CRISIL
INFRASTRUCTURE
ADVISORY

Forum of Regulators

(Assessment of reasons for financial viability of utilities)

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1 HARYANA

1.1 Introduction

Haryana Electricity Regulatory Commission was established on 17th August 1998 as an independent statutory body corporate as per the provision of the Haryana Electricity Reform Act, 1997. Haryana was the second State in India to initiate the process of Reform & Restructuring of the Power sector in India.

The erstwhile Haryana State Electricity Board (HSEB) was unbundled into two corporate bodies namely Haryana Power Generation Company Limited (HPGCL) for the Generation of Power and Haryana Vidyut Prasaran Nigam Limited (HVPNL) for the Transmission & Distribution of power within the state of Haryana. Subsequently, the activity of distribution and retail supply of power was entrusted w.e.f. 1st July 1999, to Uttar Haryana Bijli Vitran Nigam Limited (UHBVNL) for north circles and Dakshin Haryana Bijli Vitran Nigam Limited (DHBVNL) for south circles of Haryana.

1.2 Key Findings

The increase in the financial losses of Haryana can be attributed to following factors:

- Lack of true-up mechanism for various cost parameters of the ARR (except for power purchase cost which is passed by the way of Fuel Surcharge Adjustment (FSA) to the consumers)
- Disallowance of interest cost on the short-term borrowings for meeting the revenue deficit of prior period and carrying cost for time lag involved in recovery of FSA
- Lack of appropriate mechanism for recovery of revenue deficit
- No revision of retail supply tariff leading to increase in gap between average cost of supply per unit and average realization per unit
- No return has been provided to the Discoms as capital employed is negative for both the DISCOMs
- Table below summarises the net impact of all these factors in terms of financial numbers. All these factors are discussed in detail in later section.

Particulars (Rs. Crs)	FY07	FY08	FY09	Accumulated Losses[1] up to FY09
UHBVN	301.56	499.98	1218.38	2778.32

[1] Source: Balance Sheet of the Utilities (*Accumulated losses are consolidated losses since the inception of the utilities in 1999*)

Particulars (Rs. Crs)	FY07	FY08	FY09	Accumulated Losses[1] up to FY09
DHBVN	113.22	281.38	265.27	1260.98
Total	**414.78**	**781.36**	**1483.65**	**4039.30**

1.3 Approach followed for approving various components

In this section we bring forth the approach adopted by the Commission for approving various components which have bearing on the financial viability of the distribution utilities.

1.3.1 Sales

Haryana being predominantly an agricultural State has a significant share of unmetered agricultural consumption which is billed on flat rate basis. Therefore, the estimate for consumption by agriculture category is important while determining the total sales for the DISCOMs.

The sales estimate for all metered categories has been based on the average Annual Load Factor (ALF). However, considering Haryana has remained an energy deficit State, the Commission has adjusted the consumer wise sales estimate based on the ALF (excluding agriculture) to the extent of volume of power available (net of losses) from various sources.

The Commission projects the consumption of metered agriculture tube-well consumers on the basis of the average ALF. For Unmetered Agriculture Category, the Commission has estimated the energy consumption based on the pattern of the consumption of metered agriculture pump sets. Though Commission had directed the distribution licensee to submit credible data to correctly estimate the consumption of unmetered agricultural consumers, the licensee had failed to submit sufficient field data of segregated agricultural feeders and install MDI meters to record energy flow to agriculture pump sets. The table below shows the total sales approved by the Commission and actual[2] sales from FY06 to FY10.

Table 1: Approved and Actual Sales in Haryana

Particulars	FY06	FY07	FY08	FY09	FY10
Proposed Sales (MUs)	15331	17028	18026	19492	21710
Approved Sales (MUs)	13738	15857	17992	21038	20395
Actual Sales (MUs)	15232	16639	18287	19294	22644
Variation (Approved – Actual)	*-1494*	*-782*	*-295*	*1744**	*-2249*

[2] Actual refers to the actual figures as per the annual accounts of both the Discoms i.e. DHBVN and UHBVN

** True-up orders for UHBVN & DHBVN are not available. Hence, the reason for approved sales being higher than the actual sales for FY 09 is not available. However, the Commission had considered additional availability of power from 600MW new generating station.*

It can be observed that the sales figure has been underestimated as against the projections made by the DISCOMs during the period FY 06 to FY 10 excluding FY 09. Though the increase in sale would lead to increase in revenue, approval of lower sales decreases the approved power purchase quantum resulting in a lower power purchase cost. This impact has been considered in the total actual power purchase cost of the utilities in the subsequent section (1.3.3).

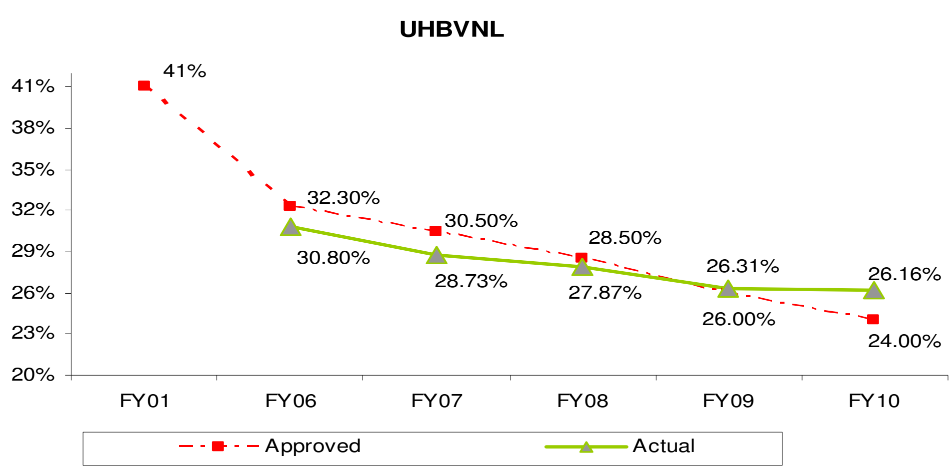
1.3.2 Distribution Loss

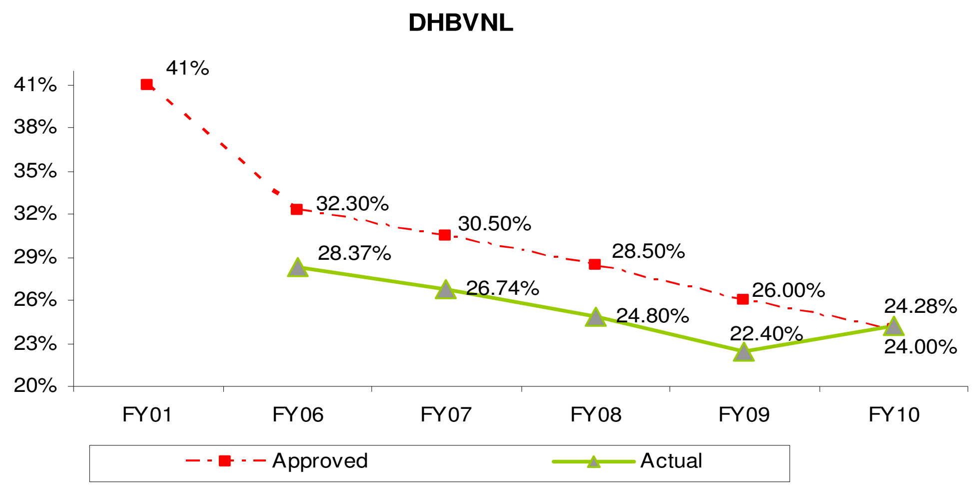
The Commission had been assessing the performance of the DISCOMs based on the few parameters i.e. Distribution loss, power supply-quantum and quality including power regulatory measure, damage rate of distribution transformers and fatal and non fatal accidents. The Commission had done a detailed analysis for all these parameters. A performance report on these parameters is submitted by the DISCOMs each year along with their ARR petition.

Post the power sector reforms in Haryana, the Commission had restated the T&D losses from approximately 29% reported by the power utilities to approximately 41% after scrutinizing the power purchase and sales details including power flow to the large un-metered agriculture consumers. The approach for setting of loss reduction targets by the Commission is primarily based on the reduction in loss level achieved in the past years and capital expenditure planned by the DISCOMs. However, no long-term loss reduction targets have been set forth by the Commission.

The Graph below shows the approved and actual distribution loss for all the DISCOM's.

Figure 1: Approved and Actual Loss levels





Note: Actual losses are as per statistical report on UHBVN and DHBVN websites

Since no true-up has been carried out by the Commission for FY 06 to FY 10, the actual losses cannot be ascertained. The Commission in its Tariff Orders have mentioned that the Commission's estimate of sales to the agriculture consumers is lower than the sales estimated by the utilities. This is primarily due to distribution losses which are restated as excess units allocated to the agricultural consumers.

1.3.3 Power Purchase Cost

The State of Haryana has been a energy deficit state and thus the power procurement has not been demand driven but based on the estimates of power availability from various sources including owned generation, share from CGS, joint ventures, IPPs and other sources like bilateral, banking, UI, etc. The availability from short-term sources (including UI) has been approved based on the projections and agreements entered by the utilities.

Earlier HVPNL (Transmission Company) on behalf of the DISCOMs was responsible for the power purchase from various sources up to the period June, 2005. The available power was then allocated among the two DISCOMs based on their estimated sales and T&D losses for the respective years. However, post June 2005, the rights and obligation relating to procurement and bulk supply trading of power was transferred from HVPNL to HPGCL which was further transferred to the distribution licensee w.e.f. April, 2008 as per Government of Haryana notification in equal ratio.

As per the Commission Orders up to FY 09, the DISCOMs were required to pay for the power purchase cost as per the Bulk Supply Tariff (BST) approved by the Commission during the period FY06 to FY09. However, for FY10 the power purchases from central sources have been considered at an average rate of power purchase in FY09, while purchase from HPGCL was approved as per the generation tariff order. The power purchase rate from short term bilateral agreements have been approved as proposed by the DISCOMS. The table below shows the approved and actual power purchase cost for the two DISCOMs:

Table 2: Power Purchase Quantum

Power Purchase Quantum (MUs)	FY06	FY07	FY08	FY09	FY10
Approved	20293	22813	25164	28430	26835
Actual*	21641	23034	24840	25510	
Difference (Approved – Actual)	*-1348*	*-221*	*324*	*2920*	

The major variation in approved and actual power purchase quantum during FY 08-09 was on account of delay in commissioning of the 600MW DCR TPP state generating station. As a result the actual power purchase quantum was significantly lower than the approved power purchase quantum.

Table 3: Power Purchase Cost

Power Purchase Cost (Rs. Crs)	FY06	FY07	FY08	FY09	FY10
Approved	4232.15	5216.36	5988.95	7079.00	7425.47
Actual*	4542.60	5445.40	6925.00	8283.70	
Difference (Approved – Actual)	*-310*	*-229*	*-936*	*-1205*	

Table 4: Power Purchase Cost per Unit

Power Purchase Cost per Unit	FY06	FY07	FY08	FY09	FY10
Approved	2.09	2.29	2.38	2.49	2.77
Actual*	2.10	2.36	2.79	3.25	
Difference (Approved – Actual)	-0.01	-0.08	-0.41	-0.76	

** Actual refers to the actual figures as per the annual accounts of both the Discoms i.e. DHBVN and UHBVN*

During the years FY 09 & FY 10, it can be observed that the Commission has not taken into account the actual cost paid by the utility in the previous year while approving the power purchase cost resulting into underestimation of power purchase cost. For example, the actual per unit cost of power purchase cost for FY 08 was 2.79/kwh whereas the approved per unit cost for FY 09 was 2.49, resulting into increase in working capital cost. Further, an underestimation of sales has also lead to variations in actual and approved total power purchase cost.

Any increase in power purchase cost for the distribution licensee could be recovered by filing of Fuel Surcharge Adjustment (FSA) application as per the FSA formula to the Commission. Since there was a delay in filing of the FSA by the DISCOMs, the Commission had staggered the recovery of the FSA in three years without approving any interest/ holding cost on the same.

1.3.4 Operation and Maintenance Expenses

HERC had approved each of the components of O&M i.e. Employee Cost, R&M Cost and A&G cost separately in the tariff orders of the distribution utilities. There are no specific norms for O&M expenses and the Commission considers the audited annual accounts available for the purpose of approving each component of the O&M cost.

1.3.4.1 Employee Cost

For approving the employee cost, the Commission had further broken down the expenses and has projected each component of the employee expenses. – An escalation of 2% p.a. had been allowed on basic salary over the latest audited account. Dearness Pay had been assumed to be equal to 50% of the basic pay. Other allowances have been allowed based on actual percentage in previous years for each DISCOM of basic salary. Terminal Benefits had been approved based on actual payment basis.

Capitalization of expenses was done in the same proportion as that of capitalization to actual capital expenditure as per the previous year audited accounts. The table below shows the Proposed, Approved, Actual Employee cost (audited) and difference in Approved and actual figures.

Table 5: Employee Cost

Employee Cost (Rs Crs)	FY06	FY07	FY08	FY09	FY10
Proposed	434	461	518	636	1086
Approved	398	413	501	631	763
Actual*	470	514	563	1038	
Difference (Approved - Actual)	*-71.4*	*-100.7*	*-62.2*	*-406.9*	

**Actual refers to the actual figures as per the annual accounts of both the Discoms i.e. DHBVN and UHBVN*

The differences in actual and approved amounts have been significant during FY 06 to FY 09. The sudden increase in employee cost during FY09 is primarily due to accounting of pension and gratuity liabilities as per AS-15. Due to no truing up exercise followed in the State, the shortfall in employee cost remains uncovered.

1.3.4.2 Repair and Maintenance Expenses

The Commission has been approving R&M expenses @2% of the average Gross Fixed Asset during FY06 to FY08. In FY09, R&M expense was approved at 3% of the average GFA based on the most available audited accounts which was further reduced to 1.6% of the average GFA. The table below shows the proposed, approved and actual R&M cost.

Table 6: Repair & Maintenance Cost

R&M Expense (Rs Crs)	FY06	FY07	FY08	FY09	FY10
Proposed	53	72	95	151	203
Approved	51	56	77	125	95
Actual*	68	141	67	69	
Variation (Approved – Actual)	*-17.3*	*-85.6*	*10.3*	*55.7*	

1.3.4.3 Total O&M Expenses

The Commission approves the O&M expense based on latest available audited annual accounts. In absence of any true-up mechanism, the adverse financial impact of the gap in the approved and actual

O&M expense is borne by the utilities. The table below summarises the financial implication of higher O&M expense of the distribution utilities with respect to the approved O&M expense by the Commission.

Table 7: Summary of O&M expenses

O&M Expense (Rs Crs)	FY06	FY07	FY08	FY09	FY10
Proposed	518	565	656	862	1411
Approved	481	502	621	818	963
Actual*	572	707	704	1205	
Difference (Approved – Actual)	*-91.7*	*-205.6*	*-83.7*	*-386.9*	

**Actual refers to the actual figures as per the annual accounts of both the Discoms i.e. DHBVN and UHBVN*

1.3.5 Capital Expenditure

In FY06 and FY07, the Commission had approved the amount of new investment to the extent of borrowing for which the licensee had provided source-wise detail, unutilized loans drawn in the previous year and funding through consumer contribution and grants. However in FY08, the Commission had allowed capital expenditure which had been initiated and the amount of work which was expected to complete in the ensuing year. A detailed review of the actual works compared with the works approved by the Commission in the previous Tariff Order was undertaken while approving the capital expenditure for FY09 and FY10. Though the Commission noticed that the utilities had not taken prior approval for incurring certain expenditures, still it had allowed the same providing one time special dispensation based on the work wise progress made.

Table 8: Capital Expenditure

Capex (Rs Crs)	FY06	FY07	FY08	FY09	FY10
Proposed	388	487	1725	1587	1408
Approved	376	487	1528	1091	1230
Actual[3]	NA	640	1352	1295	
Difference (Approved – Actual)	*NA*	*-152.2*	*175.1*	*-203.9*	

Based on the audited accounts, it is observed that the utilities have undertaken higher capital expenditure during FY 07 and FY 09 as compared with the approved capital expenditure while have fallen short of the approved capital expenditure during FY 08.

The Commission has highlighted in the Order that the capital expenditure plan submitted by the Discoms is not fully implemented and changed mid-course without prior information/ approval of the Commission which leads to cost and time over-runs. This also constrains the desired improvement in the quality of supply of power and reduction in the technical & commercial losses.

[3] The actual capital expenditure has been computed based on difference between Closing and Opening Gross Fixed Assets and Work in Progress as per the annual accounts of each financial year

1.3.6 Depreciation

The average depreciation rate considered by the Commission for allowing depreciation is in line with the depreciation rates for various asset categories approved by the Ministry of Power. The value of assets taken for the purpose of the calculation of depreciation was the value of assets as per the latest audited accounts after excluding the assets funded out of the consumer contribution and rent earning assets.

Table 9: Approved and Actual Depreciation

Depreciation (Rs Crs)	FY06	FY07	FY08	FY09	FY10
Approved	155	170	193	227	219
Actual*	147	149	177	175	
Difference (Approved - Actual)	*8*	*21*	*16*	*53*	

**Actual refers to the actual figures as per the annual accounts of both the Discoms i.e. DHBVN and UHBVN*

1.3.7 Interest and Finance Charges

The interest cost is the sum of interest on short term, long term and government loans and finance charges. Interest on consumer deposits has also been considered as part of finance charges.

For FY06 and FY07, the Commission had allowed interest on loans for which the Discoms had provided loan-wise, project-wise and utilization-wise details. In absence of information regarding utilization of the loan amounts, the Commission had disallowed the interest on unutilized funds to be considered for determination of ARR. For FY 08 to FY 10, the Commission had examined the proposed capital investment plan of the utilities and accordingly determined the net interest expense after reducing interest capitalized for six months for assets added during the year.

Interest on working capital has been provided equivalent to one month of the ARR of the distribution utilities. In some of the years, the commission had reduced the interest on working capital by the excess cash balances at the closing of the year. The commission also provided for interest on regulatory assets, consumer deposits and other financial charges. The table below shows proposed, approved and actual interest charges.

Table 10: Interest Charges (including interest on working capital requirement)

Interest Charges (Rs Crs)	FY06	FY07	FY08	FY09	FY10
Proposed	119	142	188	594	609
Approved	82	88	79	157	250
Actual*	105	148	257	522	
Variation (Approved - Actual)	-23	-60	-178	-365	

**Actual refers to the actual figures as per the annual accounts of both the Discoms i.e. DHBVN and UHBVN*

The large variation in actual and approved interest expense is primarily on account of interest burden of short-term loans taken by the distribution utilities for meeting the revenue deficit.

1.3.8 Return

The tariff regulations provide for return on capital base for adequate return to the utilities. However, no return was allowed by the Commission during FY 06 to FY 10 as the capital base of both the DISCOMs was negative. However, UHBVNL was approved a return on interest loans at a rate of 0.5% as per the order of Hon'ble ATE in FY08.

Table 11: Reasonable Rate of Return

Particulars (Rs Crs)	FY06	FY07	FY08	FY09	FY10
UHBVNL	0	0	4.26	0	0
DHBVNL	0	0	0	0	0

1.3.9 Subsidy

The Government of Haryana provides subsidy support to the Discoms for the consumption of energy by the agricultural consumers in the State. Each year, the State Government announces the amount of budgetary subsidy it intents to provide to the State consumers which is considered by the Commission to determine the revenue gap each year.

Since agriculture and domestic categories are subsidized categories, the amount of deficit is estimated by computing the subsidy generated by the other subsidizing categories. The balance amount of cross-subsidy after meeting the subsidy requirement for domestic category is adjusted towards the deficit created by agricultural category. The State Government subsidy is considered for meeting the balance deficit. Any further deficit balance is either met through creation of regulatory asset, additional reduction in distribution losses or additional Government subsidy.

Table 12: Government of Haryana Subsidy

Particulars	FY06	FY07	FY08	FY09	FY10
Budgeted Subsidy (Rs. Crs)	1256.00	1464.88	1873.82	1681.98	2738.6

No carrying cost for delay in receipt of subsidy from the State Government has been provided by the Commission in the Tariff Orders.

1.3.10 Deficit/ Gap

There has been no true-up exercise undertaken by the Commission. In each of the tariff orders, the Commission has tried to meet the revenue deficit for the subsequent year through additional reduction in distribution losses or additional Government subsidy. In FY09 and FY10, the revenue deficit was left untreated. As per the annual accounts of UHBVN and DHBVN, it is observed that the accumulated financial loss of the two entities as on March-2009 is Rs. 2778.32 Crs. and Rs. 1260.98 Crs, respectively. The Commission in its FY 09-10 order has shown concern over the financial health of the distribution companies as well as the slow reduction in the loss levels in the State.

1.3.11 Regulatory Asset

The Commission has created regulatory assets in FY 09-10 as three quarters of the financial year was over and the Discoms had not submitted tariff proposal to bridge the revenue gap. The regulatory asset created also included the uncovered gap of FY 08-09 which was also not treated due to lack of any tariff proposal from the Discoms.

Table 13: Regulatory Gap

Particulars	UHBVN	DHBVN	Total
Regulatory Gap for FY 09-10 (Rs. Crs)	587.02	136.52	723.54

In the Tariff Order for FY 09-10, the Commission has permitted a carrying cost on the borrowings utilized for bridging the approved regulatory gap.

1.3.12 Tariff Increase

The Commission has not increased retail tariff in the state of Haryana from the period FY 05-06 to FY 09-10.

1.3.13 Tariff Reflective of Approved ARR

The Commission has addressed the revenue deficit each year by considering additional revenue resulting from further reduction in loss level, additional Government subsidy, and regulatory asset. However, in FY 08-09, the Commission had not been able to address the revenue deficit fully and therefore had left the same untreated. Interest cost against the revenue deficit left untreated was not approved by the Commission due to lack of adequate information submitted by the DISCOMs.

Table 14: Untreated Revenue Deficit

Particulars	UHBVN	DHBVN	Total
Untreated Revenue Deficit for FY 09-10 (Rs. Crs)	311.88	32.05	343.94

1.3.14 Issuance of True-up Order

The Commission has not undertaken any true-up exercise for past years. However, the net financial impact on the Discoms as per the annual accounts is summarized in table below:

Table 15: Accumulated Financial Losses

Particulars	UHBVN	DHBVN	Total
Accumulated Financial Losses[4] as per FY 08-09 annual accounts (Rs. Crs)	2778.32	1260.98	4039.30

[4] Accumulated losses are consolidated losses as per the annual accounts of UHBVN & DHBVN since the inception of the utilities

2 KARNATAKA

2.1 Introduction

The Government of Karnataka (GoK) initiated reform process in the power sector through a General Policy Statement issued during January 1997 followed by a detailed policy statement in 2001. The Karnataka Electricity Reforms Act (KERA) was enacted which came into effect from 1st June, 1999 under which the Karnataka Electricity Regulatory Commission (KERC) was established with effect from 15th November, 1999.

Erstwhile Karnataka Electricity Board (KEB) was unbundled and corporatised into a Transmission & Distribution Company called Karnataka Power Transmission Corporation Ltd (KPTCL) and a Generating company called Visvesvaraya Vidyuth Nigam Ltd (VVNL), on 1st April, 2000. Thereafter, KPTCL was further unbundled into 5 independent companies effective from 1st June 2002, with one transmission company namely KPTCL and four distribution Companies namely Bangalore Electricity Supply Company Ltd (BESCOM), Mangalore Electricity Supply Company Ltd (MESCOM), Hubli Electricity Supply Company Ltd (HESCOM) and Gulbarga Electricity Supply Company Ltd (GESCOM). KPTCL retained the functions of power purchase, transmission and bulk supply to the four DISCOMs while the DISCOMs were made responsible for distribution & retail supply of electricity to the consumers.

Later in 2005, another DISCOM was carved out of one of the existing DISCOM i.e. MESCOM. Further in line with the provisions of the Electricity Act 2003, the responsibility for bulk power purchase and supply in Karnataka was transferred to the distribution companies with effect from June 2005.

2.2 Key Findings

The increase in financial losses of Karnataka distribution companies can be attributed to following factors:

- Disallowance of power purchase cost on account of under-achievement in distribution loss targets specified for the distribution companies for FY 2005-06 & FY 2006-07. The Commission has stated in the APR for FY 2007-08 & FY 2008-09 that any under-achievement in distribution loss target during the MYT Control Period would be dwelt with at the time of true-up at the end of the control period.

- Disallowance in O&M expense in the true-up for FY 2005-06 & FY 2006-07 on account of bonus issuance and free/subsidised electricity for employees. The Commission had approved a higher O&M expense in FY 06-07 as against the claimed O&M expense. This was primarily due to pay revision arrears amounting to Rs 67.92 Crore approved over and above the actual O&M expense as per the Appellate Tribunal for Electricity (ATE) Order. For the MYT Control Period, O&M expense over and above the approved normative amount was disallowed by the Commission.

- Disallowance in interest and finance expense on account of interest on belated payment of power purchase cost. The DISCOMs did not claim for any interest on working capital requirement for FY 07-08 & FY 08-09. Since the Commission had approved interest & finance expenses including interest on working capital considering normative working capital, the approved interest and finance charges were higher than the DISCOMs claim.

- Shortfall and delay in subsidy receipt from the Government of Karnataka.

- Table below summarises the impact of all these factors in terms of financial numbers. All these factors are discussed in detail in later section.

Table 16: Financial Impact (Rs Crore)

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09
Disallowance in Power Purchase Cost	(310)	(391)	-	(63)
Disallowance in O&M expenses	(25)	48	(114)	(60)
Depreciation	-	-	370*	232*
Disallowance in interest & finance expenses	(14)	(107)	90	141
Shortfall in Receipt of Subsidy	(93)	(486)	(223)	(2,351)
Total Impact on Financial Viability	**(442)**	**(935)**	**123**	**(2,101)**

**The Commission approved depreciation is higher than the actual depreciation claimed by the DISCOMs on account of approval of Advance Against Depreciation which was not claimed by the DISCOMs*

2.3 Approach followed for approving various components

In this section we bring forth the approach adopted by the Commission for approving various components which have a bearing on the financial viability of the distribution utilities.

For the purposed of analysis, the Tariff/ APR/ True-up Orders issued by KERC have been considered. KERC had issued individual year Tariff Orders for FY 2005-06 & FY 2006-07 and a MYT Order for the Control Period from FY 2007-08 to FY 2009-10.

2.3.1 Sales

The sales mix in the State of Karnataka is skewed towards agricultural sales which formed approx 34% of the total sales in the region for FY 08-09. For the purpose of estimation of sales, the Commission had categorized the consumer under two category i.e. metered consumers and un-metered consumers. While the metered category consists of Domestic, LT and HT Commercial, LT and HT Industry, LT and HT Water Supply, HT Irrigation and HT Residential consumers, the unmetered category comprised of consumers categorized under of Bhagya Jyothi, Kutir Jyoti, LT Irrigation Pump sets and LT Street Lights.

