131</b>	<b>3023</b>
<b>Non-Conventional Sources</b>										
Bagasee (Cogeneration)					399					399

Generating Station/Source	APTRANSCO					APERC				
	2009-10	2010-11	2011-12	2012-13	2013-14	2009-10	2010-11	2011-12	2012-13	2013-14
Biomass Power Projects					229					229
Biomass (Cogeneration)					29					29
Mini Hydel					274					274
Wind					701					701
Waste Head (Cogeneration)					41					41
Municipal / Indstrl waste					132					132
<b>Total Non conventional</b>	<b>160</b>	<b>185</b>	<b>204</b>	<b>225</b>	<b>240</b>	<b>160</b>	<b>185</b>	<b>204</b>	<b>225</b>	<b>240</b>
<b>MPP - (Mini Power Projects)</b>										
1) Sri Vatsa power Ltd	17	17	17	17	17	17	17	17	17	17
2) M/s LVS Power Ltd	35	35	35	35	35	35	35	35	35	35
<b>Total MPPS</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>	<b>52</b>
OTHERS (Open Access)						391	1041	1091	1141	1291
Third Party Sales	462	462	462	462	462	462	462	462	462	462
<b>Grand Total</b>	<b>13973</b>	<b>15162</b>	<b>17631</b>	<b>18203</b>	<b>20222</b>	<b>13744</b>	<b>15542</b>	<b>15963</b>	<b>17877</b>	<b>21222</b>

**Annexure-E**  
**Regulated Rate Base and Return on Capital Employed, Rs. Cr.**

	Details	APTRANSCO					APERC				
		2009-10	2010-11	2011-12	2012-13	2013-14	2009-10	2010-11	2011-12	2012-13	2013-14
<b>1.0</b>	<b>Assets(1.1.+1.2)</b>	<b>7482.01</b>	<b>11083.12</b>	<b>13676.98</b>	<b>14714.51</b>	<b>16420.30</b>	<b>6384.67</b>	<b>8282.97</b>	<b>9706.49</b>	<b>10647.55</b>	<b>11926.89</b>
1.1	Opening balance of OCFA	5653.11	7482.01	11083.12	13676.98	14714.51	5653.11	6384.67	8282.97	9706.49	10647.55
1.2	Additions during the year	1828.90	3601.11	2593.86	1037.53	1705.79	731.56	1898.30	1423.52	941.06	1279.34
<b>2.0</b>	<b>Depreciation(2.1+2.2)</b>	<b>2728.65</b>	<b>3143.21</b>	<b>3759.31</b>	<b>4520.58</b>	<b>5339.92</b>	<b>2621.41</b>	<b>2913.64</b>	<b>3301.49</b>	<b>3761.27</b>	<b>4263.89</b>
2.1	Opening balance	2416.44	2728.65	3143.21	3759.31	4520.58	2370.47	2621.41	2913.64	3301.49	3761.27
2.2	Depreciation during the Year	312.21	414.56	616.10	761.27	819.34	250.94	292.23	387.84	459.78	502.62
<b>3.0</b>	<b>Consumer Contributions(3.1+3.2)</b>	<b>962.47</b>	<b>1038.16</b>	<b>1039.04</b>	<b>1039.04</b>	<b>1039.04</b>	<b>962.47</b>	<b>1038.16</b>	<b>1039.04</b>	<b>1039.04</b>	<b>1039.04</b>
3.1	Opening balance	611.36	962.47	1038.16	1039.04	1039.04	611.36	962.47	1038.16	1039.04	1039.04
3.2	Additions during the year	351.11	75.69	0.88	0.00	0.00	351.11	75.69	0.88	0	0
<b>4.0</b>	<b>Working Capital</b>	<b>42.90</b>	<b>45.97</b>	<b>49.89</b>	<b>55.50</b>	<b>61.89</b>	<b>34.65</b>	<b>39.66</b>	<b>43.63</b>	<b>50.41</b>	<b>52.23</b>
4.1	O&M (45 days Net O&M Expenses)	42.90	45.97	49.89	55.50	61.89	34.65	39.66	43.63	50.41	52.23
4.2	O&M Stores Inventory	-	-	-	-	-	-	-	-	-	-
<b>5.0</b>	<b>Change in Rate Base((1.2-2.2-3.2)/2)</b>	<b>582.79</b>	<b>1555.43</b>	<b>988.44</b>	<b>138.13</b>	<b>443.23</b>	<b>64.76</b>	<b>765.19</b>	<b>517.40</b>	<b>240.64</b>	<b>388.36</b>
<b>6.0</b>	<b>Regulated Rate Base(1.1-2.1-3.1+4+5)</b>	<b>3251.00</b>	<b>5392.29</b>	<b>7940.08</b>	<b>9072.26</b>	<b>9660.00</b>	<b>2770.69</b>	<b>3605.64</b>	<b>4892.20</b>	<b>5657.01</b>	<b>6287.84</b>
<b>7.0</b>	<b>Capital Structure</b>										
7.1	Debt, (percent)	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%	75.00%
7.2	Equity, (percent)	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
<b>8.0</b>	<b>Cost of Funds (percent)</b>										
8.1	Cost of Debt, (percent)	12.00%	12.00%	12.00%	12.00%	12.00%	10.00%	10.00%	10.00%	10.00%	10.00%
8.2	Return on Equity, (percent)	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%
<b>9.0</b>	<b>*WACC ((7.1 X 8.1)+(7.2 X 8.2))</b>	<b>12.50%</b>	<b>12.50%</b>	<b>12.50%</b>	<b>12.50%</b>	<b>12.50%</b>	<b>11.00%</b>	<b>11.00%</b>	<b>11.00%</b>	<b>11.00%</b>	<b>11.00%</b>
<b>10.0</b>	<b>Return on Capital Employed, (6X 9)</b>	<b>406.38</b>	<b>674.04</b>	<b>992.51</b>	<b>1134.03</b>	<b>1207.50</b>	<b>304.78</b>	<b>396.62</b>	<b>538.14</b>	<b>622.27</b>	<b>691.66</b>