The Commission has been estimating the sales to various metered categories of consumers based on the CAGR for short-term (2 years) to medium-term (5 years). However, for estimation of the sales to un-metered category of consumers, the Commission has considered the number of installation and their trends in average consumption level of past years. In the MYT Tariff Order i.e. during FY 2007-08 to FY 2009-10, the Commission had approved the un-metered sale based on the CAGR for growth of installations & energy consumption. The sales was further adjusted for number of factors like population, Government policies, number of hours of supply, target set, TERI report and sales proposed by the DISCOMs.

The approved, actual and trued-up sales for the DISCOMs are summarized in table below:

Table 17: DISCOMs Energy Sales (MUs)

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10*
Approved					
BESCOM	12741	12897	15887	17941	17539
MESCOM	2485	2215	2640	2872	2922
CESC	2495	2712	3018	3229	3650
GESCOM	3483	3091	3381	3585	4646
HESCOM	4802	4946	5581	5897	5871
Total – Approved	**26006**	**25860**	**30506**	**33524**	**34628**
Actual					
BESCOM	11614	14127	14934	16299	17222
MESCOM	2495	2452	2502	2732	2860
CESC	2388	3133	3167	3409	3548
GESCOM	2925	3503	4082	4246	4292
HESCOM	4668	5238	5303	5514	5738
Total –Actual	**24090**	**28453**	**29988**	**32199**	**33661**
Trued-Up##					
BESCOM	11614	14127	14934	16299	NA
MESCOM	2495	2452	2502	2732	NA
CESC	2388	3133	3167	3409	NA
GESCOM	2925	3503	4082	4246	NA
HESCOM	4668	5238	5303	5514	NA
Total Trued-up	**24090**	**28453**	**29988**	**32199**	NA

Source: Tariff /MYT Order issued by KERC

** Actual sales figure are from the MYT filing of the second control period. Further, the approved figures are as per the Revised Tariff Order for FY 09-10*

True-up figures for FY07-08 & FY 08-09 are APR figures approved by the Commission

Table 18: Total State Utilities Energy Sales (MUs)

Energy Sales (MUs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	26006	25860	30506	33524	34628
Actual	24090	28453	29988	32199	33661*
Trued-up	24090	28453	29988	32199	NA
Variation (Actual - Trued up)	0	0	0	0	NA

** Actual sales figure are from the MYT filing of the second control period*

It is observed that the Commission has overestimated sales for each of the years except for FY 2006-07. However, the Commission has approved actual sales in each of the true-up/ APR exercise based on actual/ provisional accounts of the DISCOMs.

2.3.2 Distribution Loss

For FY 06 & FY 07, the Commission had approved the distribution loss for each of the DISCOM based on the distribution losses for previous year and T&D loss reduction roadmap for the State of Karnataka furnished by the DISCOMs to CEA in connection with the 17th EPS. While reviewing the distribution loss levels for the previous year, the Commission has also analyzed the actual loss levels for towns/cities and the areas excluding town/cities. The Commission had directed the DISCOMs to reduce the loss levels in the 46 towns/cities (in the entire State) to less than 15%.

In the MYT Order, in absence of adequate studies to justify the loss level trajectory claimed by the DISCOMs, the Commission analyzed the actual distribution loss levels achieved by each DISCOMs in the past year both on a aggregate basis as well as disaggregate basis i.e. losses in towns/cities and areas other than towns/cities. Subsequently, a baseline loss level was determined for each DISCOM and based on the roadmap furnished to CEA for the loss reduction in the State, LT loss level as recommended by TERI and proposed investment, the Commission had fixed a loss reduction trajectory for each of the DISCOM for the control period.

Table 19: Distribution Loss Discom-wise (%)

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
BESCOM					
Approved	21.00%	20.50%	20.00%	19.00%	17.50%
Actuals	24.20%	23.73%	19.99%	16.70%	15.23%
Trued-up	21.00%	20.50%	19.99%	16.70%	15.23%
MESCOM					
Approved	15.36%	15.00%	14.90%	14.80%	14.50%
Actuals	15.51%	15.29%	13.71%	12.95%	12.64%
Trued-up	15.36%	15.00%	13.71%	12.95%	12.64%
CESC					
Approved	25.03%	22.00%	22.00%	21.00%	19.50%
Actuals	27.04%	25.80%	22.62%	17.35%	16.41%
Trued-up	25.03%	22.00%	22.62%	17.35%	16.41%

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
GESCOM					
Approved	27.04%	27.05%	27.05%	26.50%	25.00%
Actuals	39.10%	35.52%	26.03%	26.01%	25.53%
Trued-up	27.04%	27.05%	26.03%	26.01%	25.53%
HESCOM					
Approved	26.37%	25.00%	25.00%	24.00%	22.50%
Actuals	28.19%	27.82%	25.06%	25.15%	24.38%
Trued-up	26.37%	25.00%	25.06%	25.15%	24.38%

In the true-up exercise for FY 05-06 and FY 06-07, the Commission has retained the distribution loss target as approved in the tariff orders. Therefore, power purchase quantum and cost on account of higher than approved distribution loss level was borne by the DISCOMs which is detailed out in the subsequent power purchase section.

During the MYT Control period i.e. FY 07-08 onwards, any incentive/ penalty for the over/under achievement in distribution losses by the DISCOMs have not been accounted for in the respective year. The Commission has viewed that the incentive/ penalty applicable to each DISCOM would be adjusted at the end of the Control Period at the time of true-up for FY 2009-10. As per the Regulations on MYT Distribution Tariff, 2006:

> *"In case the actual distribution loss exceeds the normative loss level approved by the Commission, such excess loss shall be to the account of the Distribution Licensee.*
>
> *In case the actual distribution loss is less than the approved loss level, such savings shall be shared between the distribution licensee and the consumers in the ratio of 70:30 during the first Control Period and in the ratio as may be decided by the Commission in the subsequent Control periods."*

Consolidated approved, actual and trued-up distribution loss for the DISCOMs of Karnataka is summarized in the table below:

Table 20: Consolidated Distribution Loss Targets (%)

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	22.80%	21.96%	21.59%	20.64%	19.15%
Actual	26.67%	25.77%	21.61%	19.37%	18.28%
Trued-up	22.75%	21.95%	21.61%*	19.37%*	NA
Disallowance (Trued-up – Actual)	(3.92%)	(3.81%)	NA	NA	NA

** True-up figures for FY07-08 & FY 08-09 are as per APR Order*

2.3.3 Power Purchase

The major sources of power purchase for the Karnataka DISCOMs are State Generating Stations, KPCL, Central Generating Stations, Independent power producers (IPP), bilateral arrangements and others. In line with the terms of Section 39(1) of EA 2003, the GoK vide Order dated 10.05.2005 had notified the transfer of the existing PPAs of KPTCL to the DISCOMs in proportion of the energy consumption during FY 2004-05. The renewable energy projects were assigned to the DISCOMs based on the geographical location of the projects. The GoK had also considered the consumer mix of each DISCOM at the time of allocation of PPAs. Therefore, considering the favourable consumer mix of BESCOM and MESCOM, costlier energy was allocated to these DISCOMs.

The power purchase cost has been the highest cost incidence component in the overall ARR of the DISCOMs. For approval of the power purchase cost, the Commission has applied the merit order dispatch to approve the source-wise availability and cost. However, the Commission has included power available from the must run generating stations and energy from renewable sources.

The approved, actual and trued-up power purchase quantum is shown in the table below:-

Table 21: Power Purchase Quantum

Power Purchase (MUs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	33,688	33,136	40,552	44,018	47,731
Actual	32,850	38,329	40,444	41,961	42,441
Trued-up##	31,183	36,457	40,444	41,961	NA
Disallowance (Actual - Trued up)	(1,667)	(1,872)	-	-	-

True-up figures for FY07-08 & FY 08-09 are APR figures approved by the Commission

Considering the higher than approved distribution losses for FY 05-06 & FY 06-07, the Commission has disallowed the power purchase quantum (shown in Table above) during FY 2005-06 & FY 2006-07.

The table below shows the approved, actual and true-up power purchase cost for each of the DISCOMs:

Table 22: Discom Wise Power Purchase Cost (Rs Crore)

Power Purchase (Rs Crore)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
BESCOM					
Approved	3,418	3,605	4,708	5,764	6,779
Actual	3,360	4,581	4,940	6,083	6,162
Trued-up#	3,224	4,394	4,940	6,083	
Disallowance (Trued-up – Actual)	(136)	(186)	-	(38)	
MESCOM					
Approved	642	564	687	802	917
Actual	608	696	702	883	884
Trued-up#	607	694	702	883	
Disallowance (Trued-up – Actual)	(1)	(2)	-	-	
CESC					
Approved	760	632	748	887	990
Actual	642	849	833	1,089	1,132
Trued-up#	625	807	833	1,066	
Disallowance (Trued-up – Actual))	(17)	(41)	-	(23)	

Power Purchase (Rs Crore)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
GESCOM					
Approved	1,009	708	889	1,085	1,166
Actual	885	958	1,157	1,137	1,276
Trued-up#	738	847	1,157	1,135	
Disallowance (Trued-up – Actual))	(146)	(111)	-	(2)	
HESCOM					
Approved	1,440	1,117	1,381	1,638	1,792
Actual	1,237	1,314	1,394	1,897	1,783
Trued-up#	1,206	1,264	1,394	1,897	
Disallowance ((Trued-up – Actual))	(30)	(49)	-	-	
Consolidated					
Approved	7,269	6,626	8,414	10,175	11,642
Actual	6,731	8,398	9,025	11,089	11,238
Trued-up#	6,400	8,007	9,025	11,026	
Variation (Trued-up – Actual))	(331)	(391)	-	(63)	

 # True-up figures for FY07-08 & FY 08-09 are APR figures approved by the Commission

The Commission has disallowed power purchase quantum on account of under achievement of distribution loss targets set in the Tariff Orders for FY 2005-06 & FY 2006-07. Therefore, corresponding power purchase cost w.r.t. disallowed power purchase quantum has been reduced from the actual power purchase cost based on the average power purchase cost per unit. The disallowance in power purchase cost of Rs 63 Crores for FY 2008-09 is on account of payment to the suppliers over and above the PPA agreed rate of power purchase.

2.3.4 Operation and Maintenance Expenses

Historically, O&M expense was approved by the Commission based on the historical trend as well as the inflationary growth rates over actual past expenses. But with the implementation of Multi Year Tariff (MYT) Regulations in FY 07-08, the operation & maintenance expenses have been estimated considering the norms provided in the MYT Regulations.

For the MYT Control Period, the Commission had considered the weighted average rate of CPI and WPI to compute the average inflation rate. Since CPI (Industrial Workers) represents the inflationary pressure for increase for employee expenses and WPI represents the inflationary increase for A&G and R&M expenses, the Commission had considered 70% weightage for CPI and 30% weightage for WPI. Based on the actual CPI and WPI for FY 07, the inflation factor was computed at 5.37%. Further, in addition to the increase in O&M expense on account of inflation, the Commission had also considered an increase in O&M expenses due to the growth in business (based on increase in consumer numbers) and a reduction on account of gains due to efficiency factor.

The Commission approved the following formula for approval of O&M expenses. The same is used for projecting the O&M expenses for the control period.

O&M Cost $_t$ = O&M Cost $_{t-1}$ * [1 + (WII + CGI – X)]

Where,

'O&M Cost $_t$' is the normative O&M cost aproved by the Commission for the financial year t,

'WII' is the weighted inflation index of CPI and WPI based on the contribtion of employee cost, R&M and A&G towards the total O&M cost

'CGI' is the Consumer growth index, which is linked to increase (CAGR) in no of consumers

'X' is the efficiency factor

Approved, actual and trued-up O&M expense for each DISCOM is summarized in table below:

Table 23: Operation & Maintenance Costs for each DISCOMs

Particulars (Rs. Crore)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
BESCOM					
Approved	347	407	402	442	485
Actual	382	366	458	438	544
Trued-up	373	418	420	463	NA
Disallowance (Trued-up – Actual))	(9)	52	(38)	26	(59)
MESCOM					
Approved	108	127	122	131	142
Actual	142	113	130	156	167
Trued-up	137	110	122	131	NA
Disallowance ((Trued-up – Actual))	(5)	(3)	(8)	(24)	(26)
CESC					
Approved	109	130	169	193	221
Actual	152	147	177	198	217
Trued-up	151	147	156	173	NA
Disallowance (Trued-up – Actual))	(1)	0	(20)	(25)	3
GESCOM					
Approved	138	137	145	155	165
Actual	148	135	164	180	198
Trued-up	144	140	145	153	NA
Disallowance ((Trued-up – Actual))	(3)	4	(19)	(27)	(33)
HESCOM					

Particulars (Rs. Crore)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	207	257	232	247	262
Actual	264	218	266	267	290
Trued-up	258	212	238	257	NA
Disallowance ((Trued-up – Actual))	(6)	(6)	(27)	(9)	(28)

The consolidated disallowance on account of O&M expenses for the DISCOMs is shown in the table below:

Table 24: Consolidated Operation & Maintenance Costs

Particulars (Rs. Crore)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	909	1056	1069	1167	1275
Actual	1087	979	1195	1239	1418
Trued-up	1063	1027	1081	1179	NA
Disallowance (Trued-up – Actual)	(25)	48	(114)	(60)	NA

Disallowance in O&M expense in the true-up for FY 2005-06 & FY 2006-07 is primarily on account of bonus issuance and free/subsidised electricity for employees. However, the trued-up O&M expense is higher than the approved figure for FY 06-07. The same is primarily due to inclusion of Rs 67.92 Crore on account of pay revision arrears as per the Appellate Tribunal for Electricity Order.

For the 1st control period the O&M expenses were approved based on the normative estimation formulae and disallowance over and above the normative amount was done by the Commission in the APR Order.

2.3.5 Depreciation

The depreciation for the initial FY 2005-06 & FY 2006-07 was true-up as per actual and hence there is no financial impact on account of the same. In the MYT Order as well as the APR for the Control period, the approved and trued-up depreciation figures are higher than the actual on account of advance against depreciation which has been included along with the approval for depreciation. The consolidated approved, actual and trued-up depreciation figures are summarized in table below:

Table 25: Consolidated Depreciation (Rs Crore)

Particulars (Rs. Crore)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	344	160	446	525	611
Actual	296	236	160	202	354
Trued-up	296	236	530	434	NA
Disallowance (Trued-up – Actual)	-	-	370	232	NA

The higher approval for Rs 370 Crore and Rs 232 Crores for FY 07-08 & FY 08-09, respectively in the true-up is primarily on account of approval of advance against depreciation by the Commission.

1.1.1. Interest and Finance Charges

The interest and finance charges comprised of interest on capital loans, interest on consumer security deposit, interest on belated power purchase payments, interest on working capital and other interest & finance charges. In the Tariff Order for FY 05-06 and FY 06-07, the Commission had approved the interest for unsecured loans as part of total interest cost approved for each DISCOMs. However, under the MYT framework, the Commission computed the requirement of working capital based on the following norms:

- One month's O&M Expenses
- Stores, Materials and supplies as 1% of the opening GFA and
- Two months of receivable (based on the approved ARR of previous year)

Interest on capital loans were approved after undertaking a scheme-wise analysis for FY 05-06 & FY 06-07. Interest cost on new loans was disallowed by the Commission as the same would be considered in the ARR of subsequent year based on the capitalized assets and actual investments. Moreover, interest on payment of power purchase bills for past period was also disallowed. For the control period i.e. from FY 07-08 to FY 09-10, the Commission had allowed interest on new loans on the proposed capital investment as per the normative debt of 70% in accordance with the Order of the Hon'ble ATE. Interest on existing loan was approved based on the outstanding amount as per the audited balance sheet of the DISCOMs.

Apart from the capital and working capital loans, the Commission had allowed interest on consumer deposits and other financial charges. The growth in the amount of consumer deposit for the ensuing years was estimated based on the CAGR of past three years.

The DISCOM-wise approved, actual and trued-up interest and finance charges are summarized in table below:

Table 26: Interest & Finance Charges

Particulars (Rs. Crore)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
BESCOM					
Approved	66	125	294	377	442
Actuals	103	137	172	123	187
Trued-up	100	119	269	287	NA
Variation	(3)	(18)	97	164	NA
MESCOM					
Approved	17	41	54	67	81
Actuals	32	42	45	49	85
Trued-up	28	28	53	61	NA
Variation	(3)	(14)	8	12	NA
CESC					

Particulars (Rs. Crore)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	17	24	67	87	111
Actuals	26	40	52	67	93
Trued-up	23	31	54	54	NA
Variation	(2)	(8)	2	(13)	NA
GESCOM					
Approved	34	20	91	144	185
Actuals	19	66	103	93	132
Trued-up	19	37	83	90	NA
Variation	0	(29)	(20)	(3)	NA
HESCOM					
Approved	43	57	167	218	253
Actuals	75	130	160	194	267
Trued-up	70	92	164	175	NA
Variation	(5)	(38)	4	(19)	NA

Table 27: Consolidated Interest & Finance Charges (Rs Crores)

	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	176	268	673	894	1072
Actual	254	414	532	526	765
Trued-up	240	307	622	667	NA
Variation	(14)	(107)	90	141	NA

The consolidated trued-up interest & finance cost is lower than the actual expense during FY 05-06 and FY 06-07 primarily on account of disallowance of interest on belated payment of power purchase cost. The DISCOMs did not claim for any interest on working capital requirement for FY 07-08 & FY 08-09. Since the Commission had approved interest & finance expenses including interest on working capital considering normative working capital, the approved interest and finance charges were higher than the DISCOMs claim. However, the Commission has disallowed the interest on belated payment of power purchase cost for these years as well.

2.3.6 Return

The approach followed by the Commission for approving the reasonable rate of return to the DISCOMs has remained consistent during the period FY 06 to FY 10. Return on equity has been provided to the DISCOMs for determining the reasonable rate of return. While the Commission had allowed a RoE of 12% for FY 05-06, the same was increased to 14% as per the KERC tariff regulations in FY 06-07. Under MYT regime, the Commission allowed 14% RoE subject to a maximum of 30% of the capital investment.

2.3.7 Regulatory Asset

The Commission has not created any Regulatory asset during the period from FY 05-06 to FY 09-10.

2.3.8 Subsidy

The Commission computes the subsidy requirement of each DISCOM in the Tariff/ APR Order and has directed the GoK to release the respective subsidy amount in advance on quarterly basis. The major subsidized categories are the Bhagya Jyoti / Kutir Jyoti and IP sets consumers. Each year the subsidy amount requirement is estimated by the Commission and the ESCOM's are directed to take up the collection of subsidy amount from the GoK. The GoK commits the amount of subsidy that would be released each year for each of the utilities. The approved subsidy amount and release of subsidy by the GoK accounted in the audited/provisional accounts is shown in the table below.

Table 28: Approved and Received Subsidy

Particulars (Rs. Crore)	FY 05-06	FY 06-07	FY 07-08	FY 08-09
Subsidy Approved				
BESCOM	0	361		
MESCOM	0	195		
CESC	204	348		
GESCOM	342	253		
HESCOM	773	624		
Total	**1319**	**1781**		
Subsidy Received				
BESCOM	-	-		
MESCOM	-	-		
CESC	182	286		
GESCOM	383	369		
HESCOM	661	640		
Total	**1,225**	**1,295**		
Surplus/ (Shortfall) in subsidy receipt	**(93)**	**(486)**	**(224)***	**(2351)***

** Additional subsidy requirement as approved by the Commission in the APR for FY 07-08 & FY 08-09*

It is observed that the release of subsidy is not equal to the amount of subsidy estimated by the Commission. Also, the Commission in the true-up for FY 05-06 & FY 06-07 has considered the GoK committed subsidy at the time of issuance of the Tariff Orders for the respective years in spite of a lower subsidy realization by the individual DISCOM. For FY 07-08 & FY 08-09, the Commission in the APR exercise has considered the revenue deficit to be funded from additional subsidy from GoK. Therefore, delay and shortfall in receipt of subsidy amount from the Government would impact the financial health of the DISCOMs.

2.3.9 Tariff Increase

The Commission reduced the tariffs in the State for FY 2006-07 in view of the surplus available after considering the GoK committed subsidy amount. In the MYT Order, the Commission approved differential tariff for the DISCOMs. The retail tariffs for FY 07-08 were further reduced considering the GoK committed subsidy. In absence of issuance of an Order, the tariff for FY 08-09 remained unchanged followed by an increase in FY 09-10. The tariff revision in Karnataka during FY 06-07 to FY 09-10 is summarized in table below:

Table 29: Tariff Revision

Tariff	FY 06-07	FY 07-08	FY 08-09[5]	FY 09-10
BESCOM	Reduction of tariff by 15 to 20 Paise	-5.59%	No Change	8.74%
MESCOM	Reduction of tariff by 15 to 20 Paise	-4.23%	No Change	6.12%
CESC	Reduction of tariff by 15 to 20 Paise	-4.03%	No Change	5.87%
GESCOM	Reduction of tariff by 15 to 20 Paise	No Increase/ Decrease	No Change	6.52%
HESCOM	Reduction of tariff by 15 to 20 Paise	-3.79%	No Change	6.13%

2.3.10 Issuance of True up Order

The table below summarises the time lag between finalization of accounts and True up order.

Table 30: Lag time between Finalisation of Accounts & Issuance of True-up Order

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09
Issuance of Tariff Order	27-Sep-05	16-Oct-06	22-Jan-08	MYT Order
Finalisation of Annual Accounts for the Year (A)	30-Sep-05	30-Sep-06	30-Sep-07	30-Sep-08
Issuance of True-up/APR Order (B)	22-Jan-08	21-Feb-08	25-Nov-09	25-Nov-09
Time lag between Finalisation of Accounts and True-up Order (A-B) days	844	509	787	421

The Commission had provided for the carrying cost of revenue gap/surplus that was estimated in the true-up exercise undertaken for FY 02-03 to FY 05-06. Since there was a surplus of Rs 701.45 Crores the amount was deducted in the MYT Order. Similarly, carrying cost on the surplus amount post the truing up exercise was considered by the Commission. The revenue gap estimated from the ARR of each of the years FY 2007-08 & FY 2008-09 has been considered to be met through the Government subsidy as the same is primarily on account of consumption of energy by BJ/KJ & IP Set consumer. The Commission has directed the GoK to release the additional subsidy amount in maximum of twelve monthly instalments and also directed the DISCOMs to take up the matter with GoK for release of additional subsidy.

[5] The MYT Order for FY 2007-08 to FY 2009-10 was issued on 22nd January, 2008. Therefore, the tariff approved in the MYT Order remained applicable for FY 08-09 as well.

3 MADHYA PRADESH

3.1 Introduction

In the state of Madhya Pradesh, Madhya Pradesh Electricity Regulatory Commission is responsible for the issue of tariff orders. The Government of Madhya Pradesh (GoMP) on 31st May, 2005 restructured the functions and undertakings of Generation, Transmission and Distribution and Retail supply of electricity earlier being carried out by the Madhya Pradesh Electricity Board (MPSEB) to five companies i.e. 3 DISCOMs, one Generating and one Transmission company each. With effect from 1st June, 2005, the O&M agreement between MPSEB and the five companies came to an end and thereafter the three DISCOMS started functioning independently as distribution Licensees in their respective areas of License. Madhya Pradesh Power Generating Company Ltd (MPPGCL)was made responsible for generation and Madhya Pradesh Power Transmission MPPTCL was to provide transmission services for conveyance of electricity from generation stations of MP Power Generating Company Limited (MPPGCL) and other generating stations and also interconnection points of Power Grid Corporation of India Limited (PGCIL) and other Transmission Licensees to the interconnection points of the long-term users in the State and also undertake the functions of the State Transmission Utility (STU), State Load Despatch Centre and System Operators as provided in the Electricity Act, 2003. The Distribution function was given to three Distribution Companies viz:

- Madhya Pradesh Poorva Kshetra Vidyut Vitaran Company **(East),**
- Madhya Pradesh Paschim Kshetra Vidyut Vitaran Company **(West)** and
- Madhya Pradesh Madhya Kshetra Vidyut Vitaran Company **(Central)**

3.2 Key Findings

The increase in financial losses of DISCOMs can be attributed to following factors:

- The Commission disallows power purchase quantum of DISCOMs on account of high T&D loss. The Commission disallows sales while truing up which in turn results in lower estimation of Power purchase requirement. The disallowance of sales is mainly done for unmetered agriculture category.
- disallowance of the interest cost due to licensee's failure to provide information related to loan mapping with particular assets submitted by the DISCOMs.

Table below summarises the impact of all these factors in terms of financial numbers

S.No.	Attribute	Financial loss (FY 07-08) in Rs Crs

1	Disallowance of Power purchase	1290.93
2	Disallowance of Interest and finance charges	152.59
3	Disallowance on account of depreciation	84.62
	Total	1528.14

Note: In addition to the disallowance of Rs.1528.14 Crore mentioned in the table above, there is an additional burden on account of carrying cost on the uncovered gap. The carrying cost impact of the same has been computed to the tune of Rs. 49.08 Crore (as detailed in para 1.3.13 "Issuance of True up Order & its impact on working capital").

3.3 Approach followed for approving various components

In this section we bring forth the approach adopted by the Commission for approving various components which have bearing on the financial viability of the distribution utility.

Note: Proposed refers to figures proposed by the utilities, Approved refers to figures approved by Commission, Actual refers to actual figures as per audited accounts of DISCOMs, and Trued up refers to figures as per True Up orders by Commission.

Note: Tariff order for FY 05-06 was for the period of 10 months due to the unbundling activity being carried out and therefore the numbers are for 10 months and not 12 months. Also the approach followed for FY 05-06 is different for the year post FY 05-06 due to delay in the finalization of Terms and Conditions of Tariff, 2005... The section below details down the approach followed years post FY 05-06.

3.3.1 Sales

For metered categories the Commission arrived at sales by taking the sales forecast of the DISCOMs and trend in past sales. The sales forecasted by DISCOMs are based on the CAGR of 5 years sales, connected loads and number of consumers.

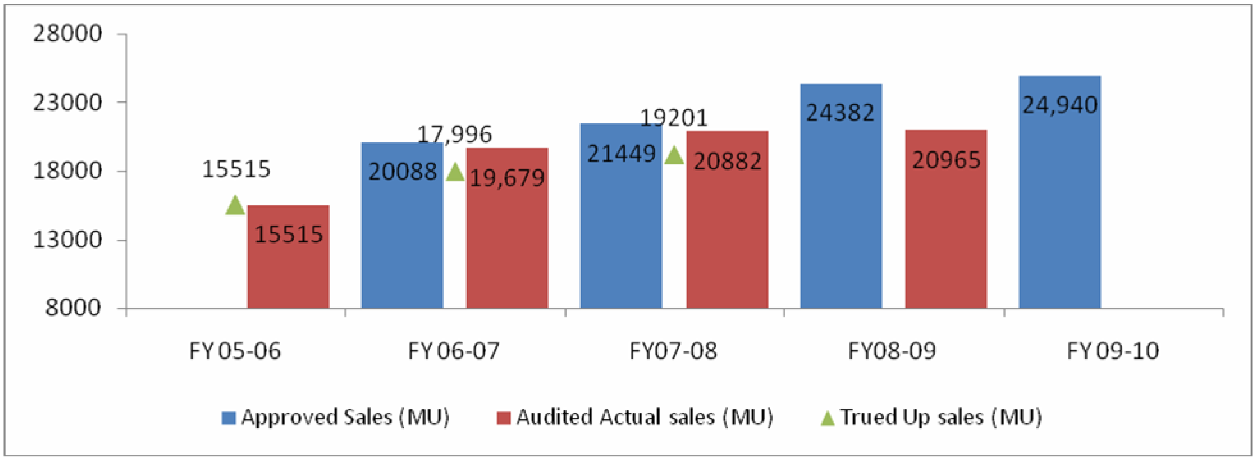
For Unmetered domestic category, the Commission arrived at sales differently for different years. E.g. for the year FY 07-08 domestic category were billed on the basis of 77 units per consumer per month in urban areas, and 38 units per consumer per month in rural areas. For FY 08-09,the Commission approved the sales to unmetered domestic category on the assumption of 30 units per consumer per month instead of 38 units per consumer per month for rural customers. For FY 09-10 the Commission accepted the sales projection by board and approved the proposed sales and directed that the sales for unmetered domestic category would be computed as per norms set up during true up. The norms were

- Un-metered consumers in domestic category to billed on the basis of 77 units per consumer per month in urban areas, and 38 units per consumer per month in rural areas;
- Un-metered agriculture consumers in rural areas as notified by GoMP under the Electricity Act, 2003 to be billed on the basis of 100 units per HP of sanctioned load per month for permanent connections and 130 units per HP of sanctioned load per month for temporary connections.
- Un-metered agriculture consumers in urban areas to be billed on the basis of 130 units per HP of sanctioned load per month for permanent connections and 150 units per HP of sanctioned load per month for temporary connections.

For the year FY 09, the Commission approved the proposed sales to un-metered consumers in domestic category in rural areas based on the Licensee assumption of 30 units per consumer per month instead of 38 units per consumer per month

The graph below shows the Total sales approved by the Commission and Trued Up sales from FY 05-06 to FY 09-10.

Figure 2: Total Approved and Trued Up Sales of Madhya Pradesh



There is a variation in the sales trued up by the Commission, audited sales and sales as per R15 (which is the billing information database of DISCOMs). For our analysis we have considered variation between trued up sales and audited sales. While truing up, the Commission has accepted the sales for metered categories but for unmetered categories Commission has applied its benchmarks (norms) mentioned above.The DISCOMs have argued that the higher sale are there as they had to supply additional quantum of power to unmetered consumers without raising bills to them *(source True up order FY 07-08)* which the Commission has not accepted. The table below shows the approved, audited and actual sales and also the agriculture consumption estimated, approved and actual.

Table 31: Sales

Categories	FY 05-06	FY 06-07	FY07-08	FY08-09	FY 09-10
Approved Sales (MU)		20088	21449	24382	
Audited sales (MU)	15515	19,679	20882	20965*	
Trued Up sales (MU)	15515	17,996	19201		
Variation between Trued Up sales and Sales as per audited sales	-	-1,682	-1681		

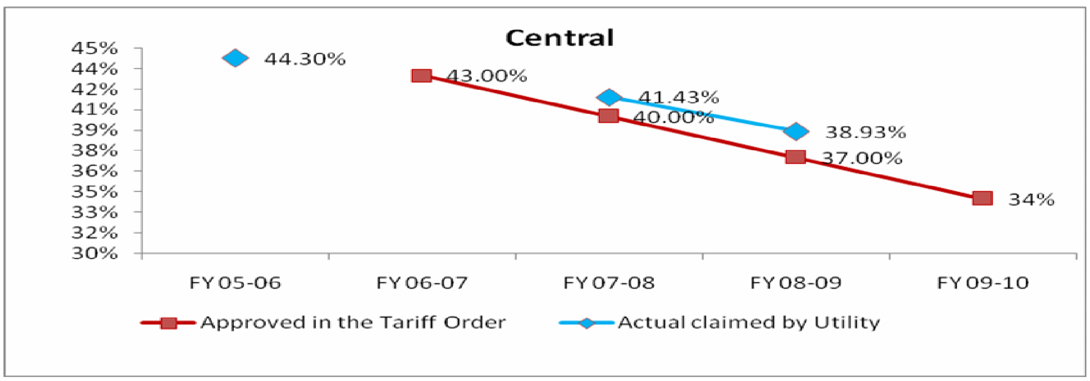
**Sales as per R15 taken from tariff Petition of FY 10*

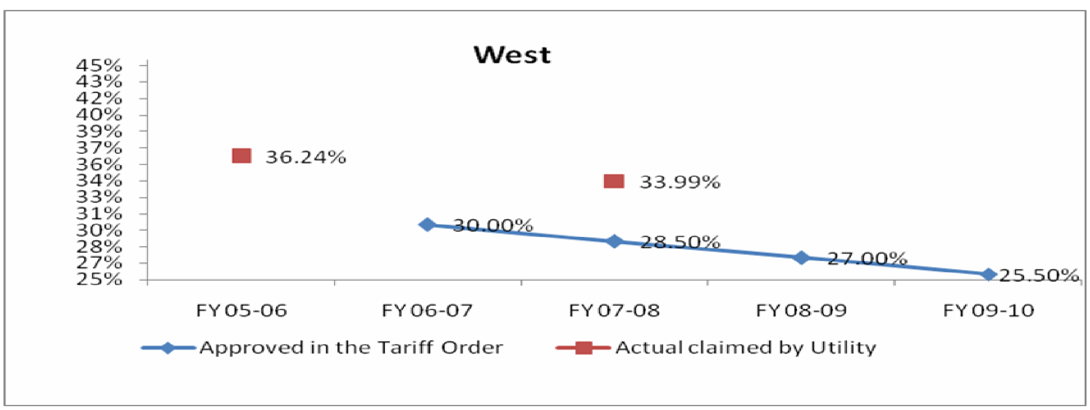
Agriculture Consumption	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Estimated		6699	NA	7217	7888
Approved	6,138	6,795	6,359	7,491	7,820
Actual		6700	7099.94		
Trued Up		NA	5480.57		

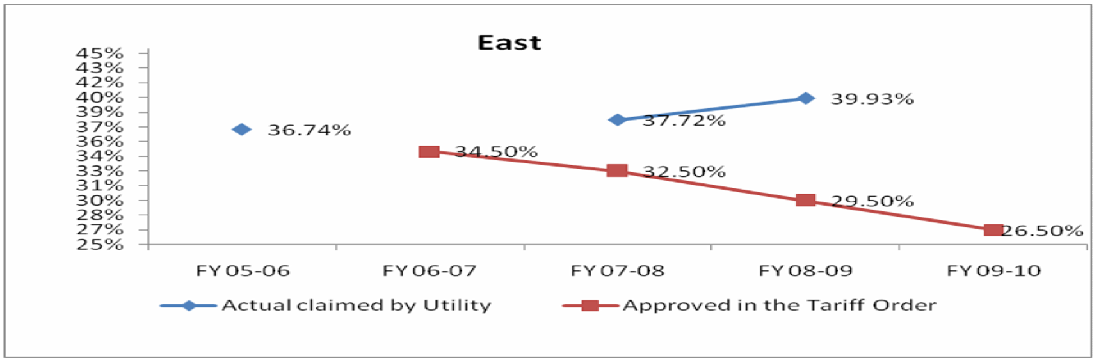
3.3.2 Transmission and Distribution Loss

The Government of Madhya Pradesh had laid down a long term trajectory for loss reduction in FY 06-07. Actual distribution losses of the three distribution licensees have generally been much higher than those specified by the State Government. While arriving at Power Purchase Quantum, the Commission considers the Distribution loss targeted by the Commission and not the actual distribution loss. The graph below shows the approved and actual loss claimed by the utility. The trued up loss for all the DISCOMs is equal to the Approved loss.

Figure 3: Loss levels Approved, and Actual







The Commission disallows power purchase to the extent of higher T&D loss. The disallowance on account of high T&D has been captured in the Power Purchase Cost section.

The Commission in FY 10-11 revised the trajectory of Distribution loss set by while notifying the MYT Regulation for distribution tariff. This was done because the DISCOMs were not able to adhere to the loss trajectory.

3.3.3 Power Purchase Cost

Under the Tansfer Scheme where in MPSEB was restructured into five new companies, the residual MPSEB was made with the functions of bulk purchase of electricity from generating companies and supply of electricity in bulk to the three Discoms of the State. Subsequently, the State Government notified M.P. Electricity Reforms Transfer Schemes Rules 2006 whereby the functions, properties, interest rights and obligations of the Residual Madhya Pradesh State Electricity Board relating to Bulk Purchase and Bulk Supply of Electricity along with the related agreements and arrangements were transferred and vested in MP Power Trading Company Limited (TRADECO). But GoMP via order of 14th March 2007, notified the percentage share of each Distribution Company with regard to different generating stations supplying the power to the State of Madhya Pradesh. The power allocation to the DISCOMs was further revised on 19th March 2008 .

The Commission follows a methodology for approving Power Purchase Quantum. The Commission takes the approved sales and then grosses it up by the normative Loss levels to arrive at the power required at the Discom periphery.The quantum thus arrived at is further grossed up by the STU losses to arrive at the quantum of power required at the State boundary. Then the external losses in MUs actually incurred are added to arrive at the total energy requirement.

In the true up of FY 06-07 the Commission arrived at Power purchase quantum by the above mentioned method and ascertained that there would be no requirement of purchase of Power from Short Term sources and therefore disallowed it. But as per audited accounts the purchase of power was carried out from short term sources which are a costly source of power.

Table 32: Power Purchase Quantum

Power Purchase Quantum (MUs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved		32,212.20	34,648.30	38,885.08	33,710.59
Audited	27495.44	32563	35895.69		
Trued Up	27495.45	29,897.03	30754.43		
Disallowance		**2665.48**	**5141.26**		

Table 33: Power Purchase Cost

Power Purchase Cost * (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved		5,542.97	5770.13	7323.07	7,561.41
Actual	4566.69	6,285.41	7,381.20	8,223.03	
Trued Up	4566.69	5,144.64	6,090.27		
Disallowance of Power Purchase Cost (Rs. Crs)	**0**	**1,140.77**	**1,290.93**		

**Power purchase cost includes Transmissiona charges as well*

Table 34: Per Unit Power Purchase Cost

Power purchase per unit (Rs/kWh)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	NA	1.721	1.665	1.883	
Actual	1.661	1.930	2.056		
Trued Up	1.661	1.721	1.980		

3.3.4 Operation and Maintenance Expenses

The Commission has approved O&M expenses based on the Norms fixed. The norms have been fixed on the basis of metered consumers, metered sales, 33 & 11kV network length and transformation capacity of power transformers. These norms exclude terminal benefits to be paid to employees, taxes to be paid to the Government or local authorities and fees to be paid to MPERC, which the Distribution Licensee shall claim separately. The Table below shows the norms specified by the Commission in Terms and Conditions for Determination of tariff.

O&M charges (Rs. In lakhs)	FY 07-08	FY 08-09	FY 09-10
For Metered Consumers (Rs lakh/1000 Consumer)	6.5	6.9	7.31
For Metered Sales (Rs Lakh/MU)	2.35	2.49	2.64
For HT Network length (Rs Lakh/100 ckt km)	16	17	18
For Transformation (33/11kV) (Rs Lakh/MVA)	1.53	1.62	1.72

The table below shows the approved, actual and Trued up O&M cost.

Table 35: Summary of O&M expenses

Operation and Maintenance Expenses	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10

Approved		1130.42	1154.41	1243	1,479.23
Actual	789.65	1,059.63	1255.48	1,468.75	
Trued-up	636.12	829.16	970.5		

(There is wide difference in the O&M expenses approved and Trued up because as per Commission the norms prescribed for O&M expenditure while framing the Regulations on terms and conditions of tariff for Generation, Transmission and Distribution Companies might have been understated for the Generation and Transmission Companies and overstated for the Distribution Companies. This was mainly because of paucity of data post unbundling for setting norms.)

The Commission True's up O&M expenses on the basis of Norms approved taking into account the actual additions during the year. Eg the Commission approved normative O&M expenses for FY 09-10 on the basis of determinants viz sales, network length as per that of FY 08-09 but at the time of true up the Commission would carry out true up on the basis of actual additions during the year.

For all the years the actual O&M cost has been greater than trued up O&M cost mainly on account of Terminal Benefits. The disallowance on this was made on two counts. One on the issue of terminal benefits of erstwhile MPSEB. The Commission had observed that the actual payments made for pension and terminal benefits to all pensioners/retirees of erstwhile MPSEB have already been allowed to MPPTCL. Second for the prospective pensioners working in the companies who retire after the date of transfer, the Commission disallowed terminal benefits on the grounds that they are mere provision and no funds were transferred to terminal benefit trust by these Companies. The other disallowance is on account of insurance charges which is also a provision and no payment has been made against it. The DISCOMs had also asked for expenses incurred by them for meeting the expenses of the erstwhile MPSEB, the Commission disallowed it on grounds that as the MPSEB has already been disintegrated therefore it is not a legitimate expense.

3.3.5 Capital Expenditure

The Commission has specified the "Guidelines for Capital Expenditure by the Licensees in MP". The Guidelines require the Licensees to submit to the Commission a five-year Business Plan containing physical and financial details of all investment schemes planned over the five-year horizon. The Commission had also mentioned in case the licensee deviates from the approved Business plan DISCOMs would have to file details of all such schemes which were not approved under the business plan.

In the tariff order of FY 09-10, the Commission has analysed that the financial progress vis-à-vis the investment plan for FY 07-08 and FY 08-09 combined has been 45% for East Discom, 21% by Central Discom and 92% for West DISCOM.

3.3.6 Depreciation

The Commission has not been approving depreciation as has been projected by the DISCOMs mainly on the grounds that projections of asset addition made by the Licensee are inflated and not in conformity with the past trend on assets. The Commission mentions that it will true up the allowed amount when the audited balance sheet of the year comes. The table below provide details of Approved, Audited and Trued up Depreciation.

Table 36: Depreciation Approved and Trued Up

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
GFA at the beginning of the year (Rs. Crs)	4032.42	4144.48	4465.19	4465.19	4465.19
Depreciation Approved (Rs. Crs)		161.94	165.09	95.68	94.86
Actual Depreciation (Rs. Crs)	231.03	200.28	186.69	268.70	
Trued Up Depreciation (Rs. Crs)	147.42	90.75	102.07		
Disallowance	83.61	109.53	84.62		

The Commission has disallowed depreciation on assets which have depreciated to the extent of 90%. over their useful life.

3.3.7 Return

The Commission has approved RoE @ 16% till FY 07-08 and then from FY 08-09 onwards it approved return RoE @ 14%.The Commission considers 30% of the addition to net GFA identified as funded through equity and then approves return thereon.

Return	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved		173.23	155.76	167.46	205.48
Actual Claimed	154.95	209.86	265.33		
Trued up	40.43	185.01	181.42		

3.3.8 Subsidy

The Commission approves subsidy in the true up order which is based on the actual subsidy received.

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Actual Subsidy	293.63	418.6	568.87	755.04*	-

**Actual Subsidy for FY 08-09 does not include subsidy for East DISCOM.*

3.3.9 Interest and Finance Charges

Interest and Finance charges comprise of interest on project specific loans, interest on working capital and interest on consumer security deposit.

Interest on Project Specific Loans

For all on-going works, the interest cost related to the loan funding of such works is considered as Interest During Construction (IDC) which is capitalised and added to the project cost at the time of asset capitalisation. Such interest cost is not considered as a pass through in the ARR. The Commission follows the principle that “the consumer can only be made to bear the interest cost related to those assets, which the consumer is making use of. The asset which is under construction is not used by the consumers; hence interest cost incurred by the Licensee during construction becomes a part of CWIP and is not allowed to be recovered through tariffs”. The Commission considers interest cost on assets which have been capitalised and have been added to the asset base. The Commission follows the below mentioned approach for allocation of GFA and CWIP into debt and equity.

- Net addition to GFA during FY 07-08[6] is worked out after subtracting from total addition to GFA, the consumer contribution amount as available from the Balance Sheet.
- 30% of the net addition to GFA during FY 07-08 has been considered as funded through equity and added to the total Equity in GFA considered at the end of FY 06-07, as per the FY 08-09 Tariff Order.
- Balance of net addition to GFA is considered as having been funded through debt and added to the total debt in GFA considered at the end of FY 06-07 as per the FY 08-09 Tariff Order.
- Debt repayments have then been subtracted from the total debt identified with completed assets as computed from above. Repayments have been worked out as pro-rata to total scheduled repayments during FY 07-08. Actual repayments have not been considered since there have been defaults in repayment of principal by the Licensee during FY 07-08.

The Commission then calculates the weighted average interest rate for each DISCOM to arrive at interest cost.

Interest on Working Capital

The Commission approved working capital under Working capital requirement for Wheeling and requirement for retail sale activity on normative basis. The interest on working capital is computed by taking SBI Benchmark PLR plus 2%.

The table below shows the total interest and Finance charges of all the DISCOMs from FY 05-06 to FY 09-10

Table 37: Interest Charges

Interest and Finance Charges	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	269.06	325.39	120.05	149.84	212.16
Actual	115.16	164.79	239.35	280.44	
Trued Up	111.46	85.69	86.75		
Disallowance	-3.7	-79.1	-152.6		

3.3.10 Regulatory Asset

The DISCOMs had proposed creation of Regulatory asset in FY 06-07 and FY 08-09. In FY 06-07 the DISCOMs had proposed part of gap (Rs. 1656.52 Crs) to be considered as regulatory asset. The Commission thereafter estimated that the revenue could be generated to bridge the gap thus leaving the

[6] The approach is FY 09-10 specific, therefore year considered with audited accounts is FY 07-08.

uncovered gap to the tune of Rs. 9.50Crs. For the year FY 08-09 the DISCOMs proposed the creation of regulatory asset to the tune of Rs.2284.46 Crs. The Commission later arrived at the gap figure of Rs. 59.14 Crs which was met via increase in tariff, thus leaving surplus of Rs. 0.86 Crs.

3.3.11 Tariff Increase

The Commission has increased the Tariffs in the state of Madhya Pradesh for all the years.

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Percent Tariff increase*	NA	4.8%	NA	2.28%	3.61%

CRIS Analysis

**The Tariff increase has been estimated by taking increase in Revenue.*

Note: The Tariff increase for FY 05-06 and FY 07-08 could not be estimated due to lack of information

3.3.12 Tariff reflective of Approved ARR

In the Tariff orders the Commission for FY 06-07 and FY 09-10 has left minor uncovered gaps. For FY 08-09 it has left a surplus. But in the True up order for FY 07-08 the Commission left an uncovered gap of Rs. 223.1 Crore

Note: The Tariff order for FY 07-08 is not available

3.3.13 Issuance of True up Order & its impact on working capital

The table below summarises the time lag between finalization of Accounts and True up order.

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Issuance of Tariff Order		31-Mar-06		29-Mar-08	29-Jul-09
Finalization of Annual Accounts for the Year (A)	30-Sep-06	30-Sep-07	30-Sep-08	30-Sep-09	
Issuance of True up Order (B)	16-Jan-08	16-Jun-09	13-Apr-10		
Time Lag between Finalization of Accounts and True up order (A-B) in days	473	625	560		

The Commission has not approved any carrying cost on gap determined for the year. The Table below shows the carrying cost of all the DISCOMs put together as on 31.3.2009.

Table 38: Impact on the Total Revenue Gap of DISCOMs due to disallowance of Carrying Cost

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Gap/(Surplus) as per True Up order/ un Audited-Annual Accounts (Rs. Crs)	1.11	(354.46)	223.1		
Carrying cost required (Rs. Crs)		NA	49.082		
Total Carrying cost (Rs. Crs)					49.08

CRIS Analysis

The carrying cost summarised in the Table 8 has been calculated by CRIS by applying interest rate of 11% on the accumulated gap each year upto Mar 31, 2009.

4 ORISSA

4.1 Introduction

In the state of Orissa, Orissa State Electricity Commission is responsible for the issue of Tariff orders. Orissa is an unbundled state i: e Generation, Transmission, and Distribution is carried out by different Utilities. There are four Distribution companies in the state of Orissa viz NESCO, WESCO, SOUTHCo and CESU. Orissa was among the first states to unbundle and carry out the reform process.

Among the four DISCOMs NESCO and WESCO have large base of EHT and HT consumers where as CESU and SOUTHCO have a large number of LT consumer base.

4.2 Key Findings

The Commission has trued up almost all the components based on audited Actuals barring A&G where it considers the approved A&G for true up purpose.

The Commission has followed its Distribution trajectory as the actual loss level of the DISCOM's was higher than the approved Loss levels and Commission categorically mentioned that it does not wish to burden consumers because of inefficiencies of the DISCOMs.

The Commission true's up Power Purchase Cost, employee cost, R&M, depreciation and interest based on audited actual.

The table below shows the financial impact of the disallowance made on the health of the utilities.

Particulars	FY 05-06	FY 06-07	FY 07-08
Expenses Disallowed on account of high T&D	91.95	134.71	239.93
Disallowance on account of A&G	29.08	34.38	NA
Impact on Financial Viability on account of Disallowance	121.03	169.09	239.93

Source: Tariff orders of Orissa

CRIS Analysis

4.3 Approach followed for approving various components

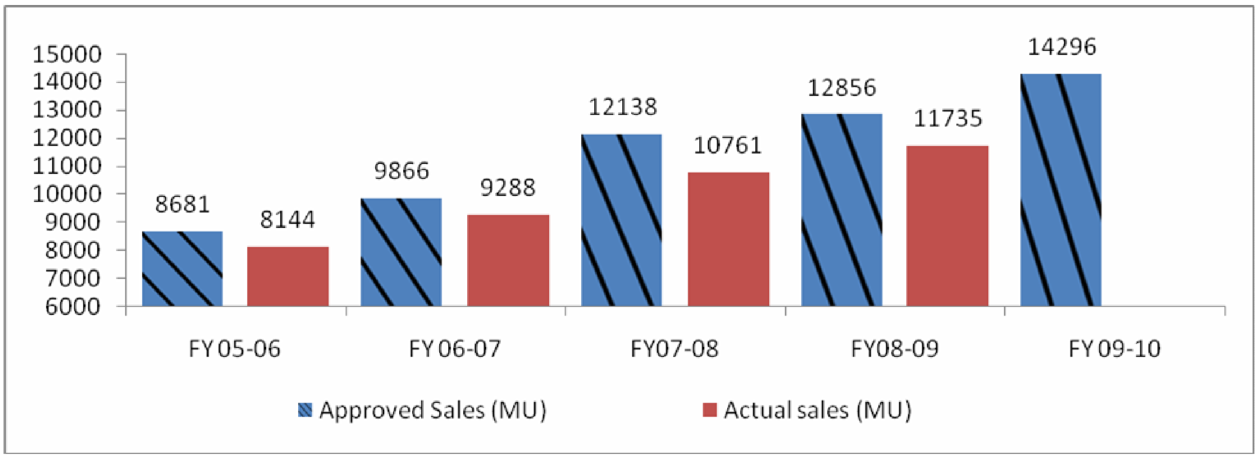
In this section we bring forth the approach adopted by the Commission for approving various components which have bearing on the financial viability of the Board/distribution utility.

Note: Proposed refers to figures proposed by the utilities, Approved refers to figures approved by Commission, Actual refers to actual figures as per audited accounts of DISCOMs, and trued up refers to figures as per True Up orders by Commission.

4.3.1 Sales

The Commission approves the sales forecast the DISCOMs by looking at the past trends of sales and checking it for the reasonability of the principles. The quantum of energy to be sold is determined by deducting the units deemed to have been lost in distribution by applying the benchmark loss level, as adopted by the Commission. The Commission approves sales, voltage wise. The sales for HT and EHT category are based on the load growth. The Commission also took into account the electrification of villages under RGGVY and BGJY schemes while projecting higher sales. The Commission has approved higher sales on account of expanded rural electrification under RGGVY and BGJY schemes, rapid urbanization and elevation in standards of living and theft control measures.

Figure 4: Total Approved and Actual Sales



The Table below shows the Proposed, Approved and Actual sales of the Orissa.