**Annexure-F**  
**Transmission Charge/Rate as Filed by APTRANSCO, Rs. Cr.**

S.No	Details	APTRANSCO				
		2009-10	2010-11	2011-12	2012-13	2013-14
1	<b>Expenditure (2 to 9)</b>	<b>749.02</b>	<b>965.81</b>	<b>1268.32</b>	<b>1438.25</b>	<b>1585.04</b>
2	Operation & Maintenance Cost	347.95	372.87	404.69	450.19	501.98
3	O&M Carrying Costs	0.00	0.00	0.00	0.00	0.00
4	Depreciation	312.21	414.56	616.10	761.27	819.34
5	Advance Against Depreciation	88.86	178.38	247.53	226.79	263.72
8	Income Tax	-	-	-	-	-
10	Special Appropriation	-	-	-	-	-
11	<b>Expenses Capitalized (12 &amp; 13)</b>	<b>86.07</b>	<b>76.22</b>	<b>68.51</b>	<b>72.25</b>	<b>75.61</b>
12	IDC Capitalized	-	-	-	-	-
13	O&M Expenses Capitalised	86.07	76.22	68.51	72.25	75.61
14	<b>Net Expenditure (1 - 11)</b>	<b>662.95</b>	<b>889.59</b>	<b>1199.81</b>	<b>1366.00</b>	<b>1509.43</b>
15	Return on Capital Employed	406.38	674.04	992.51	1134.03	1207.50
16	Non Tariff Income	25.26	25.26	25.26	25.26	25.26
17	<b>Net Revenue Requirement (14+15-16)</b>	<b>1044.06</b>	<b>1538.36</b>	<b>2167.06</b>	<b>2474.77</b>	<b>2691.66</b>
18	<b>Tariff &amp; Revenue (Rs/KW/Month)</b>	<b>62.27</b>	<b>84.55</b>	<b>102.43</b>	<b>113.29</b>	<b>110.92</b>
19	<b>Capacity (MW)</b>	<b>13973.01</b>	<b>15162.00</b>	<b>17631.00</b>	<b>18203.00</b>	<b>20222.00</b>
	EPDCL	6223.17	6770.82	7908.04	8171.50	9101.46
	CPDCL	2134.74	2322.60	2712.70	2803.08	3122.08
	SPDCL	2144.20	2332.89	2724.72	2815.50	3135.91
	NPDCCL	3008.90	3273.69	3823.54	3950.92	4400.55
	Others (3rd Party & Open Access)	462.00	462.00	462.00	462.00	462.00