Categories	FY 05-06	FY 06-07	FY07-08	FY08-09	FY 09-10
Proposed	8792	9672	11762	12083	12915
Approved Sales (MU)	8681	9866	12138	12856	14296
Actual sales (MU)	8144	9288	10761	11735	

Source: Tariff Orders

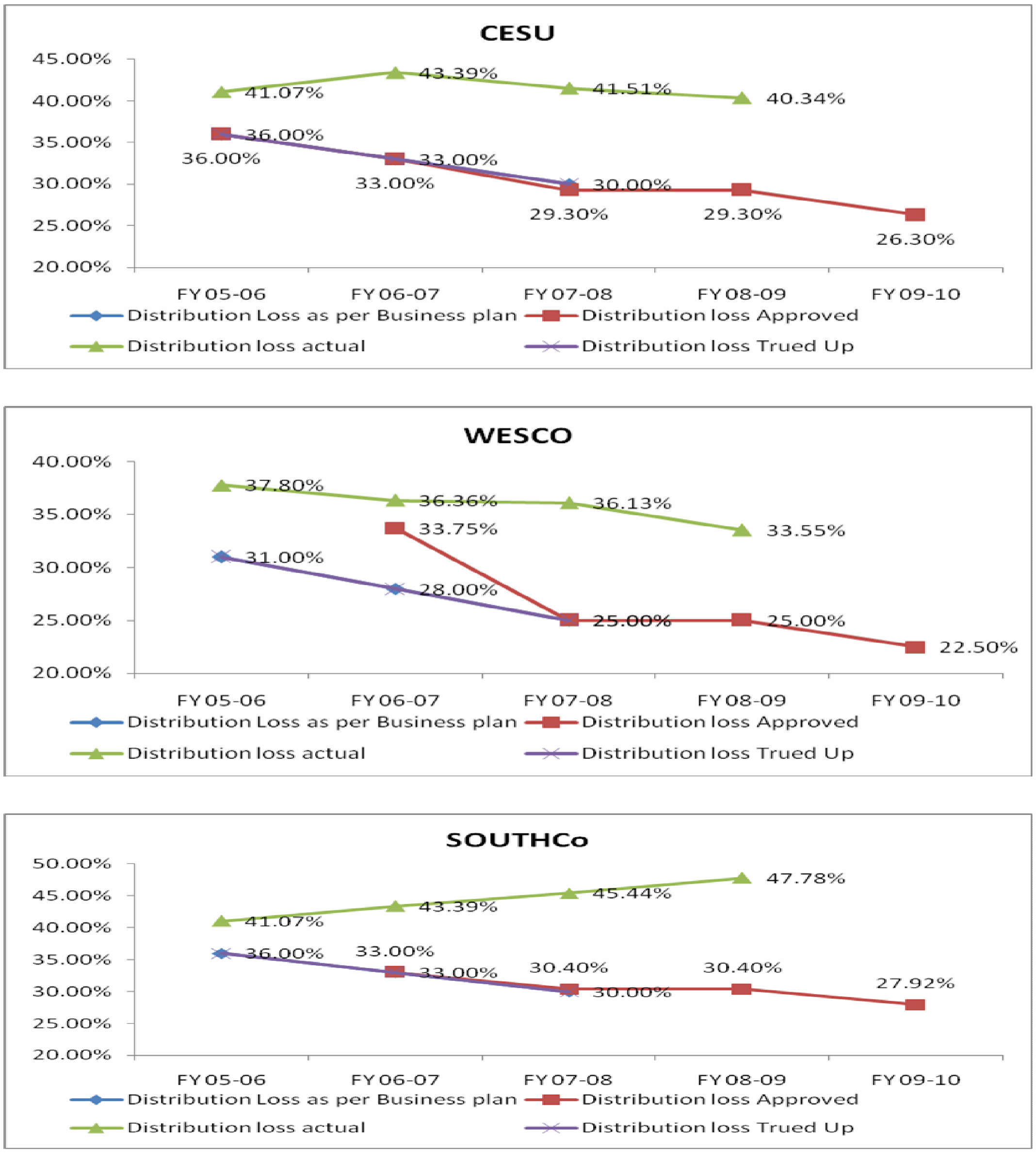
4.3.2 Transmission and Distribution Loss

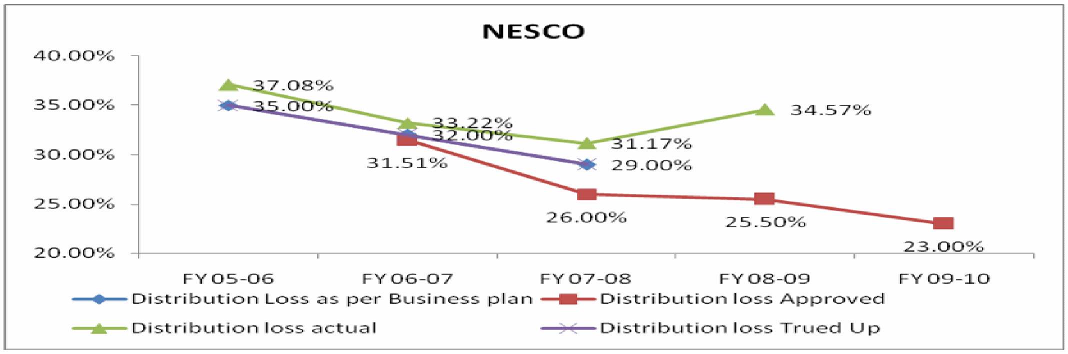
In the state of Orissa Distribution and AT&C loss are separately calculated. The baseline losses have been fixed by Commission in their first Business Plan order in the year 2005 which was based on the fillings by DISCOMs and report of high power Committee set up by the State Government. In the first and second Business Plan order the Commission set targets for AT&C, Distribution and Collection Efficiency for distribution Companies. The Commission uses AT&C loss for determining the performance of the distribution companies. However, distribution loss is taken into consideration in assessing sale from year to year while determining the Annual Revenue Requirement.

In the tariff order of FY 06-07 and FY 07-08 the Commission revised the trajectory set for Distribution and AT&C loss in the Business plan.

The graph below shows the T&D approved and Actual. The Commission has considered the approved T&D as trued up T&D.

Figure 5: Distribution loss Approved and Actual





The table below shows the AT&C approved as per Business plan, Approved as per ARR order and Actual.

CESU	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	45.00%	40.40%	35.00%	32.84%	27.80%
Approved in business plan	45.00%	40.40%	35.60%		
Actual	49.20%	47.60%	45.90%	45.23%	
NESCO	**FY 05-06**	**FY 06-07**	**FY 07-08**	**FY 08-09**	**FY 09-10**
Approved	39.60%	35.60%	30.40%	29.20%	24.50%
Approved in business plan	39.60%	36.10%	33.30%		
Actual	43.20%	40.70%	35.90%	39.48%	
WESCO	**FY 05-06**	**FY 06-07**	**FY 07-08**	**FY 08-09**	**FY 09-10**
Approved	36.50%	37.70%	28.00%	27.50%	24.00%
Approved in business plan	36.50%	32.32%	28.00%		
Actual	41.70%	40.00%	40.70%	37.63%	
SOUTHCO	**FY 05-06**	**FY 06-07**	**FY 07-08**	**FY 08-09**	**FY 09-10**
Approved	41.80%	37.70%	34.60%	34.60%	29.40%
Approved in business plan	41.80%	37.70%	34.20%		
Actual	43.90%	46.60%	48.70%	50.80%	
ALL OF ORISSA	**FY 05-06**	**FY 06-07**	**FY 07-08**	**FY 08-09**	**FY 09-10**
Approved	40.50%	37.90%	31.40%	30.40%	26.00%
Approved in business plan	40.50%	36.40%	32.40%		
Actual	44.70%	43.30%	41.90%	41.89%	

The Financial impact of the Disallowance of T&D has an impact on the financial viability of the DISCOMs.The table below shows the financial impact of disallownce of T&D loss.

Table 39: Disallowance on account of T&D Loss

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Quantum Disallowed (MU)	730.75	871.21	1768.58		
T&D Approved	34.18%	32.81%	27.11%	27.00%	24.45%
T&D Actual Claimed	39.60%	38.57%	37.50%	37.50%	
Trued Up T&D	34.18%	32.81%	27.11%		
Variation in T&D Trued Up and Actual T&D Claimed	-5.42%	-5.76%	-10.39%		
Expenses Disallowed (Rs. Crore)	91.95	105.29	239.93		

Source: Tariff Orders

CRIS Analysis

Note: The Actual power Purchase cost was not available in the tariff orders therefore Approved power purchase cost has be taken to estimate the impact.

4.3.3 Power Purchase Cost

The DISCOMs purchase power from GRIDCO, the Bulk Supply Licensee for the State of Orissa. GRIDCO levies differential Bulk supply price to each DISCOMs citing difference in consumer mix.

Table 40: Power Purchase Quantum

Power Purchase Quantum (MUs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	13458	14714	17848	18168	19042
Approved	13188	14683	16653	17620	18921
Actual	13483	15125	17022	18824	
Trued Up	13483	15125	17022		

Source: Tariff Orders

The Commission true's up revenue from sales based on the Actual Power Purchase Costs and benchmark Distribution losses as per the Business plan.

Table 41: Power Purchase Cost

Power Purchase Cost (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	1755.38	1876.08	2596.14	1969.2	2,161.19
Approved	1659.54	1774.43	2259.2	2152.23	2,312.11
Power purchase per unit (Rs/kWh)	1.258	1.208	1.357	1.221	1.222

Note: The Actual Power Purchase Cost is not available in the Tariff orders.

The Commission has trued up Power Purchase Cost as per audited actual power purchase cost. Therefore, we have assumed that the Commission true's up power purchase Quantum as per audited actuals. There is no Disallowance of Power purchase cost therefore there is no impact on the financial viability.

4.3.4 Operation and Maintenance Expenses

The Commission has segregated the O&M expenses into employee expenses, repairs and maintenance and Administrative expenses while approving them. As per the regulations, these costs shall be recognised at actual or as allowed by the Commission, whichever is lower, for the first period of review and shall be taken as base values. The Commission may endeavour to fix these costs on normative basis.

These approved base values may be indexed to pre-determined indices viz. Consumer Price Index, Wholesale Price Index or a combination of both the indices for the subsequent years. For example, the base value of O&M can be indexed to CPI and WPI.

The Commission has approved employee expenses by escalating base year values of basic pay and dearness allowance for annual salary increments and inflation. For all the years, the Commission has allowed escalation of 3% over the basic pay towards normal annual increment on year to year basis in respect of all DISCOMs. The Commission for all the years approved terminal benefits of WESCO, NESCO and SOUTHCO based upon the rate of contribution given by actuary, the terminal benefits of CESCO were based on cash outflow basis. The approval was subject to final determination by the independent actuary which was to be appointed by the Commission.

For repair and maintenance expenses the Commission considers latest audited accounts as base figures and applies 5.4% on the opening gross block of assets to approve Repair and maintenance accounts.

The Commission while truing up has approved Employee Cost and repair and maintenance cost based on the audited figures but in case of Administrative and General Expenses the Commission true's up the A&G based on the Approved figures.

4.3.4.1.1 Administration and General Expenses

The Commission approved administration costs for the DISCOMs by considering latest tax audited figure of A&G as base and escalated it for a specified rate. The escalation rate of 7% has been considered consistently throughout the DISCOMs for all the years.

The DISCOMs have incurred expenditure more than what was being approved in the ARR. The Commission observed that A&G expenses are a controllable cost and the DISCOMs would not be allowed more than the approvals in the truing up exercise.

The Table below shows the A&G cost proposed, approved and actual.

Table 42: Administrative & General Expenses

Administrative & General Expense (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	55.63	81.65	78.73	114.41	152.41
Approved	41.11	51.06	56.42	74.6	82.17
Actual	70.19	84.63			
Trued Up	41.11	50.25			
Disallowance	-29.08	-33.57			

Source: Tariff Orders

The table below shows the Operation and maintenance Cost Proposed, Approved Audited and Disallowance.

Table 43: Operation and Maintenance Cost

Operation and Maintenance Expenses (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	499.77	614.43	682.01	870.53	1258.01
Approved	447.61	482.22	540.94	655.63	744.85
Actual	431.69	581.64	502.13		
Trued-up	402.61	547.26			
Effect on Financial Viability	-29.08	-33.57			

Source: Tariff Orders

4.3.5 Depreciation

The Commission follows the straight line method of approval of depreciation. The Commission approves depreciation on the at Pre-92 rate on the up-valued asset base plus asset addition after 01.04.1996. The Commission true's up Depreciation as per audited actual therefore there is no disallowance and impact thereon.

4.3.6 Return

The Commission has considered Return on Equity (RoE) as a part of revenue requirement. The Commission allowed return on equity capital at the rate of 16% to the DISCOMs. This was consistent for all the DISCOMs for all the years. The Commission does not true's up the Return.

4.3.7 Subsidy

In the state of Orissa there is no subsidy payment to DISCOMs since the initiation of reform.

4.3.8 Interest and Finance Charges

At the time of reform and restructuring, distribution assets were transferred from GRIDCO to the DISCOMs. Project related loans taken by GRIDCO for the purpose of creation of distribution assets from PFC, REC were also transferred to the DISCOMs. The Commission at the time of true up approves interest and finance charges as per audited figures therefore there is no impact on the financial viability.

4.3.9 Regulatory Asset

The Commission has been approving amortization of Regulatory asset of the past years. The table below shows the Regulatory asset amortization proposed and approved by the Commission for each of the years.

Table 44: Regulatory Asset Amortization

Regulatory Asset Amortized (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	1401.05	588.67	629.56	362.19	551.24
Approved	No	73.27	116.50	183.00	170.00

Source: Tariff Orders

4.3.10 Tariff Increase

The Commission has not increased the tariff in the state of Orissa from FY 05-06 to FY 09-10.

4.3.11 Tariff reflective of Approved ARR

The Commission in all the tariff orders has left the gap uncovered and has not increased the Tariff. The table below shows the gap approved in each of the Tariff order.

Gap	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
As per Tariff Order (Rs. Crs)	65.87	6.03	-0.6	29.35	37.03

Source: Tariff Orders

4.3.12 Issuance of true up Order & its impact on working capital

The Table below shows the timeliness of the Tariff order and true up order.

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Issuance of Tariff Order	22-Mar-05	23-Mar-06	23-Mar-07	20-Mar-08	20-Mar-09
Finalization of Annual Accounts for the Year (A)	30-Sep-06	30-Sep-07	30-Sep-08	30-Sep-09	
Issuance of True up Order (B)	23-Mar-07	20-Mar-09	20-Mar-09	20-Mar-10	
Time Lag between Finalization of Accounts and true up order (A-B) in days	174	537	171	171	

Note: There is always a delay of 1 year in true up of CESU as compared to other DISCOMs

The Commission has not approved for any carrying cost on gap determined for the year. It is not a healthy practice to follow because on one end the Commission leaves the gap untreated and on the other end it does not even provide for the carrying cost on the trued-up gap. The Table below shows the carrying cost of all the DISCOMs put together as on 31.3.2010.

Table 45: Impact on the Total Revenue Gap of DISCOMs due to disallowance of Carrying Cost

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Gap as per True Up order/ un Audited-Annual Accounts (Rs. Crs)	86.03	153.4	328.62	314.26*	
Carrying cost required (Rs. Crs)	37.85	50.62	72.30	34.57	
Total Carrying cost (Rs. Crs)					195.34

CRIS Analysis

**The gap of FY 08-09 does not include Gap for CESU as audited accounts were not available.*

The carrying cost summarised in the Table 45 has been calculated by CRIS by applying interest rate of 11% on the accumulated gap each year upto Mar 31, 2010.

5 MAHARASHTRA

5.1 Introduction

Maharashtra Electricity Regulatory Commission (MERC) was set up in August 1999 under the Regulatory Commissions Act, 1998. The erstwhile Maharashtra State Electricity Board (MSEB) was unbundled in June 2005, into the 4 companies as a result of the provisional transfer scheme notified under the Electricity Act 2003 on 6th June 2005:

1. MSEB Holding Company Ltd.
2. Maharashtra State Power Generation Company Ltd.,
3. Maharashtra State Electricity Transmission Company Ltd. (MSETCL) and
4. Maharashtra State Electricity Distribution Company Ltd.

The state of Maharashtra presently has four Distribution companies namely, Maharashtra State Electricity Distribution Company Limited (MSEDCL), Tata Power Company Limited Distribution Business (TPC-D), Reliance Energy Ltd. Distribution Business' (REL-D) and Brihan-Mumbai Electric Supply & Transport Undertaking (BEST). MSEDCL is in the business of distribution and supply of electricity in the State, except the Mumbai license area. This report analyses MSEDCL's performance over the FY 05-06 to FY 09-10.

5.2 Approach followed for approving various components

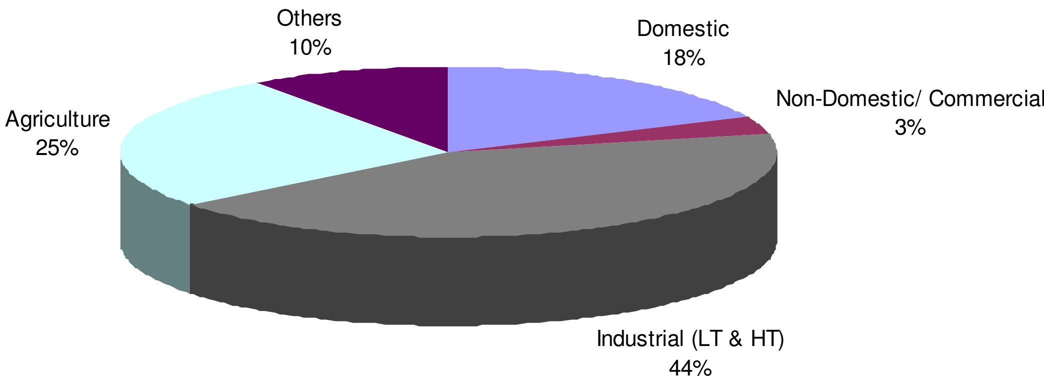
In this section we bring forth the approach adopted by the Commission for approving various components which have bearing on the financial viability of the distribution utility.

Note: Proposed refers to figures proposed by the utilities, Approved refers to figures approved by Commission in the Tariff/ APR Order, Actual refers to actual figures as per audited accounts of MSEDCL, and Trued up refers to figures as per True Up Orders issued by the Commission.

5.2.1 Sales

The sales mix of MSEDCL is favourable considering the maximum sales being contributed by industrial consumers i.e. 44% followed by agriculture consumption (25%) and domestic (18%). Graph below provides the percentage share of energy consumption of different consumer categories in FY 08-09.

Share of Consumer categories in Approved Sales for FY09

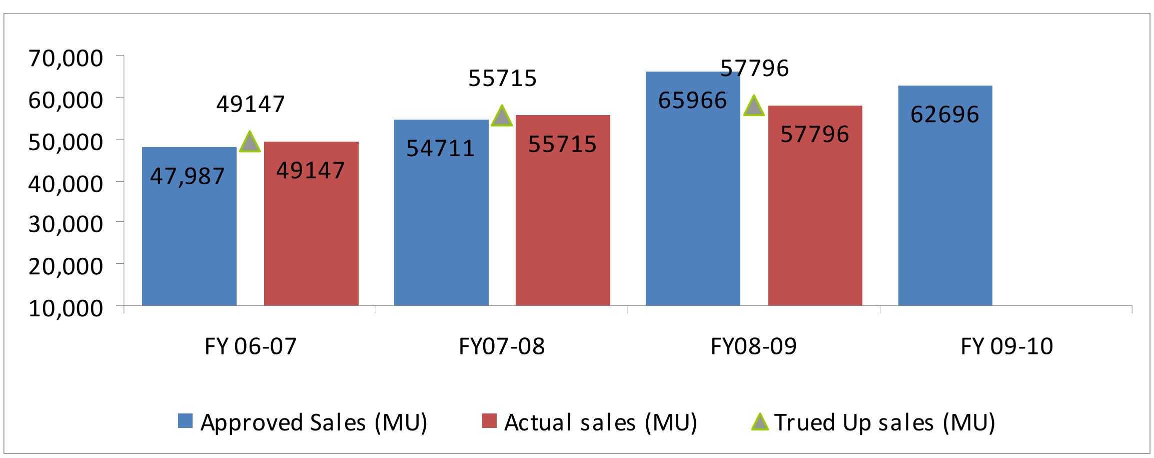


The Commission has determined sales based on the past trends of sales and prevailing demand-supply gap. For the metered categories the Commission has considered either 3 - 5 year CAGR for estimating energy sales. The Commission has also taken into account addition of new consumers and supply constraints for estimation of sales.

In FY 06-07 Order, the Commission had undertaken a detailed study, based on data submitted by MSEDCL, to arrive at the consumption norm for un-metered agricultural consumers. The Commission approved sales for un-metered agricultural category based on the recorded consumption of metered consumers. The Commission filtered the abnormal records, viz., zero connected load, average billing, negative consumption, high connected load, etc., for all the zones. After filtering out the abnormal cases, the billing details of consumers were used to arrive at the zone-wise consumption norm in hrs/hp/annum. Subsequently, the Commission applied the respective zone-wise consumption norm for projecting zone-wise unmetered agricultural consumption.

The graph below shows the total sales approved by the Commission and trued-up sales from FY 06-07 to FY 09-10.

Figure 6: Total Approved and Actual Sales



Sales (MUs)	FY 06-07	FY07-08	FY08-09	FY 09-10
Approved	47987	54711	63776	62696
Actual	49147	55715	57796	NA
Trued Up	49147	55715	57796	NA
Variation (Trued-up – Actual)	*0*	*0*	*0*	*NA*

Source: Tariff Orders & Trued-up Orders for respective years

The Commission has approved the actual sales claimed by MSEDCL in the true-up orders. Therefore, there are no disallowances in actual sales. The large variation in approved and actual sales in FY 08-09 is primarily on account of additional sales estimated by MSEDCL on account of the projected additional energy availability in FY 08-09.

5.2.2 Distribution Loss

The Commission has approved the distribution loss for MSEDCL by considering sales to unmetered agricultural consumer on the revised agricultural consumption norm of 1318 hrs/hp/annum, sales to agriculture metered category and sales to non-agricultural consumers. The Commission had approved a loss reduction target of 2% for FY 06-07.

For MYT Control period, the Commission approved the base-line distribution loss for MSEDCL based on the actual distribution loss for FY 06-07. The Commission had assessed the distribution losses for FY 06-07 based on the energy audit data from Apr 06 to Jan 07. Subsequently, based on the performance of MSEDCL and analysis of circle-wise distribution losses, the Commission approved a loss reduction target of 4% each year during the MYT Control period. Further, the Commission directed MSEDCL to target divisions with higher losses and attempt to reduce the losses on priority basis in such divisions.

The table below summarizes the proposed, approved, actual and trued-up distribution loss for MSEDCL:

Table 46: Distribution Loss Targets Proposed, Approved, Actual and Trued-up

Loss Target (%)	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	27.00%	30.97%	28.97%	26.97%
Approved	34.97%	26.20%	22.20%	18.20%
Actual	30.50%	24.09%	21.98%	NA
Trued-up	30.20%	24.15%	22.24%	NA
Variation (Trued-up – Actual)	*-0.30%*	*0.06%*	*-0.28%*	*NA*

**provisional distribution loss level as per APR Order for FY 08-09*

In the true-up/ APR Order the Commission has considered the actual intra-state transmission losses to approve the trued-up distribution loss for MSEDCL. Also, any variation in power purchase quantum, information on energy receipt at the periphery from SLDC, etc. has been adjusted to arrive at the trued-up distribution losses. As seen from the above Table, MSEDCL has been able to achieve the loss reduction targets set by the Commission, and has even earned incentive in FY 08, due to achievement of distribution losses lower than the target loss level.

5.2.3 Power Purchase Cost

MSEDCL has three primary sources of firm power i.e. Maharashtra State Power Generation Company Limited (MSPGCL), Central Generating Stations (CGS) and Ratnagiri Gas and Power Private Limited (RGPPL). In addition, MSEDCL purchases power from trading companies, energy exchange, renewable energy sources and surplus power from captive plants.

The Commission also introduced the concept of costly power and non-costly power in FY07 and FY08, such that the average hours of load shedding were determined by allocating only non-costly power to all categories. The costly power (costing above Rs. 4 per kWh) was then allocated to consumer categories and regions, and an Additional Supply Charge (ASC) was collected from the consumers in proportion to the relief from load shedding made possible due to the costly power purchase. The Commission considered power costing Rs. 4 per kWh and above as costly power, for determination of the ASC payable by the consumers benefiting from reduction in load shedding. However, the Commission abandoned its approach of segregating the power purchase quantum as costly and non-costly power in 2nd year of MYT period i.e. FY 08-09, since, MSEDCL was not actually purchasing costly power while at the same time recovering the ASC from the consumers, as a result of which, excess ASC recovered from consumers had to be refunded.

The tables below provide a comparison of the approved, actual and trued-up power purchase quantum, cost and per unit cost of power:

Table 47: Power Purchase Quantum

Power Purchase Quantum (MUs)	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	75,207	85123	90206	84641
Actual	74,310	78,734	79,871	NA
Trued Up	74,310	78,734	79,871	NA
Variation (Trued up – Actual)	*0*	*0*	*0*	*NA*

Table 48: Power Purchase Cost

Power Purchase Cost (Rs. Crore)	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	13,632	16899	21189	19,898.16
Actual	14925	15537	19793	NA
Trued Up	14925	15518	19793	NA
Variation (Trued up – Actual)	*0*	*-19*	*0*	*NA*

Table 49: Per Unit Power Purchase Cost

Power purchase per unit (Rs/kWh)	FY 06-07	FY 07-08	FY 08-09	FY 09-10

Approved	1.81	1.99	2.35	2.35
Actual	2.01	1.97	2.48	NA
Trued Up	2.01	1.97	2.48	NA
Variation (Trued up – Actual)	*0*	*0*	*0*	*NA*

It is observed that the Commission has not disallowed any power purchase cost during the true-up for the period FY 06-07 to FY 08-09. However, any gain/ loss resulting from over achievement/ under achievement of distribution loss is accounted for in the ARR as per the tariff regulations, 2005 which allows for sharing of efficiency gains/ losses between the consumers and the utility.

5.2.4 Operation and Maintenance Expenses

The Commission approves the employee cost, R&M and A&G cost separately for MSEDCL.

Employee Cost

The Commission has been approving the employee cost in each of the tariff orders considering the inflation factor corresponding to increase in Consumer Price Index (CPI) over the actual employee cost incurred in the past period. In FY07, the Commission had considered an increase of 4.61% for MSEDCL over the approved employee expenses for previous year. Similarly, in the MYT Control period, the Commission approved employee cost considering an increase of 5.36%. For computing the inflation rate, the Commission had considered the point to point inflation over CPI numbers for Industrial Workers for a period of 3 years as per Labour Bureau, Government of India. MERC Tariff Regulations, 2005 provide for recovery of all reasonable and justifiable O&M expenses relating to the Distribution Business and Retail Supply Business.

The table below shows the approved, actual and trued up gross Employee cost.

Table 50: Employee Expenses

Employee Expense (Rs. Crore)	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	1445	1727	2276	2512
Actual	1925	1782	2486	
Trued-up	1593	1782	2486	
Variation (True up – Actual)	*-332*	*0*	*0*	

** Approved numbers are as per APR Orders for the respective years*

The Commission has been approving the net employee cost each year at the time of true-up in line with the Tariff Regulations. Any variation in expense on account of 6th pay commission impact, addition of new employee, training of employees, VRS schemes, etc has been approved by the Commission in full. For FY 06-07, as regards the one-time impact of Rs. 440 crore claimed by MSEDCL for leave encashment in accordance with Accounting Standard (AS) 15-R, the Commission viewed that since the provisioning was for past years, the impact of any such change in accounting policy of such magnitude cannot be expected to be passed through in the same year and therefore approved the same in five equally annual instalment.

Repair and Maintenance Expenses

The Commission had considered average R&M expenditure as a percentage of opening GFA i.e.3.48% for past five years for approving the R&M expense for MSEDCL for FY 06-07. For the MYT Control Period, the Commission had considered an increase of 5.39% p.a. (based on the increase in WPI) over the approved gross R&M expense for FY 06-07 on account of inflation. The Commission further revised its estimates in the APR Order for FY 07-08, FY 08-09 & FY 09-10 considering the actual R&M expense for FY 06-07 and revised estimates of MSEDCL for respective years.

Table 51: Repair and Maintenance Expenses

R&M Expenses(Rs. Crore)	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	341	436	456	482
Actual	416	526	599	NA
Trued-up	416	436	458	NA
Financial Impact	0	(90)	(141)	NA

** Approved numbers are as approved by the Commission in the respective year APR Orders*

The Commission had approved the total R&M expense during FY 06-07 as the higher expense was on account of the replacement of underground cables (which was a cheaper option than shifting of underground cables) due to widening of roads in Maharashtra. However, for FY 07-08 & FY 08-09, the Commission has disallowed higher than approved R&M cost (as per APR Order) considering that the revised approved R&M expense was adequate and there were no extraordinary occurrence resulting in additional R&M expense. However, any gain/ loss due to higher/ lower than approved R&M expense is accounted for in the ARR as per the tariff regulations, 2005 which allows for sharing of efficiency gains/ losses between the consumers and the utility.

Administrative and General Expenses

The Commission had approved a year-on-year (YoY) increase of 4.2% over the A&G expense of FY 05-06. For the MYT control period, the Commission had approved A&G cost for MSEDCL considering an increase of approx 5.38% on account of inflation over the approved level of gross A&G expenses for FY 06-07. The escalation has been computed based on the increase in Wholesale Price Index (WPI) and Consumer Price Index (CPI) for past 3 years. The Commission has considered a weightage of 60:40 for WPI and CPI, based on the expected relationship with the cost drivers. The MERC Tariff Regulations, 2005 do not provide for any methodology for computation of A&G expense.

Table 52: Administrative and General Expenses

A&G Expense (Rs. Crore)	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	108	156	181	213
Actual	148	219	318	NA
Trued-up	148	189	232	NA
Variation (Trued-up – Actual)	*0*	*-30*	*-85*	*NA*

** Approved numbers are as approved by the Commission in the respective year APR Orders*

The Commission had approved the actual A&G expense for FY 06-07 considering the reasons submitted by MSEDCL for increase in A&G expenses and the ATE Judgment in this regard under the truing up exercise. However, for FY 07-08 & FY 08-09, the Commission had disallowed the higher than approved A&G expense considering that the same being controllable in nature, However, the Commission has allowed for certain reasonable expenditure i.e. lease rent payable to the MSEB Holding Company Limited, higher expenses under Fees and Subscription, etc. The disallowance of A&G expense has been shared by the consumers and the utility as per the tariff regulations, 2005 which allows for sharing of efficiency gains/ losses.

5.2.5 Capital Expenditure

For each of the years during FY 06-07 to FY 09-10, the Commission has approved capital expenditure based on the detailed scheme-wise analysis. The schemes with capital expenditure less than Rs. 10 Crore i.e. Non-DPR schemes do not require prior approval and such capital expenditure have been approved along the ARR for the respective year. However, details of capital expenditure exceeding Rs.10 Crore are required to be submitted to the Commission for approval as per Regulation 71 of the MERC (Terms & Condition of Tariff) Regulations 2005. DPR of such schemes is to be submitted separately with details regarding the scheme and cost benefit analysis of the same.

Table 53: Capitalization

Capitalization (Rs. Crore)	FY 06-07	FY 07-08	FY 08-09	FY 09-10#
Approved	1143.00	1215.46	941.71	1297.73
Actual	1023.05	1108.00	1480.51	2900.61
Trued-up	NA	463.16	427.18	461.46
Variation (Trued up - Actual)	NA	(644.84)	(1053.33)	(2439.15)

#Actual and Trued-up capitalization for FY 09-10 are as per revised estimates

The Commission had not considered capitalisation of schemes entailing capital outlay in excess of Rs 10 Crore for which no DPRs have been submitted to the Commission for approval. Further, the Commission had disallowed the capitalization for Non-DPR schemes as MSEDCL had not segregated capitalisation into DPR schemes and Non-DPR schemes for FY 07-08.

5.2.6 Depreciation

The Commission for each of the year i.e. FY05 to FY09 and for all the DISCOMs has been approving depreciation at average depreciation rates on the Opening Gross Fixed Assets. The depreciation rates have been considered as specified under MERC (Terms and Conditions of Tariff) Regulations, 2005. The table below shows the GFA at the beginning of the year, approved and actual depreciation.

Table 54: Depreciation

Particulars (Rs. Crore)	**FY 06-07**	**FY 07-08**	**FY 08-09**	**FY 09-10**
Approved	352	383.53	400.1	436.13
Actual	368.65	408.05	465.85	
Trued Up	365.55	382.26	408.12	
Variation (Trued-up – Actual)	*-3.1*	*-25.79*	*-57.73*	

** Approved, Actual and True-up numbers are from APR Orders for the respective years*

The disallowance in depreciation is primarily on account of disallowance in asset capitalization by the Commission.

5.2.7 Interest and Finance Charges

The Commission has approved interest charges of MSEDCL in two parts:

- Interest on long term loans,
- Interest on Working Capital, consumer security deposit and finance charges on borrowings made by the MSEDCL.

Interest cost on capex loans for MSEDCL during FY 06-07 has been considered based on the loan drawal schedule and outstanding loans. The Commission applied average interest rate as submitted in the petition on the average loan balance in absence of information regarding interest rates for individual loans submitted by MSEDCL. For the MYT period the Commission had considered interest cost of 10.5% p.a. for the new loans to be drawn over the Control Period as the weighted average interest cost of existing loans during FY 06-07 as projected by MSEDCL has been around 10.3%.

The Commission has approved the normative working capital requirement for MSEDCL, in each of the Tariff Orders issued from FY 06-07 to FY 09-10. The Commission has considered Prime Lending Rate (PLR) of State Bank of India at the time of filing tariff petition for approving the interest cost on working capital requirement as per the regulations.

Table 55: Interest Charges

Interest Cost (Rs. Crore)	**FY 06-07**	**FY 07-08**	**FY 08-09**	**FY 09-10**
Approved	256.00	488.77	617.62	537.06
Actual	499.46	443.54	721.89	NA
Trued Up	336.35	432.54	578.97	NA
Disallowance (Trued up – Actual)	*(163.11)*	*(11.00)*	*(142.92)*	*NA*

** Approved, Actual and True-up numbers are from APR Orders issued by the Commission for respective years*

The disallowance in interest cost is primarily on account of short-term loans taken by MSEDCL. The interest cost on the short-term loans has not been considered by the Commission in the True-up Orders, as MERC Tariff Regulations do not permit allowance of any other short-term interest over and above normative working capital interest, which worked out to be negative in case of MSEDCL. Also, the Commission had reduced the actual interest expense to the extent of disallowance in capitalization of assets in the true-up for the respective years.

5.2.8 Return

The Commission had approved Return on Equity (RoE) for each of the years between FY 06-07 to FY 08-09 for all the DISCOMs. The Commission had considered the RoE @ 16% of the equity, in accordance with the Commission's Tariff Regulations,2005 on the opening equity and 50% of the projected levels of assets capitalized (considering a normative debt to equity of 70:30) during each year of the Control Period or as approved by the Commission.

Table 56: Return on Equity

Operation and Maintenance Expenses	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	390.88	554.89	509.94	533.83
Actual	518.08	545.18	550.40	
Trued-up	518.08	499.36	503.51	

** Approved, Actual and True-up numbers are from APR Orders issued by the Commission for respective years*

5.2.9 Subsidy

Subsidy provided to each category of consumer has not been provided in the tariff orders. However, the Commission in the APR Order for FY 07-08 & tariff determination for FY 08-09 has mentioned about the receipt of approximately Rs. 1706 Crore from the State Government of the total subsidy amount of Rs 1829 Crore for FY 07-08.

5.2.10 Regulatory Asset

The Commission has not made any regulatory asset during the period for FY 05-06 to FY 09-10.

5.2.11 Tariff Increase

The Commission has increased Tariff every year from FY 07-08 to FY 09-10. The table below summarises the tariff increase in percentage from FY 07-08 to FY 09-10.

Particulars	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Percent Tariff increase	8.4%	5.6%	6.8%	4.2%

5.2.12 Tariff reflective of Approved ARR

The Commission in all the tariff orders has approved tariff which are reflective of the average cost of supply. Therefore, no revenue gap has been left uncovered for MSEDCL. There has been adequate tariff increase to cover the revenue gap of the respective year. For FY 06-07, the Commission had also approved the levy of additional supply charge for reduction in load shedding hours through supply of costlier power.

5.2.13 Issuance of True up Order

The table below summarises the time lag between finalization of Accounts and True up order.

Particulars	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Issuance of Tariff Order	20-Oct-06	18-May-07	20-June-08*	17-Aug-09*
Finalization of Annual Accounts for the Year (A)	30-Sep-07	30-Sep-08	30-Sep-09	NA
Issuance of True up Order (B)	20-June-08	17-Aug-09	12-Sep-10	NA
Time Lag between Finalization of Accounts and True up order (A-B) in days	264	321	347	NA

**Dates for issuance of APR Order*

Though there is lag time between the finalization of the annual accounts and issuance of the true-up order, the Commission has been reviewing the estimates considering the provisional numbers and any surplus/ gap is accounted for in the subsequent year order i.e. ARR for FY 08-09 was revised considering the provisional accounts in the Tariff Order for FY 09-10. Therefore, the financial impact on account of the delay is minimized.

5.3 Key Findings

The impact of the increase in the financial losses of MSEDCL can be attributed to following factors:

- Disallowance of O&M expense (R&M and A&G) on account of higher than approved expenses incurred by MSEDCL. However, the higher than approved A&G and R&M expense has been shared by the consumers and the utility as per the tariff regulations, 2005 which allows for sharing of efficiency gains/ losses.

- Disallowance of employee cost in FY 06-07 was primarily on provisioning for leave encashment in line with AS-15 of the accounting principles. Since this was a one-time impact due to change in accounting policy, the Commission viewed that the impact should be spread over five years. Therefore, Rs. 88 Crore was approved for the first year as against Rs. 440 Crore claimed by MSEDCL.

- Disallowance of interest charges on long-term and short-term borrowings undertaken by MSEDCL. Interest on long-term borrowings was disallowed in view of lower capitalization approved in the true-up while the interest cost on the short-term loans was not considered in the True-up Orders, as MERC Tariff Regulations do not permit allowance of any other short-term interest over and above normative working capital interest, which worked out to be negative in case of MSEDCL.

- Lower approval for depreciation on account of disallowance in asset capitalization. The assets capitalized by MSEDCL were disallowed in view of non-submission of DPRs and lack of prior approvals on schemes with capital outlay of more than Rs. 10 Crore.

- The Financial impact of disallowances for FY 06-07, FY 07-08 and FY 08-09 are as follows:

Particulars	FY 06-07 (Rs. Crore)	FY 07-08 (Rs. Crore)	FY 08-09 (Rs. Crore)
Disallowances			
O&M Cost	-332.00	-120.00	-226.45
Depreciation	-3.10	-25.79	-57.73
Interest and finance charges	-163.11	-11.00	-142.92
Less:			
Adjusted for sharing of efficiency gain/loss with consumer		65.18	99.22
Net Financial Impact	**-498.21**	**-91.61**	**-327.88**

6 PUNJAB

6.1 Introduction

In the state of Punjab, Punjab State Electricity Regulatory Commission in exercise of powers vested in it under the Electricity Act, 2003 (Act) passes the Annual Tariff Order. Prior to the restructuring, Punjab State Electricity Board was the entity responsible for Generation, Transmission and Distribution. The Government of Punjab vide notification dated 16.4.2010 unbundled PSEB into two companies, viz Punjab State Power Corporation Ltd. (POWERCOM) and Punjab State Transmission Corporation Ltd. (TRANSCO). The erstwhile PSEB as on 31.3.2009 had total generating capacity of 6841 MW from all sources. The main problem of Power utility in Punjab like that of other utilities of India is growing losses which is mainly on account of growing gap between the revenue earned and expenditure incurred. The result is the dwindling Financial Viability of the utility in the Long run.

6.2 Key Findings

The increase in financial losses of PSEB can be attributed to following factors:

- Disallowance of sales due to variation in estimation of Agriculture consumption by PSEB and Commission.

- Disallowance of sales due to Commission approving T&D loss of 19.50% as compared to actual T&D loss of 22.21% claimed by PSEB in its ARR petition for FY 2010-11 (as per the True Up order of FY 2008-09).

- Disallowance of employee cost by Commission on pretext of high employee cost of PSEB. Commission has capped the employee cost till FY 05-06 and for future years allowed increase by WPI only.The Board has taken steps like freezing of recruitments against retirement/death cases since 1999.

- Disallowance of interest and finance charge on the pretext of high interest rates. Also disallowance of short term loans taken by PSEB for employee cost.

- Table below summarises the impact of al these factors in terms of financial numbers. All these factors are discussed in detail in later section.

S.No.	Attribute	Financial loss (FY 08-09) in Rs Crs
1	Disallowance of sales	333.01
2	Disallowance of T&D loss	435.99
3	Disallowance in employee cost	433.85
4	Disallowance of Interest and finance charges	378.6
	Total	1581.45

Source: CRIS analysis

6.3 Approach followed for approving various components

In this section we bring forth the approach adopted by the Commission for approving various components which have bearing on the financial viability of the Board/distribution utility.

Note: Proposed refers to figures proposed by the utilities, Approved refers to figures approved by Commission, Actual refers to actual figures as per audited accounts of DISCOMs, and Trued up refers to figures as per True Up orders by Commission.

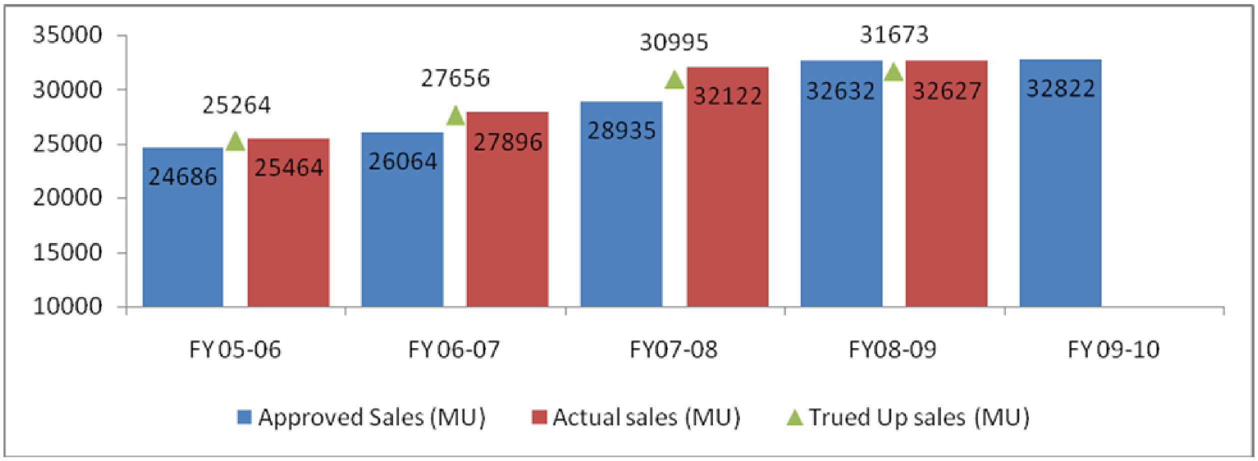
6.3.1 Sales

For the Metered categories the Commission has consistently considered past three years CAGR of actual sales to approve current years sales, the same approach has been followed by the PSEB for projecting the sales.

For Unmetered Agriculture Category the Commission had carried out various studies to accurately access sales, but no study has been completely accepted to arrive at unmetered agricultural sale year on year.

The graph below shows the Total sales approved by the Commission and Trued Up sales from FY 05-06 to FY 09-10.

Figure 7: Total Approved and Trued Up Sales[7] of Punjab



Though there is a variation in sales approved and trued up sales, but no year on year trend as such is visible of underestimation or overestimation of sales. There is variation between the trued up sales and sales as per audited accounts. The Variation has been mainly on account of agriculture sales (for FY 07-08 & FY 08-09) and theft of energy (for FY 05-06 & FY 06-07).

Categories	FY 05-06	FY 06-07	FY07-08	FY08-09	FY 09-10
Proposed Sales (MUs)	25837	25894	29404	33315	35818
Total Approved Energy Sales (MUs)	24686	26063.65	28935	32632	32822
Actual/audited sales (MUs)	25464	27896	32122	32627	
Trued Up sales (MUs)	25264	27656	30995	31673	
Variation between Trued Up sales and Sales as per audited accounts (MUs)	-200	-240	-1127	-954	

Though the increase in sale would lead to increase in revenue but approval of lower sales decreases the power purchase quantum.

6.3.2 Transmission and Distribution Loss

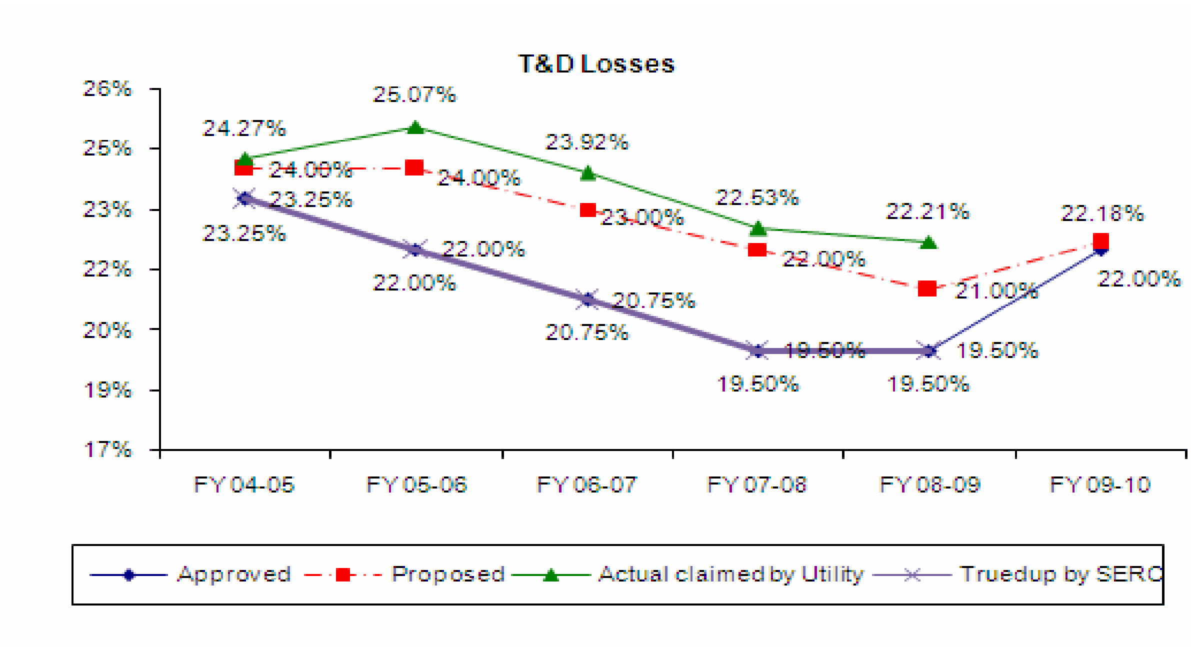
In the state of Punjab ascertaining T&D loss is a complex issue because the state has large un-metered agriculture consumption. There has never been convergence of the targets set by the board and Commission for T&D loss levels. One of the main reasons of deviation for T&D setting is the changing approach and norm for ascertaining the agriculture consumption.

[7] Sales here include inside state sale and sales to Common Pool and outside sale.

The Commission had set a trajectory for the Board to follow for reduction in the loss levels. The Trajectory was set based on the assessment Commission undertook in the FY 2002-03 of FY 2001-02.The Commission therein made its own assessment of the AP consumption and recalibrated T&D losses for the year 2001-02. The Commission determined the norm for agriculture consumption at 1700 kwh/kw/year and on the basis of the connected load given by the Board and thereafter laid down the loss reduction trajectory. The Commission started with 27.52% as loss level for FY 01-02. Taking this as base level, every year the Commission has been determining T&D loss targets to be achieved by the Board.

The Graph below shows the distribution Loss Proposed, Approved, Actual Loss and Trued Up Loss.

Figure 8: Loss levels Approved, Proposed, Actual and Trued Up



During the True Up process the Commission disallows power purchase expenses on account of high T&D loss. The Table below shows the financial implication of disallowance of T&D. The Power Purchase disallowed and the Cost disallowed has been provided in the table below:

Table 57: Expenses disallowed on account of higher T&D loss during the year

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Quantum Disallowed (MU)	1417	1546	2714	1249	
T&D Approved	22.00%	20.75%	19.50%	19.50%	22.00%
T&D Actual Claimed	25.07%	23.92%	22.53%	22.21%	
Trued Up T&D	22.00%	20.75%	19.50%	19.50%	
Variation in T&D Trued Up and Actual T&D Claimed	-3.07%	-3.17%	-3.03%	-2.71%	
Expenses Disallowed (Rs Crore)	**326.2**	**487.33**	**962.61**	**435.99**	

6.3.3 Power Purchase Cost

PSEB purchases power from Bhakra Beas Management Board (BBMB), Central Generating Stations of NTPC, NHPC, NJPC and NPC, Power Trading Corporation and through Bilateral Purchases from other States.

The Power Purchased from Traders and through UI is approved by Commission by taking into account the approved gross purchase of power for the year and the power available from central generating stations and other sources. The rate approved for such power is based on the actual average purchase rate of traded power in the previous year.

However, this was not followed consistently by the Commission over FY 05-06 to FY 09-10.The Commission, for some years accepted the Board's projection of UI rates. The Commission, in its later tariff Orders decided that the cost of power purchased from traders in excess of the approved quantum of will be admissible only at an average rate of realization which was fixed by commission and which was lower than the average rate at which approved UI power was allowed.

Note: Commission has not issued any Regulations on short term and medium term power purchase by the PSEB. Since no new capacity has been added, PSEB is purchasing more and more power in short term market to meet its obligation of supply. Going forward, the Commission may ask PSEB to submit procurement/business plan for short term and medium term power procurement and disallowed cost only in case of non – achievement of plan/targets.

The Financial implication of increase in the Power Cost of PSEB can be attributed to the following factors:

- Reduction of sales to agriculture consumers by Commission at the time of approving and Truing up of the Quantum .This means that the Commission does not approve the sale projected by the PSEB to Agriculture.

- Increase in sales to metered categories of Consumers which leads to purchase of power over and above the level approved.

- T&D loss approved and Trued up by Commission lower than the actual T&D loss of the Board, which then leads to increase in Power Purchase quantum.

Though the Commission True's up the Power Purchase quantum and Cost in the true up exercise but the True up process takes place after a lag of two years. During the lag period the utility has to foot the power purchase bill from its own coffers which has an adverse effect on it financial situation.

Table 58: Power Purchase Cost

Power Purchase Cost (Rs. Crore)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	2259.66	2813.34	3410.01	4186.33	4746.59
Actual	2404.92	4327.01	6020.37	5184.05	
Trued Up	2404.92	4327.01	6020.37	5184.05	

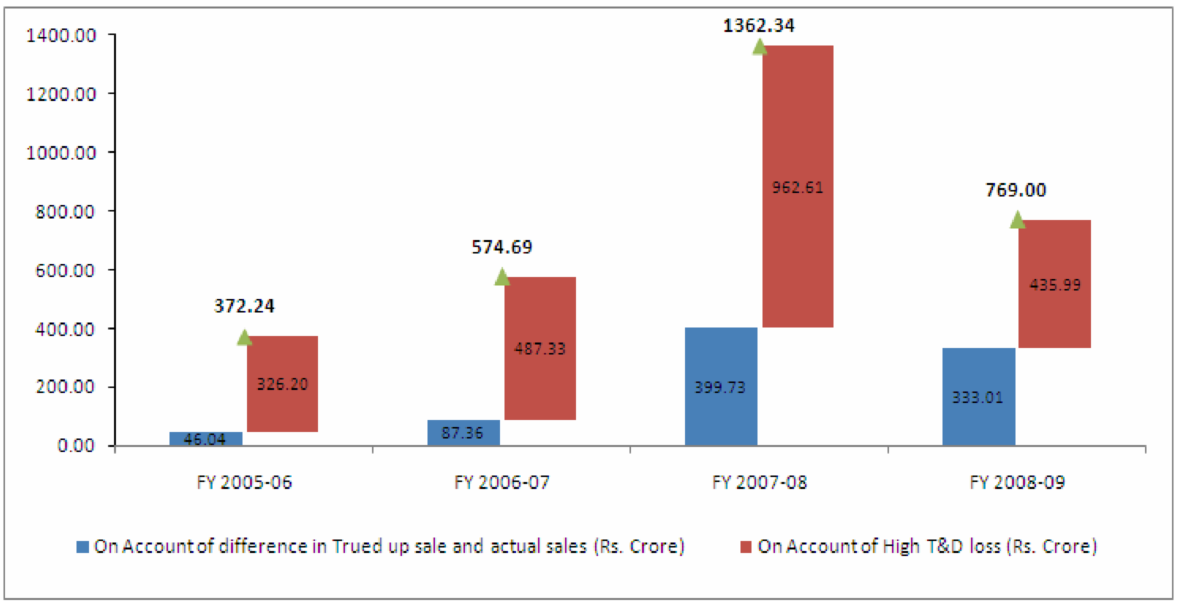
Table 59: Per Unit Power Purchase Cost

Power purchase per unit (Rs/kWh)	FY 05-06	FY 06-07	FY 07-08	FY 08-09
Approved	2.155	2.367	2.651	2.854
Actual	2.302	3.640	3.547	3.491
Trued Up	2.302	3.152	3.547	3.491

The Financial implication of the same can be ascertained

Financial implication on account of	FY 05-06	FY 06-07	FY 07-08	FY 08-09
On Account of difference in Trued up sale and actual sales (Rs. Crs)	-46.04	-87.36	-399.72	-333.01
On Account of High T&D loss (Rs. Crs)	-326.2	-487.33	-962.61	-435.99
Total (Rs. Crs)	**-372.24**	**-574.69**	**-1362.33**	**-769.00**

Figure 9: Financial losses



6.3.4 Operation and Maintenance Expenses

The Commission approves the employee cost, R&M and A&G cost separately for PSEB.

Employee Cost

The Commission has always made an observation that the employee Cost of PSEB has been one of the highest in India. The employee cost has always been a contentious issue between the Board and commission. The Commission has consistently during each year has disallowed more than 10% of the projected employee cost. The Board has taken steps like freezing of recruitments against retirement/death cases since 1999. The Commission has though asked for the steps to taken by Board to reduce employee cost but has not specified any yearly target for that.

The Commission had capped the employee expense and it remained capped till FY 05-06, In the next financial year it allowed a cumulative increase of 15.61%. From FY 06-07 onwards Commission considered annual increase in WPI while increasing the employee expenses. During the True-up, variation was allowed only for the increase in WPI for the year. The table below shows the Proposed, Approved, Actual Trued Up and disallowance of Employee cost. Year on Year the disallowance (i:e difference between Actual and Trued up employee cost) has been seeing an increasing trend. This increasing trend does not augur well for the financial stability of the utility.

Table 60: Employee Cost

Employee Cost (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	1700	1803	1973	2225.01	3454.68
Approved	1473.63	1559.04	1661.41	1773.55	1856.6
Actual	1627	1751	2041.74	2202.04	
Trued Up	1461.78	1558.4	1631.02	1768.19	
Disallowance	**165.22**	**192.6**	**410.72**	**433.85**	

6.3.4.1 Repair and Maintenance Expenses

The Commission has been approving R&M expenses of the current year based on the increase in WPI of the previous year. The Commission has approved R&M expenses without major variations from those projected by the Board. They have largely been in the range of 1.8 to 2% of the gross GFA. The trued up R&M has broadly been in the range of +¬ -20%. The table below shows the Proposed, Approved, Actual Trued Up and disallowance of R&M cost. There is no major disallowance on this account except in the FY 06-07, infact for all the years the approved R&M has been greater than the trued up R&M expense.

Table 61: Repair & Maintenance Cost

Repair & Maintenance Cost (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	265	290	295.66	398.3	406.80
Approved	265	263.35	271.35	323.19	376.14
Actual	238.75	284.49	294.78	338.54	
Trued Up	238.75	259.99	286.91	341.03	
Disallowance	**0**	**24.5**	**7.87**	**-2.49**	

6.3.4.2 Administrative and General Expenses

The Commission has followed the approach of considering the A&G expenses of the previous year as base and has then applied an escalation factor equal to the inflation for the current year to approve the current year's administrative expenses. Later at the time of true up the Commission considers the actual WPI increase. The table below shows the Proposed, Approved, Actual Trued Up and disallowance of A&G cost.