**Annexure-G**  
**Transmission Charge/Rate, Commission's Calculations, Rs.Cr.**

S.No	Details	APERC				
		2009-10	2010-11	2011-12	2012-13	2013-14
1	<b>Expenditure (2 to 9)</b>	<b>535.16</b>	<b>617.38</b>	<b>745.56</b>	<b>872.86</b>	<b>930.98</b>
2	Operation & Maintenance Costs	281.09	321.69	353.89	408.85	423.68
3	O&M Carrying Costs	3.13	3.47	3.83	4.24	4.68
4	Depreciation	250.94	292.23	387.84	459.78	502.62
5	Advance Against Depreciation	-	-	-	-	-
8	Income Tax	-	-	-	-	-
10	Special Appropriation	-	-	-	-	-
11	<b>Expenses Capitalized (12 &amp; 13)</b>	<b>26.55</b>	<b>40.24</b>	<b>42.69</b>	<b>64.76</b>	<b>43.21</b>
12	IDC Capitalised	-	-	-	-	-
13	O&M Expenses Capitalised	26.55	40.24	42.69	64.76	43.21
14	<b>Net Expenditure (1 - 11)</b>	<b>508.62</b>	<b>577.15</b>	<b>702.87</b>	<b>808.11</b>	<b>887.77</b>
15	Return on Capital Employed	304.78	396.62	538.14	622.27	691.66
16	Non Tariff Income	25.26	25.26	25.26	25.26	25.26
17	<b>Net Revenue Requirement (14+15-16)</b>	<b>788.13</b>	<b>948.50</b>	<b>1215.75</b>	<b>1405.12</b>	<b>1554.16</b>
18	<b>Tariff &amp; Revenue (Rs/KW/Month)</b>	<b>47.79</b>	<b>50.86</b>	<b>63.47</b>	<b>65.50</b>	<b>61.03</b>
19	<b>Capacity, MW</b>	<b>13744.00</b>	<b>15541.00</b>	<b>15963.00</b>	<b>17877.00</b>	<b>21222</b>
	<i>EPDCL</i>	2079.00	2260.00	2319.00	2613.00	3118.00
	<i>CPDCL</i>	5864.00	6385.00	6550.00	7402.00	8869.00
	<i>SPDCL</i>	2936.00	3203.00	3295.00	3720.00	4439.00
	<i>NPDCL</i>	2012.00	2190.00	2246.00	2539.00	3043.00
	<i>3rd Party</i>	462.00	462.00	462.00	462.00	462.00
	<i>Open Access</i>	391.00	1041.00	1091.00	1141.00	1291.00

## Acronyms and Abbreviations

<b>A&amp;G</b>	Administration and General
<b>APERC</b>	Andhra Pradesh Electricity Regulatory Commission
<b>APGENCO</b>	Generation Corporation of Andhra Pradesh
<b>APPCC</b>	AP Power Co-ordination Committee
<b>APSEB</b>	Andhra Pradesh State Electricity Board
<b>APTRANSCO</b>	Transmission Corporation of Andhra Pradesh Limited
<b>ARR</b>	Aggregate Revenue Requirement
<b>C&amp;AG</b>	Comptroller and Audit-General
<b>CAPEX</b>	Capital Expenditure
<b>CERC</b>	Central Electricity Regulatory Commission
<b>CGM</b>	Chief General Manager
<b>COD</b>	Date of Commission
<b>CPI</b>	Consumer Price Index
<b>Cr</b>	Crore
<b>DISCOMs</b>	Distribution Companies
<b>ED</b>	Executive Director
<b>EHT</b>	Extra High Tension
<b>FA&amp;CCA</b>	Financial Advisor and Chief Controller of Accounts
<b>GIS</b>	Gas Insulated Substation
<b>GoAP</b>	Government of Andhra Pradesh
<b>GoI</b>	Government of India
<b>IDC</b>	Interest During Construction
<b>IP1 license</b>	Infrastructure Provider 1 License
<b>IPP</b>	Independent Power Producer
<b>ISTS</b>	Inter State Transmission System
<b>kW</b>	Kilo-watt
<b>LOA</b>	Letter of Acceptance
<b>MW</b>	Mega-watt
<b>MYT</b>	Multi Year Tariff
<b>NEDCAP</b>	Non-Conventional Energy Development Corporation of Andhra Pradesh
<b>NTI</b>	Non-Tariff Income

<b>NTPC</b>	National Thermal Power Corporation
<b>O&amp;M</b>	Operating and Maintenance
<b>O.P No.</b>	Original Petition Number
<b>OA</b>	Open Access
<b>OFC</b>	Optical Fiber Cable
<b>PFC</b>	Power Finance Corporation
<b>PGCIL</b>	Power Grid Corporation of India Limited
<b>POWER GRID</b>	Power Grid Corporation of India Limited
<b>PPA</b>	Power Purchase Agreement
<b>PSU</b>	Public Sector Undertaking
<b>R&amp;M</b>	Repair and Maintenance
<b>RAC</b>	Regulatory Affairs Cell
<b>RE</b>	Revised Estimate
<b>RKM</b>	Route Kilometers
<b>ROCE</b>	Return on Capital Employed
<b>RoE</b>	Return on Equity
<b>RRB</b>	Regulated Rate Base
<b>SCADA</b>	Supervisory Control and Data Acquisition
<b>SRLDC</b>	The Southern Regional Load Dispatch Centre
<b>SRPC</b>	Standing Committee in Southern Regional Power Committee
<b>STU</b>	State Transmission Utility
<b>T.O.O</b>	TRANSCO Office Order
<b>TL&amp;SS</b>	Transmission Lines and Substation
<b>UMPP</b>	Ultra Mega Power Project
<b>WPI</b>	Wholesale Price Index
<b>WRPC</b>	Western Regional Power Committee

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