Table 62: Administrative and General Expenses

Administrative & General Expense (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	55	58	87.41	90.34	76.00
Approved	50.31	57.84	62.41	79.29	76.00
Actual	58.01	59.2	69.92	70.96	
Trued Up	54.91	59.81	66	70.96	
Disallowance	**3.1**	**-0.61**	**3.92**	**0**	

The table below summarises the financial implication of Disallowance/over allowance of each of the O&M components.

Table 63: Summary of O&M expenses

Operation and Maintenance Expenses (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	2020	2151	2356.07	2713.65	3937.48
Approved	1788.94	1880.23	1995.17	2176.03	2308.54
Actual	1923.76	2094.69	2406.44	2611.54	
Trued-up	1755.44	1878.2	1983.93	2180.18	
Effect on Financial Viability	-168.32	-216.49	-422.51	-431.36	

6.3.5 Capital Expenditure

The Commission takes cognizance of the actual expenditure for the previous year to approve the current years Capital Expenditure. The Table Below shows the Capital expenditure Proposed, Approved and Actual. The Commission could have been more benevolent in approving Capital expenditure considering that the Commission has not wavered from the stringent T&D trajectory set by it.

Table 64: Capital Expenditure

Capital Expenditure (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	1956	2509	3778.85	2684.26	5016.4
Approved	1200	1500	2500	2000	2000
Actual	1371.85			1924.51	

6.3.6 Depreciation

The Commission approves depreciation function wise, by applying function wise depreciation rates to the assets. The table below provides details about the Depreciation Approved, Actual and Trued up depreciation.

Table 65: Depreciation Approved and Trued Up

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
GFA at the beginning of the year (Rs. Crs)	13901.35	14695	16072.98	18256.81	18338.79
Depreciation Approved (Rs. Crs)	621.77	649	696.82	783.34	826.02
Actual Depreciation (Rs. Crs)	583.86	605	665.15	721.73	
Trued Up Depreciation (Rs. Crs)	583.86	605	664.89	721.5	
Disallowance	**0**	**0**	**0.26**	**0.23**	

6.3.7 Return

Till FY 05-06 the Commission approved Return based on the net fixed assets at the beginning of the year. The net fixed assets were calculated by adjusting gross opening fixed asset for accumulated depreciation and consumer contribution. The Commission allowed return at the rate of 3% on Net fixed assets. From FY 06-07 onwards the Commission approved Return based on Equity. The Commission allowed return @ 14% on equity. The Commission has noted that though PSEB is running in losses but denial of ROE to a loss making utility will further push it into losses rather than retrieving it from that situation. The RoE for all the years has remained at Rs.412.46 Crs, this is mainly because the equity component has not increased and all the capital expenditure is being done out of Loans and consumer contribution.

There has been convergence in return proposed, approved and Trued up.

6.3.8 Subsidy

The government of Punjab subsidizes AP consumers, Scheduled Castes DS consumers and Non-SC BPL DS consumers. As per the terms and conditions of determination of tariff issued by PSERC in 2005, "If the State Government requires the grant of any subsidy to any consumer or class of consumers in the tariff determined by the Commission, the State Government shall, notwithstanding any direction which may be given under Section 108 of the Act, pay, in advance and in such manner as may be specified, the amount to compensate the person affected by the grant of subsidy in the manner the Commission may direct, as a condition for the licensee or any other person concerned to implement the subsidy provided for by the State Government."

The Commission before ascertaining the tariffs in the Tariff Order seeks government stand on the amount of subsidy it will grant based on the agriculture consumption and the free units to SC category. Commission then works out the total revenue from the consumer tariffs considering the subsidy of State Govt. The Government of Punjab provides subsidy to the Board in the following manner:

- Adjustment from interest due from the Board on Government loans
- Adjustment of Electricity Duty
- Cash Subsidy

Though Commission decided that the Government will make payment of subsidy in equal quarterly instalments, in advance, at the beginning of each quarter but the same does not happen and therefore, the PSEB had to resort to short term loans to meet its Revenue Requirements in some of the years.The Commission as approved the interest on delayed payment of subsidy to the Board.

Also, the subsidy is granted on the agriculture consumption approved by the Commission. and Agriculture consumption approved by the Commission is also less than the agriculture consumption estimated by the Board. The table below shows the details about subsidy.

Table 66: Subsidy

Tariff order	**FY 05-06**	**FY 06-07**	**FY 07-08**	**FY 08-09**	**FY 09-10**
Total Subsidy Approved	1115.18	1583.69	2119.1	2479.76	3144.25
Subsidy Pertaining to previous year	68.25	16.13	429.63	121.97	
Total Subsidy Approved	1183.43	1486.82	2548.73	2601.73	
Review Order	**FY 05-06**	**FY 06-07**	**FY 07-08**	**FY 08-09**	**FY 09-10**
Total subsidy approved	1382.24	1,845.81	2542.57	2305.39	
True up order	**FY 05-06**	**FY 06-07**	**FY 07-08**	**FY 08-09**	**FY 09-10**
Subsidy payable by GoP for relevant year	1,394.01	1808.04	2553.99	2420.28	
Subsidy paid	1,435.92	1423.8	2848.04*	2601.73	

*It consists of some amount of previous years which is not segregated

1.1.2. Interest and Finance Charges

The interest cost is the sum of interest on short term, long term and government loans and finance charges. Interest on consumer deposits has also been considered as part of finance charges.

The Commission disapproves the interest amount of Rs 100 Crs for each of the years on account high interest rates charged on the loans when instead the loans could have been swapped for Loans on lower interest rate. From the year 2007-08 onwards the Commission has also made disallowance in interest cost on account of diversion of capital funds for revenue purpose. The Commission approves working capital on normative basis and hence approves interest on it accordingly. The table below shows Proposed, Approved, Actual, Trued up and Disallowance in Interest cost.

Table 67: Interest Charges

Net Interest Cost (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	966.7	1063.3	1334.82	1394.94	1585.61
Approved	811.41	858.69	693.75	869.63	1048.57
Actual	952.63	884.2	1085.39	1194.59	
Trued Up	827.95	439.98	466.95	815.99	
Disallowance	**124.68**	**444.22**	**618.44**	**378.6**	

The disallowance of interest on Working Capital is mainly on account of

- Disallowance in power purchase cost
- Disallowance in Employee cost

The Commission projects low power purchase cost which leads to borrowing of working capital loans to fund the shortfall between actual power purchase cost and approved power purchase cost. Similarly, for employee cost the actual cost incurred by PSEB is higher than the employee cost incurred. Though the Commission approves the less employee cost but the burden for the disallowance falls on the PSEB and actual cash flow happens on that account.

The table below shows details of Interest on Working Capital Proposed, Approved, Actual, trued up and Disallowance.

Table 68: Interest on Working Capital

Interest on Working Capital (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	48.88	86.6	200		556.44
Approved	37.71	48.12	82.98	98.64	179.7
Actual	62.28	145.35	365.78	569.54	
Trued Up	37.6	90.96	112.01	104.95	
Disallowance	24.68	54.39	253.77	464.59	

6.3.9 Regulatory Asset

The Board proposed the creation of regulatory asset in the FY 05-06 and FY 06-07 to the tune of Rs.876 Crs and Rs. 1212.00 Crs respectively. But the Commission gave approval for creation of regulatory asset to the tune of Rs. 8.81 Crs for FY 06-07 only, because of disallowance in ARR. But the same was not addressed in the True up order of FY 06-07 as well as in the subsequent orders.

6.3.10 Tariff Increase

The Commission has increased the Tariff in the state of Punjab for all the years except for FY 06-07. The table below summarises the tariff increase in percentage from FY 05-06 to FY 09-10.

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Percent Tariff increase	10.27%	No change	7.00%	2.60%	12.42%

6.3.11 Tariff reflective of Approved ARR

The Commission in all the tariff orders has come up with Tariff calculated on the approved ARR i:e there was no gap left uncovered on approved ARR. There has been tariff increase to cover the unmet gap of the year.

6.3.12 Issuance of True up Order & its impact on working capital

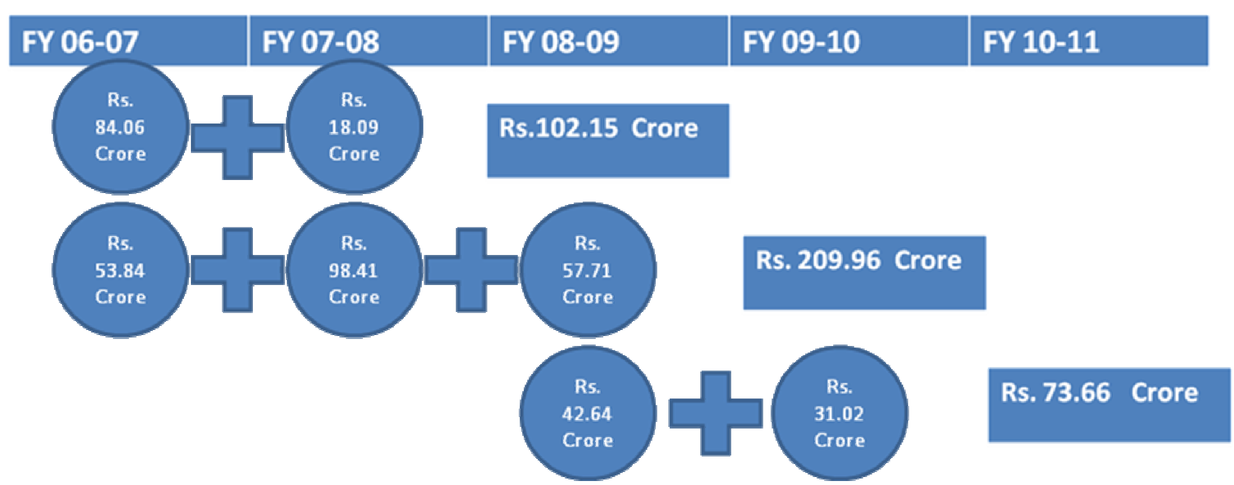
The table below summarises the time lag between finalization of Accounts and True up order.

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Issuance of Tariff Order	14-Jun-05	10-May-06	17-Sep-07	3-Jul-08	8-Sep-09
Finalization of Annual Accounts for the Year (A)	30-Sep-06	30-Sep-07	30-Sep-08	30-Sep-09	
Issuance of True up Order (B)	17-Sep-07	3-Jul-08	8-Sep-09	23-Apr-10	
Time Lag between Finalization of Accounts and True up order (A-B) in days	352	277	343	205	

The Commission follows a three stage approach while doing the true-up of any financial year in all the tariff orders. For example, the Commission first approves the Tariff order for a year say FY 08-09 , then in the subsequent order i.e. FY 09-10 it comes up with the Review order of FY 08-09 which is based on the actual numbers of the first six months of the year and thereafter in FY 10-11 it comes up with the True up order for the FY 08-09 (based on the annual accounts of the year).

The Commission in the Tariff order of FY 08-09 started allowing for carrying cost on the total revenue gap. In the FY 08-09, the Commission carried out the true up of FY 06-07 and review of FY 07-08 and approved the gap of Rs. Rs.439.51 Crs and accordingly the Commission approved carrying cost on the gap of FY 06-07 and FY 07-08. The carrying cost approved in FY 08-09 amounts to Rs.102.15 (84.06 + 18.09) Crs.

In the Tariff order of FY 09-10, the Commission approved total carrying cost of Rs.209.96 (53.84+98.41+57.71) Crs for approved gaps of FY 06-07, 07-08 and FY 08-09. The Commission in the order of FY 10-11 approved total carrying cost of Rs.73.66 (42.64+31.02) Crs for the approved gaps of Rs. 174.06 Crs of 08-09 and Rs.253.26 Crs of 09-10.



The Commission has given due consideration to the time lag between Finalization of Accounts and issuance of True up order and has accordingly approved carrying cost and has therefore not penalised the Board.

7 RAJASTHAN

7.1 Introduction

In the state of Rajasthan, Rajasthan Electricity Regulatory Commission was established under Rajasthan Power Sector Reform Act, 1999 and Electricity Act, 2003 is responsible for the determination of tariffs for generation, transmission, distribution and wheeling of electricity, in wholesale, bulk or retail. Rajasthan is an unbundled state, i.e. the function of distribution, generation and transmission is carried out by separate companies. In the state there is one generation, one transmission are three distribution companies or (Vitran Nigams) formed under the Companies Act, 1956 by Govt. of Rajasthan. The three DISCOMs operating in the state are:

- Ajmer Vidyut Vitran Nigam Ltd. (AVVNL)
- Jaipur Vidyut Vitran Nigam Ltd. (JVVNL)
- Jodhpur Vidyut Vitran Nigam Ltd. (JdVVNL)

The deficit levels of all the three Discoms put together has reached to Rs. 15,540 Crs as determined by the Commission in the MYT Order for FY 2009-2014. The main reason for the accumulating deficit is the non-revision of retail tariffs for the past six years.

7.2 Key Findings

The increase in the financial losses of Rajasthan can be attributed to following factors:

- The State has not witnessed a tariff revision since FY 2004-05. This has lead to widening of gap between average per unit realisation and average per unit cost.
- Increase in short term loans as gap between approved and actual power purchase cost is increasing due to delay in True Up orders.
- Disallowance of interest on short term borrowing for meeting gap in ARR.
- Table below summarises the impact of all these factors in terms of financial numbers for FY 08-09. All these factors are discussed in detail in later section.

Particulars	FY 08-09 (in Crs)
Untreated Gap for FY 08-09	2633.95
Difference in Actual and Approved Power Purchase Cost	3329.87
Difference in Actual and Approved Interest cost	715.04
Total	6678.86
Additional Revenue from Sale of Power (Actual Quantum – Approved Quantum)	128.66
Net Financial impact	**6550.19**

7.3 Approach followed for approving various components

In this section we bring forth the approach adopted by the Commission for approving various components which have bearing on the financial viability of the distribution utility.

Note: Proposed refers to figures proposed by the utilities, Approved refers to figures approved by Commission, Actual refers to actual figures as per audited accounts of DISCOMs, and Trued up refers to figures as per True Up orders by Commission.

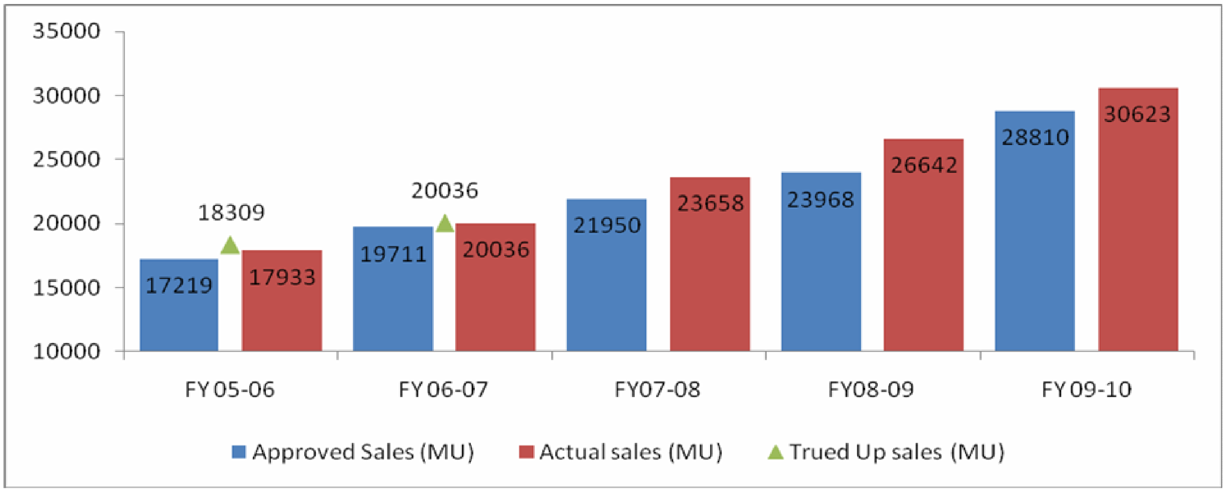
7.3.1 Sales

For the metered categories the Commission has considered either 3 year CAGR or 5 year CAGR for estimating energy sales. The Commission has also taken into account the previous year growth rate to project current year sales.

For unmetered agriculture category the norm for agriculture consumption has been revised by the Commission. The current norm as per the last MYT Order is 1945 units/kw/year. No credible study has been carried out to arrive at the norm for unmetered agriculture consumption.

The graph below shows the total sales approved by the Commission and trued-up sales from FY 05-06 to FY 09-10.

Figure 10: Total Approved and Actual Sales



There has been underestimation of sales both by Commission and utility. The underestimation of sales is observed under all major categories of consumers. It is observed that the variation in actual and estimated sales has increased in the latter years i.e. FY 07-08 to FY 09-10. This can be witnessed from the sales proposed, approved and actual sales of the utilities which are summarized in table below.

Sales (MU)	FY 05-06	FY 06-07	FY07-08	FY08-09	FY 09-10
Proposed	17679	19467	21741	23356	30260
Approved	17219	19711	21950	23968	28810
Actual sales	17933	20036	23658	26642	30623
Trued Up	18309[8]	20036			
Variation between Actual and Approved sales	714	325	1708	2674	1813

The underestimation of sales in the state reduced the total power purchase quantum and, therefore, overestimated the availability of surplus power during the year.

7.3.2 Transmission and Distribution Loss

The determination of loss is a complex act in the state of Rajasthan. The main reason for this is the prevalence of higher percentage of un-metered agriculture consumption. The loss levels are purely incidental to the norm specified for the un-metered agriculture consumers in a specific year. Thus, the Commission finds it difficult to set the loss level which is feasible to achieve as well to protect the interest of the consumer in the state.

Though the Commission approved a long term trajectory for loss reduction, but in all the Tariff Orders, the T&D loss trajectory has been revised based on the actual loss level achieved in the previous year.

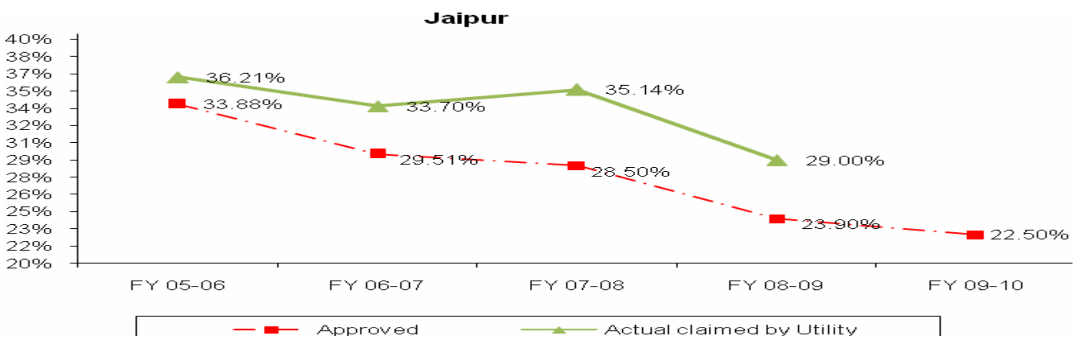
In each year the Commission has approved a higher percentage of loss level as compared to the proposed loss by the utility. Further, the Commission has accepted the actual loss level achieved by the

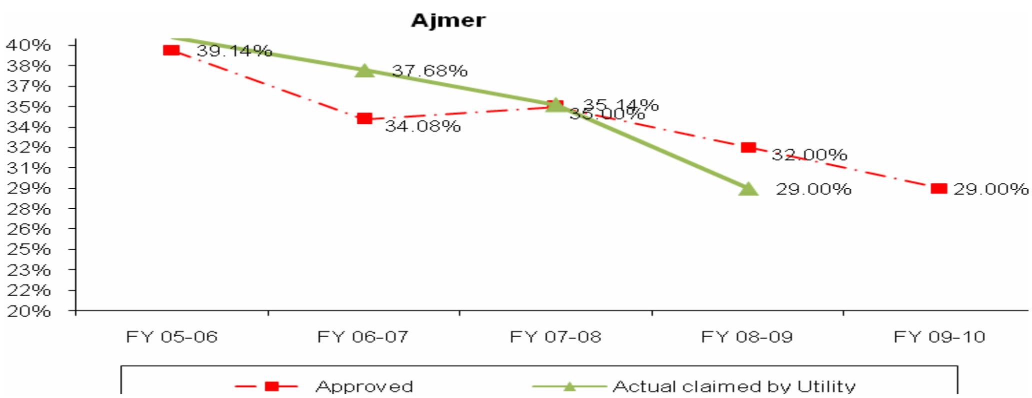
[8] Higher sales have been on account of change in agriculture consumption norm from 1739 units/kW/Year to 1945 units/kW/Year.

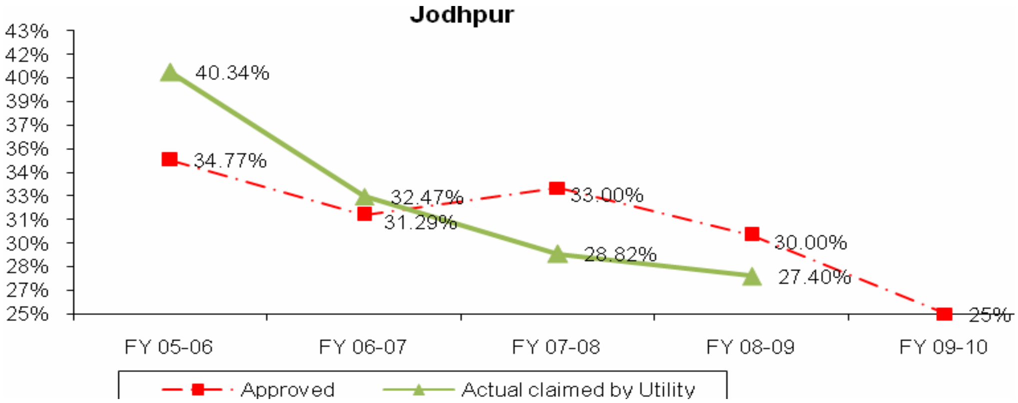
utilities in each of the true-up. Therefore, there has not been any disallowance in power purchase cost on account of higher than approved T&D loss levels.

The Graph below shows the approved and actual distribution loss for all the DISCOM's.

Figure 11: Loss levels Approved, and Actual







7.3.3 Power Purchase Cost

The Utilities in Rajasthan have been facing severe financial crisis mainly on account of rising power purchase cost. The power purchase of each DISCOM accounts for nearly 84% of the ARR. The Power purchase cost has been increasing on account of purchase of additional power almost round the year, from bilateral and UI, which are costlier sources of power. The Tables below provides a comparison of the Power Purchase Quantum, Cost and per unit cost of power.

Table 69: Power Purchase Quantum

Power Purchase Quantum (MUs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	29409	30831	34524	35939	41020
Actual	31794	32462	36688	38950	
Trued Up	31794	32462			

Table 70: Power Purchase Cost

Power Purchase Cost (Rs. Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	6216.28	6337.80	7723.45	9708.39	11911
Actual	6743.84	7071.79	9742.57	13038.26	
Trued Up	6743.84	7044.05			

Table 71: Per Unit Power Purchase Cost

Power purchase per unit (Rs/kWh)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	2.11	2.06	2.24	2.70	2.90
Actual	2.12	2.18	2.66	3.35	
Trued Up	2.12	2.17			

7.3.4 Operation and Maintenance Expenses

The Commission in the earlier orders had approved the employee cost, repair & maintenance cost and administrative cost separately but the approach was changed to approval of consolidated O&M expenses from FY 06-07 to FY 08-09. Further, the Commission shifted to a normative approach for approving each component of the O&M expense from FY 09-10 onwards i.e. MYT Order for FY 2009-14. The major variation between the approved and actual O&M costs was primarily on account of employee cost which has been detailed below.

Employee Cost

The Commission has followed different methodology for approving employee cost in each of the tariff orders. In one year it has used increase in WPI, while in another employee cost per unit of sale norm (set as per Terms and Conditions for determination of tariff) was utilized to arrive at Employee cost. A considerable increase has been witnessed in the actual employee cost from FY 07-08 onwards. This is primarily on account of provisioning of actuarial liabilities such as gratuity and the pension pertaining to the past years. The accounting of gratuity and pension liabilities has been done by the Discoms in order to comply with A.S.-15 which provides that the liability as per actuarial valuation should be provided for every year in the profit and loss account.

The table below shows the approved, actual and trued up O&M cost.

Table 72: Operation and Maintenance Expenses

Operation and Maintenance Expenses	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	519.95	545.81	596.08	638.2	1007
Actual	511.76	557.76	896.35	1773.31	
Trued-up	511.76	557.76			

7.3.5 Capital Expenditure/Capitalization

The Commission has time and again directed the utilities to submit investment proposals for the approval of investment plan. Due to lack of submission of detailed capital expenditure plan including cost benefit analysis submitted by the utilities, the Commission has not been able to approve adequate capital expenditure required for system strengthening and reduction of loss levels.

For the second control period which began with FY 09-10 onwards the Commission considered 5% increase on the average capitalisation over the last three years. The table below shows the approved and actual capitalization. As compared to the approved capitalization, actual capitalization has been showing an increasing trend. It is important that the capital expenditure planning is done adequately after undertaking system studies which would enable the utilities to reduce the loss levels.

Table 73: Capitalization for DISCOMs in Rajasthan

Capitalization	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Ajmer					
Approved	292	530	469	486	755
Actual	459	538	859		
Jaipur					
Approved	298	709	792	540	912
Actual	634	739	1364		
Jodhpur					
Approved	284	326	612	443	480
Actual	443	415	514		

7.3.6 Depreciation

During the first MYT control period, the Commission had applied an average depreciation rate of 3.6% (as permissible under Regulations). In the true-up orders for FY 05-06 and FY 06-07, the Commission reduced the value of assets to the extent of consumer contribution. It also reduced the long term loans by the amount of consumer contribution taken to meet the capital expenditure. From the second Control period onwards the Commission changed the methodology of charging depreciation where in depreciation began to be provided on assets in existence at the beginning of the year on yearly basis plus provision for depreciation to the assets added in the year at the end of the quarter of its installation considering that it has been put to use immediately before the quarter end. The table below shows the GFA at the beginning of the year, approved and actual depreciation.

Table 74: Depreciation

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
GFA at the beginning of the year (Rs. Crs)	5493	6603	7407	8669	11615
Depreciation Approved (Rs. Crs)	219.76	234.43	279.57	305.15	596.00
Actual Depreciation (Rs. Crs)	307.43	411.04	283.71	385.22	
Trued Up Depreciation (Rs. Crs)	326.16	406.43			
Disallowance	-18.73	4.61			

Note: For FY 2005-06 Trued Up depreciation is higher than actual depreciation as Discoms has not claimed for depreciation for some assets created during the year

7.3.7 Return

The DISCOMs have not been claiming for any return in their ARR petition. Therefore, no return was approved to the DISCOMs in any of the tariff orders. However, for FY 07-08, FY 08-09, and FY 09-10, the Commission had allowed interest on short term borrowing to the extent of the return on equity that could be claimed by each DISCOM. The Commission had approved an interest rate of 11% on short term loans, which was equal to post tax return allowed on the equity capital of the DISCOM (as per Terms and Conditions of Tariff Regulations).

7.3.8 Subsidy

In the state of Rajasthan the agricultural sales account for approximately 33% of the total sales which comprise of metered as well as unmetered consumers. The agriculture tariffs in the state of Rajasthan are lower than the average cost of supply and are further subsidized by the Government. Apart from the agricultural (metered and unmetered) category, the Government also provides subsidy to specific domestic consumers. Therefore, the Government subsidy has an important role to play.

The Government subsidy in FY 05-06 was Rs. 908 Cr which increased to Rs. 1375 Cr. in FY 09-10 for all the three DISCOMs. However, the same is insufficient to meet the revenue deficit due to the reason that the retail tariffs in the state are lower than the average cost of supply and the cross-subsidy generated is negligible. Further, the Government is not paying the subsidy in advance to the DISCOms as well as the there is a short-fall in the total subsidy payment due for the year. The details of the subsidy due and subsidy received each year is not provided in the tariff/ true-up orders, which has a huge impact on the present total revenue gap of the DISCOMs. **Therefore, the financial impact of the late receipt or shortfall in receipt of subsidy cannot be determined for the utilities**.

7.3.9 Interest and Finance Charges

Interest charges of the DISCOMs mainly comprise of interest on long term loans, interest and finance charges on short-term borrowings made by the Nigam and interest on working capital. The DISCOM does not segregate working capital loans from short term loans and hence proposes for combined approval of both. The Commission on the other hand disallows interest on short term borrowings and approve interest on working capital on normative basis. Short term loans undertaken by the DISCOMs to meet the revenue deficit have been increasing year on year due to increase in various cost parameters and no corresponding tariff increase. However, the Commission has approved interest on short term borrowing to the extent of the return on equity that could be claimed by each Discom; the same is inadequate to cover the interest burden on account of loans taken for meeting the accumulated revenue gap. The table below shows the interest and finance charges proposed, approved and actual.

Table 75: Interest Charges

Net Interest Cost	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	572.05	425.96	703.92	836.73	740.00
Actual	560.5	710.18	948.38	1551.77	
Trued Up	247.71	357.36			
Disallowance	**312.79**	**352.82**			

7.3.10 Deficit /Gap

After FY 04-05, there has been no revision of retail tariff in the State of Rajasthan. The Discoms have not filed any tariff petition towards meeting the revenue gap and therefore the Commission has left the revenue deficit untreated in each of the tariff orders. As per the tariff order for second MYT control period, the uncovered revenue deficit of DISCOMs stood at Rs. 15,540 Cr. as on 31.3.09. Deficit of FY 09-10 would further increase the accumulated deficit to Rs.17, 014 Crs. Though, the Government of Rajasthan has owned the deficit upto FY 08-09 of the three DISCOMs and promised to liquidate the same over a period of 23 years, the recovery of the interest burden arising out of the revenue gap would not be paid. This would have adverse financial impact on the DISCOMs unless the same is approved by the Commission and is recovered in the tariff.

7.3.11 Regulatory Asset

The Commission has not made any regulatory asset during the period for FY 05-06 to FY 09-10.

7.3.12 Tariff Increase

The Commission has not increased Tariff in the state of Rajasthan from FY 05-06 to FY 09-10.

7.3.13 Tariff reflective of Approved ARR

The Commission in all the tariff orders has left the gap uncovered i:e there exists a gap between the Revenue realised and approved ARR by the Commission. The table below shows the untreated Gap of Rajasthan DISCOMs and gap as a percentage of ARR.

Table 7: Untreated Gap as a percentage of approved ARR by the Commission

Revenue Gap/(Surplus)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Total Gap (Rs. Cr)	1201	638	1329	2633.95	3859
ARR (Rs. Cr)	7347	7332	9189	11397	13933
Gap as a percentage of ARR	16.3%	8.7%	14.5%	23.11%	27.7%

7.3.14 Issuance of True up Order

The table below summarises the time lag between finalization of Accounts and True up order.

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Issuance of Tariff Order	22-Sep-05	21-Jul-06	31-Mar-07	31-Mar-07	21-Dec-09
Finalization of Annual Accounts for the Year (A)	30-Sep-06	30-Sep-07	30-Sep-08	30-Sep-09	
Issuance of True up Order (B)	11-Sep-08	11-Sep-08	21-Dec-09*		
Time Lag between Finalization of Accounts and True up order (A-B) in days	712	347	447		

**The True up of FY 07-08 was carried for Jaipur and Jodhpur only.*

The Commission has not approved for any carrying cost on gap determined for the year. It is not a healthy practice to follow because on one end the Commission leaves the gap untreated and on the other end it does not even provide for the carrying cost on the trued-up gap. The Table below shows the carrying cost of all the DISCOMs put together as on 31.3.2009.

Table 8: Impact on the Total Revenue Gap of DISCOMs due to disallowance of Carrying Cost

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Gap as per True Up order/ un Audited-Annual Accounts (Rs. Crs)	1945.89	2281.76	3046.91*	7580.46**	3859***
Carrying cost required (Rs. Crs)	1070.00	941.00	838.00	1042.00	424.00
Total Carrying cost (Rs. Crs)					**4316.00**

**Gap of FY 07-08 for Ajmer has been computed by CRIS based on audited Annual Accounts, for other two DISCOMs it is based on True up order.*

*** Gap of FY 08-09 for all the DISCOMs has been calculated based on the unaudited Annual accounts.*

**** Computed by Commission in the Tariff Order*

The carrying cost summarised in the Table 8 has been calculated by CRIS by applying interest rate of 11% on the accumulated gap each year upto Mar 31, 2010.

8 TAMIL NADU

8.1 Introduction

In the state of Tamil Nadu, Tamil Nadu Electricity Regulatory Commission in exercise of powers vested in it under the Electricity Act, 2003 (Act) passes the Annual Tariff Order. TNEB was formed as a statutory body by the Government of Tamil Nadu (GOTN) on 01-07-1957 under the Electricity (Supply) Act 1948. The Board is primarily responsible for generation, transmission, distribution and supply of electricity in the State of Tamil Nadu.

Tamil Nadu Electricity Regulatory Commission (TNERC) has issued second tariff order in 2010 after the first tariff order in 2003. Inspite of manifold increase in the input costs there was no tariff revision for the past seven years and there has been revenue deficit since 2003-04. Since no Tariff Orders have been issued by TNERC post 2003, there are no true-up orders available.

8.2 Key Findings

The increase in the financial losses of Tamil Nadu can be attributed to following factors:

- Non revision of tariff for the past seven years. The accumulated revenue deficit upto FY 2008-09 was Rs 16774.47 crore (as per unaudited accounts). The estimated revenue gap for FY 2009-10 is not available.

- There is no major capacity addition by TNEB since last 10 years. Major reasons for losses are shortage of power, exponential growth of demand and power purchase from the market at high price. TNEB is buying around 20 million units on day-ahead basis to meet the growing demand at spot market prices.

- Free electricity for the agricultural consumers. Government subsidy required to support agricultural consumption was Rs 5828 crore in FY 2009-10 against which the Government had released only Rs 267 crore.

Particulars (Rs. Cr)	FY 07-08	FY 08-09
Accumulated Losses as per annual accounts	9642.53[9]	16774.47[10]
Addition in Loss during the Year		7131.94

Source: As per the Tariff Order issued by the Commission

[9] As per audited annual accounts of TNEB. Accumulated losses are consolidated losses upto FY 2007-08

[10] As per un-audited annual accounts of TNEB. Accumulated losses are consolidated losses upto FY 2008-09

8.3 Approach followed for approving various components

In this section we bring forth the approach adopted by the Commission for approving various components which have bearing on the financial viability of the Board/distribution utility.

Note: Proposed refers to figures proposed by the Board and Approved refers to figures approved by Commission in the Tariff Order.

8.3.1 Sales

For metered categories, the approved sales for the MYT period FY 2010-11 to FY 2012-13 are based on the CAGR of actual sales in various consumer categories.

For unmetered agriculture category, the Commission had not carried out any sample study to assess the consumption. TNERC calculated the umetered consumption in agriculture sector using CEA formula for the control period FY 2010-11 to FY 2012-13. The total sales approved by the Commission are summarized in table below:

Table 76: Proposed and Approved Sales

Sales (MUs)	FY08 Actual	FY09 Actual	FY10 Estimated	FY11 Projected	FY12 Projected	FY13 Projected
Proposed	52831	53065	56698	60750	65610	70817
Approved	52831	53065	55443	58449	61647	65059
Growth in Proposed		*0.4%*	*6.8%*	*7.1%*	*8.0%*	*7.9%*
Growth in Approved		*0.4%*	*4.5%*	*5.4%*	*5.5%*	*5.5%*

Source: As per the Tariff Order issued by the Commission

The approved sales in the MYT Order is lower than the proposed sales as the Commission has considered historic trend of growth in sales in each consumer category and has adjusted for any significant variations. The Commission has also considered the formula specified by CEA in the 17th Electric Power Survey (EPS) to forecast the electrical consumption of pump sets/tube wells. The formula adopted by CEA for forecasting the electrical consumption of pumpsets/tube wells is mentioned below:

Y = N x S x H

Where,

Y = Electrical consumption in KWh

N = Number of pumpsets at the middle of the year

S = Average capacity of pumpset in KW at the middle of the year

H = Average electricity consumption per year per kilowatt of connected electric load (KWh/KW)

The Commission has considered the average consumption per HP per year (1051 units) based on the sample study report submitted for earlier tariff petition.

8.3.2 Transmission and Distribution Loss

In the state of Tamil Nadu ascertaining T&D loss is a complex issue because the state has large un-metered agriculture consumption. TNEB in the MYT Petition for FY 10-11 to FY 12-13 has proposed T&D loss of 18% in view of the increase in load and expansion of HT/ LT network.

The Commission had set a trajectory for the Board for reduction in the loss levels. TNERC had set target of loss reduction of 0.4% per year for the MYT control period of FY 2010-11 to FY 2012-13 from the 18% T&D loss in FY 2009-10.

Table 77: Proposed and Approved T&D loss

Particulars	FY 09-10 Estimated	FY 10-11 Projected	FY 11-12 Projected	FY 12-13 Projected
T&D loss Proposed	18%	18%	18%	18%
T&D loss Approved	18%	17.6%	17.2%	16.8%

Source: As per the Tariff Order issued by the Commission

TNEB is maintaining T&D loss level at 18% since 2003-04. The Commission has adjusted the FY 09-10 T&D losses after adjusting the sales of the unmetered agricultural consumers as per the norm.

8.3.3 Power Purchase Cost

TNEB purchases power from Central Generating Stations of NTPC and NPC, IPPs and other sources. It also has own generating stations. The proposed and approved power purchase quantum and cost is summarized below:

Table 78: Proposed and Approved Power Purchase Quantum

Power Purchase Quantum (MUs)	FY11	FY12	FY13
Proposed	74085	80012	86362
Approved	70933	74453	78196

Source: As per the Tariff Order issued by the Commission

Table 79: Proposed and Approved Power Purchase Cost

Power Purchase Cost (Rs. Crs)	FY11	FY12	FY13
Proposed*	21251.24	21139.42	23269.65
Approved#	23987.32	23517.70	22150.97

Source: As per the Tariff Order issued by the Commission

** Includes power purchase cost from external sources and fuel cost (variable only) for own generating stations*
 # includes power purchase cost from external sources, transmission charges and cost of generation (fixed and variable) from own generating stations

The approved total power purchase cost is higher than the proposed power purchase cost as the generation cost and transmission cost have been segregated from the total cost elements of TNEB and approved separately. Therefore, for the purpose of computing the total approved power purchase cost, the total cost of generation (fixed and variable) from own generating stations and transmission charges have been added to the power purchase cost from external sources.

Table 80: Proposed and Approved Power Purchase Cost per unit

Power Purchase Cost per unit (Rs. kwh)	FY11	FY12	FY13
Proposed	2.87	2.64	2.69
Approved	3.38	3.16	2.83

Source: As per the Tariff Order issued by the Commission

The approved power purchased cost per unit has declined for FY 11 to FY 13 on account of availability of power from own new generating stations that are likely to be commissioned during the control period. Further, estimated revenue from sale of surplus power has been reduced from total power purchase cost which has led to a reducion in the per unit power purchase cost.

8.3.4 Aggregate Revenue Requirement

The proposed and approved ARR for TNEB is summarized in table below:

Table 81: Proposed and Approved ARR for TNEB

ARR (Rs. Crs)	FY11	FY12	FY13
Proposed	28749.57	29336.61	32127.53
Approved	27946.44	27455.10	26343.63

Source: As per the Tariff Order issued by the Commission

Though, the power purchase cost approved by the Commission is higher than the power purchase cost proposed by the TNEB, the approved ARR is lower than the proposed ARR. This is primarily due to the fact that the fixed charges for TNEB generation and charges for TNEB transmission were not included by TNEB in the proposed power purchase cost. However, the Commission has included the fixed cost of generation and transmission business of TNEB in the approved power purchase cost. Therefore, the Commission approved other expenses (excluding power purchase cost) corresponding to the expenses allocated to the distribution business only.

8.3.5 Revenue Gap at Existing and New Tariff

The Commission has computed the following revenue gap at existing and new retail tariff:

Table 82: Revenue Gap at Existing and New Tariff for TNEB

Particulars (Rs. Crs)	FY11	FY12	FY13
Revenue Gap at existing tariff	9555.86	7842.36	5412.2
Revenue Gap at new tariff	7905.04	6062.24	3489.18

Source: As per the Tariff Order issued by the Commission

It is observed that even after increase in retail tariff approved by the Commission, there are significant losses accruing each year to the Board. The Commission has cited that post the commissioning of ongoing generation projects as per the schedule and restructuring of TNEB is expected to address the revenue gap and accumulated losses.

1.1.3. Regulatory Asset

Since the accumulated revenue deficit upto FY 2008-09 of Rs 16774.47 crore pertains to prior period, the Commission has indicated the treatment of the accumulated losses would be done at the time of unbundling of TNEB. The Commission has approved the creation of regulatory asset for the revenue gap determined for FY 10-11 as a huge gap exists even after the proposed tariff hike. The regulated assets would further increase in the next two years as the trend of revenue gap continues.

Table 83: Regulatory Asset

Particulars	TNEB	TNERC
Regulatory Asset (Rs. Crs) for FY 10-11	7489	7905

Source: As per the Tariff Order issued by the Commission

The Commission has specified that the regulatory asset created would be charged as expenditure while formulating the Annual Revenue Requirement in the future years. Though, Clause 13 (Regulatory Asset) of the Tariff Regulation, 2005 provide for approval of carrying cost on the regulatory asset, the Commission has not approved any carrying cost on the regulatory asset created during FY 10-11.

1.1.4. Tariff Increase

TNEB has not approached Commission for tariff revision since FY 2003. Even in its latest MYT Tariff Petition, TNEB has not sought any tariff hike for majority of categories and asked for creation of huge regulatory assets. Overall, TNERC has hiked the tariff by 9.9% for the FY 2010-11. Since no True Up order is passed by TNERC, carrying cost is not calculated.

9 UTTAR PRADESH

9.1 Introduction

The electricity sector in the state of Uttar Pradesh consists of various stakeholders including state utilities in Generation, Transmission and Distribution as well as a private distribution company i.e. Noida Power Corporation Limited (NPCL). The state distribution companies include Paschimanchal Vidyut Vitran Nigam Ltd. (PVVNL), Purvanchal Vidyut Vitran Nigam Ltd. (PuVVNL), Dakshinanchal Vidyut Vitran Nigam Ltd. (DVVNL), Madhyanchal Vidyut Vitran Nigam Ltd. (MVVNL) and Kanpur Electric Supply Company Limited (KESCO).

Post the unbundling exercise and transfer scheme dated 15th January 2000 & 14th June 2000, the distribution utilities were formed for the purpose of handling the distribution business in the State of Uttar Pradesh. The Uttar Pradesh Electricity Regulatory Commission (UPERC) was also set up by the Government of Uttar Pradesh as per the U.P. Electricity Reform Act 1999.

The following sections would undertake analysis with the information based on various orders of the UPERC.

9.2 Key Findings

The increase in financial losses of UP distribution companies can be attributed to following factors:

- Absence of true-up of past year ARR based on provisional accounts. The DISCOMs have also not claimed / requested for any true-up of the past years.
- Over-estimation of sales resulting in higher approved revenue as compared with the actual.
- Table below summarises the impact of variation in approved and actual expense items. All these factors are discussed in detail in later section.

Table 84: Financial Impact

Disallowance	FY 06-07	FY 07-08	FY 08-09
Difference in Approved and actual ARR	(488)	1,527	(1,345)
Impact due to over-estimation of sales*	(871)	(1,306)	(976)
Total	**(1,359)**	**221**	**(2,321)**

** Impact due to lower sales has been estimated by considering the difference in actual and approved sales and average realization approved by the Commission. The actual distribution losses have been higher than the approved resulting in lower sales as compared with the estimated sales in the Tariff Order by the Commission*

9.3 Approach followed for approving various components

In this section we bring forth the approach adopted by the Commission for approving various components which have bearing on the financial viability of the Board/distribution utility.

Note: Tariff Order for FY 2005-06 was not issued by the Commission due to in-ordinate delay in tariff petition by the DISCOMs. Therefore, actual figures for FY 2005-06 as indicated in the FY 2006-07 Tariff Order has been considered wherever available.

9.3.1 Sales

The Commission while approving energy sales for the DISCOMs have considered a reverse method by approving the total power purchase quantum and T&D loss levels to arrive at the net energy available for sale. The sales for each consumer category has been forecasted based on the CAGR method and adjusted for balance power availability. The following table shows the energy sold figure comparison for the proposed, approved and the actual figures:-

Table 85: Proposed, Approved and Actual Sales[11]

Energy Sales (MUs)	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	34410	35082	38539	39067
Approved Sales (MUs)	33713	38708	39985	39500
Actual Sales# (MUs)	30508	34000	37247	NA
Variation in Sales (Approved - Actual)	3204	4708	2738	NA[12]

Source: Tariff order of UPERC
 # Actual Sales as claimed by the utility in the subsequent tariff orders.

Based on the above table, it is observed that the approved sales have been higher than the actual sales in each of the year. Since the Commission approves energy sales based on power availability, the higher than approved T&D losses contribute to the lower availability of power for sale within the state.

Table 86: Financial Impact due to over-estimation of Sales

Disallowance	FY 06-07	FY 07-08	FY 08-09
Impact due to over-estimation of sales#	(871)	(1,306)	(976)

 # Financial impact due to lower sales has been estimated by considering the difference in actual and approved sales and average realization approved by the Commission

Since there is no true-up exercise undertaken by the Commission for the DISCOMs due to the non-availability of audited accounts, the reasons for deviations has also not been provided in the tariff orders. However, provisional accounts from FY 2006-07 to FY 2008-09 had been submitted by the DISCOMs for processing of the ARR and Tariff Petitions.

[11] Sales figure exclude bulk and extra supply

[12] Since there is no tariff petition or tariff order issued for the recent period, the actual figures has not been published.

9.3.2 Transmission and Distribution Loss

The Commission in the tariff order for FY2001-02 had in consultation with UPPCL, specified a long-term trajectory for T&D loss level and collection efficiency to be achieved by UPPCL. The prescribed targets envisaged that the UPPCL achieved a T&D loss of 23.90% at the end FY 2005-06. The T&D loss targets that were prescribed are summarized in the table below:

Table 87: Long-term T&D Loss Targets for UPPCL

Particulars	FY 01-02	FY 02-03	FY 03-04	FY 04-05	FY 05-06
T&D Loss (%)	36.40%	33.40%	30.40%	27.40%	23.90%
Reduction (%)		3.00%	3.00%	3.00%	3.50%

It was observed that the UPPCL/ distribution utilities were not able to achieve the targets. The T&D loss reported by the UPPCL for FY 2004-05 (in the Tariff Petition for the FY 2006-07) was 34.60% as against the target of 27.40%. Therefore, the Commission approved a loss level of 27.40% for FY 2006-07 (similar to the loss levels specified for FY 2004-05) in view of the under-achievement in the past years.

A comparison of the approved and actual loss level is summarised in the table below:-

Table 88: Distribution Loss Targets & Achievement by DISCOMS

Distribution Loss	FY 05-06 [13]	FY 06-07	FY 07-08#	FY 08-09	FY 09-10
DVVNL					
Approved	NA	29.10%	25.40%	25.35%	24.00%
Actual	35.70%	30.00%	27.50%	25.66%	24.70%
Variation (Approved – Actual)	NA	-0.90%	- 2.10%	- 0.31%	- 0.70%
MVVNL					
Approved	NA	22.40%	18.40%	18.36%	18.00%
Actual	28.60%	28.00%	25.40%	21.57%	20.02%
Variation (Approved – Actual)	NA	- 5.60%	- 7.00%	- 3.21%	- 2.02%
PVVNL					
Approved	NA	29.10%	25.40%	25.41%	24.00%
Actual	36.50%	30.00%	27.30%	25.97%	24.31%
Variation (Approved – Actual)	NA	- 0.90%	- 1.90%	- 0.56%	- 0.31%
PuVVNL					
Approved	NA	26.70%	22.80%	22.79%	22.50%
Actual	33.00%	33.00%	30.00%	26.12%	24.49%
Variation (Approved – Actual)	NA	- 6.30%	- 7.20%	- 3.33%	- 1.99%

Source:Tariff Orders issued by UPERC

#Actual distribution loss for FY 2007-08 is as estimated by the DISCOMs in the petition

[13] Approved figures not included due to non-issuance of order in FY 2005-06

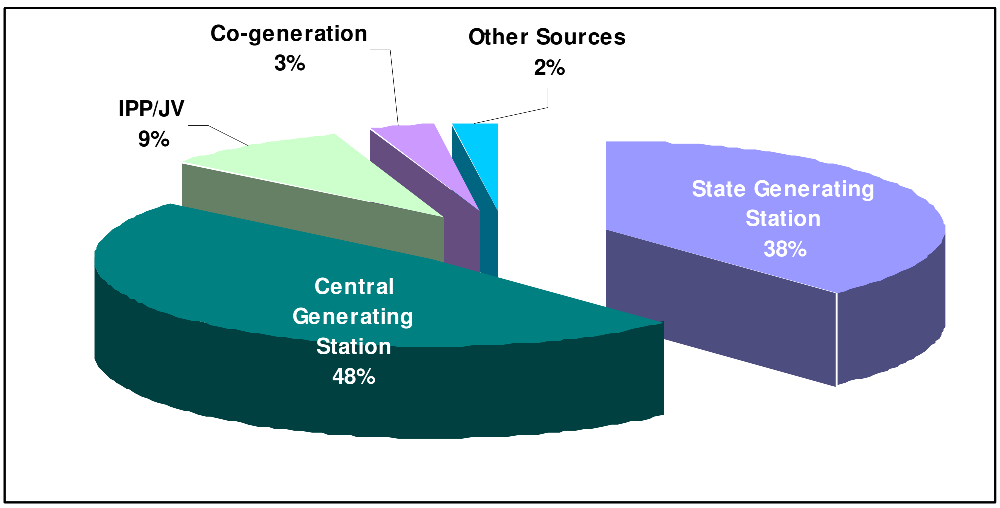
Due to the under-achievement of targeted loss level by the DISCOMs, the actual sales are lower than the approved sales as detalied in the energy sales segment. Therefore, the financial impact of the actual revenue being lower than the approved revenue is borne by the DISCOMs in absence of truing up.

9.3.3 Power Purchase Cost

UPPCL on behalf of the DISCOMs is responsible for the power purchase from various sources. The Commission has repeatedly directed UPPCL to allocate all existing Power Purchase Agreements (PPAs) to the DISCOMs. The major sources of power purchase for UPPCL are CGS (NTPC, NHPC), State Generating Stations (UPRVUNL and UPJVNL) and other plants including Cogeneration plants (obligatory purchase), Independent power producers (IPP), bilateral and banking arrangements with other States. The Commission has approved the power purchase cost for UPPCL by following the merit order principles. The DISCOMs are required to pay to UPPCL for the power purchase cost as per the Bulk Supply Tariff (BST) computed by the Commission.

The constituent sources of power purchase are shown in the pie chart below

Figure 12: Constitution of Power Purchase from various sources for FY 09-10.



As can be observed from the above pie chart, Central Generating Stations contribute to the maximum power availability for the DISCOMs followed by the State Generating Stations. The approved and actual power purchase quantum and cost is summarized in table below:

Table 89: Power Purchase Quantum

Power Purchase (MUs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	NA	50603	56428	58328	56441
Actual	45732	NA	55002	56375	NA
Variation (Approved - Actual)	NA	NA	1426	1953	NA

Table 90: Power Purchase Cost

Power Purchase (Rs Crs)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	NA	10780	12676	13686	14281
Actual	9731	10826	11824	14560	NA
Variation (Approved - Actual)	NA	(46)	852	(874)	NA

Table 91: Power Purchase Cost Per Unit

Power Purchase Per Unit (Rs/KWh)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved	NA	2.13	2.25	2.35	2.53
Actual	2.13	NA	2.15	2.58	NA
Variation (Approved - Actual)	NA	NA	0.10	(0.24)	NA

The actual power purchase cost in FY 06-07 and FY 08-09 has been higher than the approved power purchase cost. However, for FY 07-08, the actual cost has been lower than the approved due to lower quantum of power purchased and per unit lower cost. Since no true-up order has been issued by the Commission, the variation in power purchase cost has remained un-recovered.

9.3.4 Operation and Maintenance Expenses

The Commission approves the employee cost, R&M and A&G cost separately for the distribution companies based on the tariff regulations and past trends. The cost elements for employee expense and Administration & General expense are approved by undertaking the estimations based on the historical trend and further any specific addition in cost item such as the billing expenses etc has been included. The Repair & Maintenance (R&M) expense is approved as a percentage of the opening Gross Fixed Assets (GFA). The detailed comparison of the O&M expenses is shown in the table below, which also shows the variation of the actual expenditure as compared against the approved figures.

Table 92: Operation & Maintenance Costs (in Rs Crores)

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Employee Cost					
Approved	NA	819	689	737	951
Actual	623	762	602	766	NA
Variation (Approved - Actual)	*NA*	*57*	*87*	*(30)*	*NA*
Administration & General					
Approved	NA	92	95	102	110
Actual	109	103	75	103	NA
Variation (Approved - Actual)	*NA*	*(11)*	*20*	*(1)*	*NA*
Repair & Maintenance					
Approved	NA	223	248	265	495
Actual	192	342	340	442	NA
Variation (Approved - Actual)	*NA*	*(119)*	*(91)*	*(177)*	*NA*
Operation & Maintenance					
Approved	NA	1,134	1,033	1,104	1,557

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Actual	924	1,207	1,017	1,311	NA
Variation (Approved - Actual)	***NA***	***(73)***	***16***	***(207)***	***NA***

The actual O&M expense is higher than the approved O&M expense in each of the year excluding FY 07-08. The financial impact of the actual cost being higher than the approved is borne by the utilities in absence of any true-up.

9.3.5 Capital Expenditure

The Commission in the tariff approval process has approved capital expenditure based on the investment plan submitted by the distribution utilities. The scheme wise investment plan is scrutinised by the Commission. Based on the past actual and approved capital expenditure, the Commission has observed that the DISCOMs had undertaken significantly lesser amount of capital expenditure as compared with the approved. In view of the same, the Commission had approved a lower amount towards capital expenditure as against the proposed. The table below summarizes the proposed and approved capital expenditure:

Table 93: Proposed and Approved Capital Expenditure

Capital Expenditure	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Proposed	719	3557	2926	4796	4274
Approved	219	1005	1110	1751	2812
Variation (Approved- Proposed)	*500*	*2552*	*1815*	*3046*	*1462*
%age Departure	70%	72%	62%	64%	34%

9.3.6 Depreciation

In absence of a detailed asset register, the Commission had continued with the methodology adopted in the previous tariff orders and had applied a weighted average depreciation rate of 7.84% for the distribution function. The depreciation rate has been applied on the opening GFA of the respective financial year and on the additional capitalisation of assets on a pro-rata basis during the year. The approved and actual depreciation is summarized in table below.

Table 94: Approved and actual Depreciation

Depreciation (Rs. Crore)	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
GFA at the beginning of the Year	7663	8815	11372	12657	10368
Approved	601	691	942	1062	900
Actual	601	633	646	861	NA
Variation (Approved- Proposed)	*(0)*	*58*	*296*	*201*	*NA*

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1.1.5. Interest and Finance Charges

The interest and finance charges consists of interest on borrowed long-term & short-term loans, interest on working capital, interest on consumer security deposits and financing charges. The approval on long term loans for undertaking capital expenditure has been taken as per the 70:30 debt-equity ratios and for funded capex schemes such as the RGGVY actual funding stipulations are taken.

Interest on working capital has been based on the normative working capital requirement. The DISCOMs have claimed interest charges on account of overdraft (OD) facilities used for long-term loans and working capital. Further, the DISCOMs have claimed for working capital interest and finance charges of UPPCL allocated to the DISCOMs arising due to market borrowing to meet the short-term requirements of funds. However, the Commission has disallowed these interest and finance charges stating that the same cannot be recovered from the consumers as it is an internal mechanism and the DISCOMs are eligible only for interest cost on account of normative working capital.

Further, interest on security deposits of the consumers were estimated at the 6% rate and cost of raising finance (administrative charges) at rate of 1% of the loan drawls was approved by the Commission. The table below shows the details of interest charges approved and actual.

Table 95: Interest Charges (in Rs Crores)

Interest & Finance Charges	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved		354	655	631	531
Actual	258	434	608	1136	NA
Variation (Approved- Actual)		*(80.41)*	*46.78*	*(505)*	*NA*

The actual interest and finance charges in FY 08-09 is higher than the approved expense on account of working capital borrowings for meeting the higher power purchase liability in the year. Since these borrowings were taken by UPPCL and the DISCOMs are eligible only for interest cost on account of normative working capital, the Commission had considered the same as an internal arrangement and had disallowed the interest claimed on the same.

9.3.7 Return

The DISCOMs are entitled to earn 16% return on equity. However, the utilities have not claimed for any return considering the sector is not viable and any return if proposed would put burden the consumers. In view of the same, the Commission has not considered any return while approving the ARR of the DISCOMs.

9.3.8 Subsidy

The DISCOMs have been receiving huge subsidy from the Government of UP (GoUP) to meet their revenue deficit. In FY 2005-06, FY 2006-07 & FY 2007-08, there has not been any increase in the tariffs whereas the distribution companies have been meeting the deficit partly through the subsidy provided by the GoUP. During FY 2008-09 & FY 2009-10, the retail tariffs in the state were increased. However, the balance gap after considering the additional revenue from tariff increase was met by subsidy from the GoUP. Therefore, the GoUP has been providing subsidy grant on a consistent basis to bridge the revenue deficit of the utilities. The details of the subsidy are provided in the table below:-

Table 96: Subsidy

Subsidy (Rs Crs)	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Govt. Subsidy	1012	1822	1532	1832
Additional Govt Subsidy/Loan Support from GoUP	500[14]	0	0	255[15]
Total	**1512**	**1822**	**1532**	**2087**

9.3.9 Tariff Increase

No tariff increases were approved by the Commission during FY 05-06 to FY 07-08. However, the Commission had approved tariff increase for FY 2008-09 & FY 2009-10 to meet the large revenue deficit. The table below summarises the tariff increase in percentage from FY 05-06 to FY 09-10.

Table 97: Average Tariff Increase

Particulars	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Average Tariff increase (%)	No change	No change	No change	13.91%	13.22%

9.3.10 Tariff reflective of Approved ARR

The Commission had provided tariff increase only in the FY 2008-09 & FY 2009-10 and did not approved any increase for FY 2005-06 to FY 2007-08. Since the retail tariffs in the state are not reflective of the average cost of supply, the revenue deficit is met through other sources like additional subsidy from the GoUP, efficiency improvement (reduction in T&D loss and increase in collection efficiency), short term borrowing, etc. The table below summarizes the revenue recoverable from tariffs as percentage of the ARR.

Table 98: Coverage of Revenue Requirement from Tariff

Particulars (Rs Crs)	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Approved ARR	13428	16260	17535	17991
Total Revenue from Tariff	9992	11424	15057	15704
Approved Revenue as % of Approved ARR	74%	70%	86%	87%
Coverage of ARR from other measures[16]	26%	30%	14%	13%

[14] Rs 500 Crores is provided as additional government subsidy

[15] Rs 255 Crores as loan support from State Government

[16] As approved in the Tariff Order of the respective year

The table below summarizes the sources for meeting the revenue deficit each year as approved by the Commission in its Tariff Orders

Table 99: Treatment of Revenue Deficit Treatment

Deficit Treatment (Rs Crs)	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Subsidy				
GoUP Subsidy	1512	1822	1532	1832
Other Measures				
Govt support in form of short-term loan/ Deficit Financing	1151	2307	0	255
Efficiency Improvements/ tariff Rationalization etc	773	0	946	0
Savings in Power Purchase	0	707	0	0
Sub-total - Others	**1924**	**3014**	**946**	**255**
Total	**3436**	**4836**	**2478**	**2087**

For FY 2006-07 and FY 2007-08, the Commission has approved the measures for meeting the revenue gap as claimed by the DISCOMs in their submissions. The DISCOMs had claimed to meet the revenue gap for FY 2006-07 and FY 2007-08 through institutional finances against Government repayment guarantee. Similarly, for FY 09-10, the DISCOMs have proposed to meet the revenue gap of Rs. 255 Crore from additional Govt subsidy or revolving bank guarantee from banks and financial institutions.

For FY 2006-07, the Commission had approved revenue deficit to be funded through short-term loans. However, the Commission had considered these as Government support in the form of short-term loans and had not approved any interest cost on these short-term loans in the future ARR of the DISCOMs. Similarly, the Commission considered the institutional loans availed by the DISCOMs for meeting the revenue deficit during FY 2007-08 as subsidy from GoUP and directed that the debt servicing of such loans should be directly funded by the GoUP through budgetary provisions. Also, for FY 09-10, the Commission had mentioned that the DISCOMs should pursue the GoUP for additional subsidy of Rs. 255 Crore (as proposed in the Petition) as a first measure and in case of non-availability of the same, exercise the option of revolving bank guarantee. However, the Commission had clarified that no cost / charges on account of meeting the gap through revolving bank guarantee shall be allowed as pass through in the ARR. Also, savings on account of efficiency improvement and power purchase are not workable considering the underachievement in T&D loss level each year by the DISCOMs.

9.3.11 Issuance of True up Order

In each of the Tariff Order, the Commission had observed that the distribution companies have not claimed for any true-up as entitled under the provisions of the tariff regulations. Therefore, the Commission in all its tariff order has expressed that the true-up exercise would be undertaken whenever the DISCOMs file a true-up petition along audited annual accounts.

10 WEST BENGAL

10.1 Introduction

In the state of West Bengal, West Bengal Electricity Regulatory Commission in exercise of powers vested in it under the Electricity Act, 2003 (Act) passes the Annual Tariff Order. Prior to the restructuring, West Bengal State Electricity Board was the entity responsible for Generation, Transmission and Distribution. The Government of West Bengal vide notification dated 25.01.2007 unbundled WBSEB into two companies, viz West Bengal State Electricity Transmission Company Ltd. (WBSETCL) and West Bengal State Electricity Distribution Company Ltd. (WBSEDCL).

10.2 Key Findings

The impact of the increase in the financial losses of WBSEDCL can be attributed to following factors:

- For the APR for FY 06-07, FY 07-08 and FY 08-09, the Commission disallowed actual cost over and above the approved cost for all the controllable parameters (as defined in the tariff regulations).
- The Commission has disallowed power purchase cost on account of non-achievement of target T&D loss levels approved by the Commission in the respective year.
- The Financial impact of disallowances for FY 06-07, FY 07-08 and FY 08-09 are as follows:

S.No.	Particular (Rs. Crore)	FY 06-07	FY 07-08	FY 08-09	FY 09-10
1	Disallowance	-378.30	-276.05	-232.29	-342.64*

** APR for FY 09-10 is not available; therefore the disallowance is only on account of FPPCA Order*

10.3 Approach followed for approving various components

In this section we bring forth the approach adopted by the Commission for approving various components which have bearing on the financial viability of the distribution utilities.

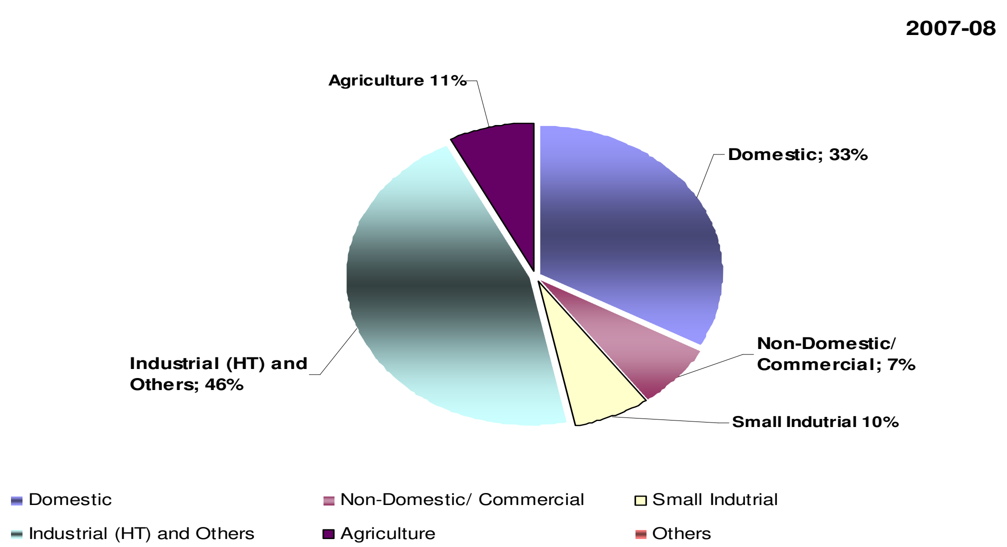
The approved, proposed, actual and trued-up cost for FY 05-06 (wherever available) and FY 06-07 are for WBSEB as a whole.

The proposed and approved figures are as per the Tariff Order or MYT Order. Actual and trued-up fixed components are as per the Annual Performance Review Order of the respective year while the disallowance in power purchase cost is as per the Fuel & Power Purchase Cost Adjustment (FPPCA) orders.

10.3.1 Sales

WBSEDCL has a favourable sales mix. Agriculture consumption in the state is small and contributes to only 10% of the consumption while the industrial (HT) consumption is high and contributes more than 45% of the total energy consumption. Graph below provides the percentage share of energy consumption of different consumer categories in FY 2007-08.

Percent share of consumer categories in approved sales for FY 08



For each of the year, the Commission has approved sales as proposed by WBSEDCL except for FY 06, where the Commission had approved normative sales based on the approved T&D loss of 24%. This normative sale was used by the Commission to approve average cost of supply for FY 06.

The details of approach followed by WBSEDCL for projecting sales have not been provided in the tariff order. The Commission has stated that projected sales for FY 05, FY 07 and FY 08, which were an increase of 6%, 9.66% and 10.63% over previous years' approved sales, were reasonable and hence approved by the Commission.

For FY 09 the Commission has not approved category-wise sales to own consumer in the tariff order.

Table 100: Energy Sales for WBSEDCL

Particulars	FY06*	FY07*	FY08	FY09	FY10
Proposed Sales (MUs)	9951	11217	12896	14980	17025
Approved Sales (MUs)	11844	11217	12896	14980	17025
Actual#	NA	11724	13086	14185	15691
Trued-up#	NA	11724	13086	14185	15691
Variation (Trued up – Actual)		*Nil*	*Nil*	*Nil*	*Nil*

** The sales was approved for West Bengal State Electricity Board*
 # Actual and Trued-up sales are as per FPPCA Order

It can be observed that Commission has disallowed sales in FY 06 only when it considered T&D loss on normative basis. There have not been any large deviations in the approved and actual sales. For FY 08-09 and FY 09-10 (under MYT Control Period) the approved sales were higher than the actual sales. While undertaking annual performance review for FY 06-07, FY 07-08 and FY 08-09 the Commission has approved sales as per the audited accounts, without any disapproval.

10.3.2 Distribution Loss

The Commission had approved T&D loss for WBSEB for FY 05 as per the reduction trajectory set by the Commission in tariff order for FY03. The Commission for approving baseline T&D loss in FY 03 took into consideration T&D loss as proposed by WBSEB for supply to own consumers (excluding bulk supply). The observations of the Hon'ble Supreme Court in the judgment and order dated 10th March 2002 in the case of WBERC vs. CESC, according to which the utility has to share a portion of T&D loss.

For FY 06 and FY 07 the Commission approved a reduction of 1% over the approved T&D loss of previous year irrespective of the actual T&D loss and stated that T&D loss excess to that approved will have to be borne by the licensee. For FY 08 after division of WBSEB into WBSETCL & WBSEDCL the DISCOMs proposed combined loss of 24.7% with transmission loss of 4%, hence the Commission approved Distribution loss of 19.50%.

For FY 09 the Commission approved Distribution loss as per the norms specified in the Tariff Regulations, 2007.

The approved, actual and trued-up losses for WBSEDCL are summarized in table below:

Table 101: Losses for WBSEDCL

T&D Loss	FY06*	FY07*	FY08	FY09	FY10
Approved	24%	23%	19.50%	18.75%	18.25%
Actual#	NA	NA	26.48%	24.91%	26.32%
APR	NA	23%	19.50%	18.75%	18.25%

** Losses for West Bengal State Electricity Board as a whole*
 # CRIS Analysis (Actual losses have been computed based on the power purchased units disallowed in the FPPCA Order)

For the purpose of true-up of the power purchase cost, the Commission has considered T&D losses as approved in the Tariff Order of the respective year. Therefore any underachievement in the T&D loss has been to the account of WBSEDCL. Excess power purchase on account of under-achievement of T&D loss reduction targets has been disapproved. The financial impact of this disapproval of power purchase cost has been discussed in the subsequent section 1.3.3.

10.3.3 Power Purchase Cost

WBSEDCL purchases energy from different sources like Central Generating stations, West Bengal Power Development Corporation Ltd, West Bengal Renewable Energy Development Authority (WBREDA) and other DISCOMs in the state like DPL, DPSC and CESC.

Power purchase requirement of WBSEDCL is mostly met with energy production of WBPDCL, quantum and tariff of which has been approved separately by the Commission. WBSEDCL also has some hydel generating stations the quantum and cost for which are approved in the same tariff order. WBERC allows recovery of increase in the fuel cost through FPPCA and takes into account while passing next year tariff order. The decrease in per unit power purchase cost for FY 09 and FY 10 is due to sourcing of power from new power plants at cheaper rates. WBSEDCL is a major power seller in the short term market contributing around 5% of total transaction.

The table below shows the proposed, approved, actual and true-up power purchase cost for the DISCOMs:

Table 102: Power Purchase Quantum

Power Purchase Quantum (MUs)	FY06	FY07	FY08	FY09	FY10
Proposed	18758	18490	23152	23732	27867
Approved	18758	18286	23704	23732	27867
Actual*	NA	19935	20761	23500	26524
Trued-up*	NA	18107	19619	22422	24972
Disallowance (Trued-Up– Actual)	*NA*	*-1829*	*-1142*	*-1077*	*-1552*

Table 103: Power Purchase Cost

Power Purchase Cost (Rs. Crs)	FY06	FY07	FY08	FY09	FY10
Proposed	3397	3460	4201	5098	5830
Approved	3510	3378	4652	4520	4995
Actual*		3837	4177	4578	5856
Trued-up*		3485	3947	4369	5513
Disallowance (Trued-Up – Actual)		*-352*	*-230*	*-210*	*-343*

Table 104: Power Purchase Cost per Unit

Power Purchase Cost per Unit (Rs./kwh)	FY06	FY07	FY08	FY09	FY10
Proposed	1.81	1.87	1.81	2.15	2.09
Approved	1.87	1.85	1.96	1.90	1.79
Actual*		1.92	2.01	1.95	2.21
Trued-up*		1.92	2.01	1.95	2.21

** Actual and trued-up figures are as per FPPCA Orders.*

Table 105: Financial impact of disapproval of power purchase cost

Power Purchase Cost disapproved	FY07	FY08	FY09	FY10
Disapproved in Power Purchase Cost due to under-achievement of T&D loss (Rs. crore)	-351.98	-229.71	-209.89	-342.64

Source: FPPCA Order

The Commission has disallowed power purchase quantum on account of under achievement of T&D loss targets set in the tariff orders for the respective years therefore corresponding power purchase cost w.r.t. disallowed power purchase quantum has been reduced from the actual power purchase cost as claimed by WBSEDCL.

10.3.4 Operation and Maintenance Expenses

WBERC had approved each of the total O&M under two heads i.e. Employee Cost, O&M cost (comprising of various components like R&M Cost, A&G cost, rents and taxes, audit fee, insurance etc).

10.3.4.1 Employee Cost

For FY 06 the Commission approved employee cost based on actual expenditure of FY 04 and estimated expenditure of FY 05. The Commission took into consideration retirement of 2000 employees, their terminal benefits and normal inflationary impact. For FY 07 and FY 08 the Commission approved employee cost as proposed considering proposed increase in the element of D.A. (including arrears) and terminal benefits to retiring employees in FY 07 and past year employee expense and projected employee expense for WBSEDCL and WBSETCL.

For FY 09 the Commission approved 17.5% increase in employee cost over approved cost for FY 08. In addition, the Commission has also allowed Rs. 1000 lakh and Rs. 1400 lakh for the new entrants in and impact of employees of Purulia Pumped Storage Projects (PPSP) in revenue account respectively.

The table below shows the Proposed, Approved, Actual and Trued-up Employee cost.

Table 106: Employee Cost

Employee Cost (Rs Crs)	FY06	FY07	FY08	FY09	FY10
Proposed	438	498	369	533	592
Approved	425	498	369	458	506
Actual	NA	605	457	2274	NA
Trued-up	NA	605	457	2274	NA
Difference (Trued-Up – Actual)		*0*	*0*	*0*	

The actual employee cost for FY 08-09 is significantly higher than the approved employee cost due to disbursement of 6th pay commission impact. As per the tariff regulations, employee cost has been considered as uncontrollable parameter. Therefore, the Commission has allowed the actual employee cost as per the audited accounts of WBSEDCL subject to prudent check in the APR Orders.

10.3.4.2 Other O&M Cost

Various heads under which the Commission approves the O&M cost (excluding the employee cost) are as follows:

- Repair & Maintenance
- Other Administrative & general costs
- Rent & Rates & Taxes
- Legal & Professional Charges
- Consultancy Fees
- Audit Fees
- Insurance
- Cost of Outsourcing

The above O&M expenses are considered to be controllable as per the tariff regulations. R&M is the major expense under this head. The Commission has been approving R&M expenses @2% of the average Gross Fixed Asset during FY06 to FY08. In FY09, R&M expense was approved at 3% of the average GFA based on the most available audited accounts which was further reduced to 1.6% of the average GFA.

10.3.4.3 Total O&M cost

The table below summarises the financial implication of disallowance of O&M expense of the distribution utilities by the Commission.

Table 107: Summary of O&M expenses (including employee cost)

O&M Expense (Rs Crs)	FY06	FY07	FY08	FY09	FY10
Proposed	627	677	529	753	820
Approved	614	676	529	674	686
Actual	NA	810.3	667.3	2528.5	NA
Trued-up	NA	784	620.9	2506.1	NA

O&M Expense (Rs Crs)	FY06	FY07	FY08	FY09	FY10
Difference (Trued-Up – Actual)		*-26.3*	*-46.3*	*-22.4*	

Since the Commission considers employee cost as an uncontrollable cost, the disallowance in total O&M cost in the APR for FY 06-07, FY 07-08 and FY 08-09 are only on account of R&M and A&G expenses.

10.3.5 Capital Expenditure

Capital expenditure plan for WBSEDCL for FY 05 to FY 09 has not been approved by the Commission. A detailed approach on approval of capital expenditure by the Commission has not been provided in the orders. The Commission, for FY 05, had disapproved capital cost towards an abnormal cost overrun in Teesta Canal project.

Asset Capitalization

For all the years, the Commission has approved the asset capitalization as proposed by WBSEDCL

10.3.6 Depreciation

FY 06, the Commission approved depreciation as proposed by WBSEDCL as the Commission was yet to issue regulations in this regard. The depreciation was calculated by WBSEDCL as per the provisions of Notification issued by the Central Government under the Provisions of Electricity (Supply) Act, 1948. Similarly for first MYT control period (FY 07) the Commission approved depreciation as proposed by WBSEDCL which was estimated as per the Commission's Terms & Conditions of Tariff Regulations, 2005.

For the second MYT control period also the Commission approved depreciation as proposed by WBSEDCL since the same was calculated on the basis of tariff regulations. Due to non-availability of data on Purulia Pumped Storage Project (PPSP) which was transferred to WBSEDCL, the Commission had reduced the proposed depreciation by 5% as per the regulation 2.8.1.4.3 of the Tariff Regulations.

The Commission for none of the years has approved opening and closing gross fixed assets for WBSEDCL.

1.1.6. Interest and Finance Charges

For FY 06, the Commission disallowed interest cost on bonds issued for securitization scheme for power purchase while for State Government loans, the Commission considered interest rate of 8.5% on opening balance and fresh borrowings proposed. For FY 07 – FY 09, the Commission approved interest cost as proposed by WBSEDCL. The Commission, however, disallowed other financing charges relating to fees and expenses for restructuring of loans and interest on capital liabilities. The other finance charges consisting of guarantee commission and bank charges are admitted as per the proposal by WBSEDCL

As per the WBERC (Terms and Conditions of Tariff) Regulations, 2007, interest on working capital is considered as uncontrollable expense. The Commission approved working capital requirement on normative basis @ 18% on estimated annual sales revenue reduced by the amount of depreciation, deferred revenue expenditure and return of the generating company / licensee. Applicable rate of rate of interest on working capital assessed on normative basis is equal to the short-term PLR of SBI or at the actual rate of borrowing whichever is less.

Since WBSEDCL has not drawn any working capital loans during past years, the Commission did not approve any interest cost on working capital and agreed to consider the same during the APR, subject to utilization of borrowings by WBSEDCL in the respective years.

Table 108: Interest on Working Capital Borrowings

Particulars (Rs. Crore)	FY 06-07	FY 07-08	FY 08-09
Approved	40.72	70.60	0.00
Actual	0.00	0.00	0.00
Trued-up	0.00	0.00	0.00

Table 109: Total Interest and Finance Charges

Total Interest and Finance Charges (Rs. Crore)	FY 06-07	FY 07-08	FY 08-09
Approved	320.94	423.16	468.05
Actual	329.97	370.19	466.92
Trued-up	329.97	370.19	466.92
Disallowance	0.00	0.00	0.00

The Commission has considered interest on working capital as uncontrollable expense. In the Tariff Orders for FY 06-07 and FY 07-08, the Commission had approved working capital on normative basis. However, in the APR Orders, the Commission had disallowed interest on working capital as no borrowings were undertaken by WBSEDCL for working capital requirement during each year. In the MYT Order for FY 08-09 to FY 10-11, the Commission did not approve any interest towards working capital requirement considering that the WBSEDCL had not undertaken any working capital borrowings in FY 08-09.

10.3.7 Return

The approach of the Commission for approving return has not been consistent. For FY 06 the Commission approved return as per the Tariff Regulation, 2003. According to the regulation the return is to be allowed at SBI PLR plus 3% i.e. 13.25% on equity capital. For FY 07, the Commission has allowed Return on Equity at 14% on closing equity of FY 05 (equity fund was from the State Government) as the Commission noted that no addition to the equity capital will be considered for WBSEDCL till the time the amount of accumulated loss for the previous years were completely negated by the infusion of funds from WBSEDCL's own or outside sources. For FY 08 and FY 09 the Commission approved return on equity at 14% on average equity for the respective year.

The table below illustrates the return approved by the Commission in each of the Tariff Order and the return as percentage of the total ARR for all the four DISCOMs.

Table 110: Reasonable Rate of Return

Particulars (Rs Crs)	FY06	FY07	FY08	FY09	FY10
Approved	179	189	300	323	364
Actual		203	311	332	
Trued-up		203	311	332	
Disallowance (Trued-up- Actual)		*0*	*0*	*0*	

10.3.8 Subsidy

The Government of West Bengal did not provide any subsidy support to the Discoms during FY 05 through FY 09.

1.1.7. Regulatory Asset

The Commission had determined an amount of Rs. 127.24 Crore as revenue deficit in the APR of WBSEDCL for FY 07-08 which was to be recovered in the subsequent ARR i.e. FY 09-10. However, the Commission had created a regulatory asset for the same amount in order to contain the tariff hike at a reasonable level. In the FY 10-11 Order, the Commission approved the regulatory asset of Rs. 127.24 Crore to be passed to the consumers in the FY 10-11 ARR but created a new regulatory asset of Rs. 1569.33 Crore on account of power cost variation as approved in the FPPCA Order dated 30 June, 2010.

Table 111: Regulatory Asset

Particulars	Amount
Regulatory Asset for FY 09-10 (Rs. Crs)	127.24
Regulatory Asset for FY 10-11 (Rs. Crs)	1569.33

The Commission has not mentioned about any carrying cost on the regulatory asset being created during FY 09-10 & FY 10-11 in its Tariff Order. However, as per the Tariff Regulations approval of reasonable cost of financing the same would be approved by the Commission.

1.1.8. Tariff Increase

The Commission has increased retail tariff in the state of West Bengal annually to recover the increased annual revenue requirement of WBSEDCL.

1.1.9. Issuance of True-up Order

The table below summarises the time lag between finalization of Accounts and True up order.

Particulars	FY 06-07	FY 07-08	FY 08-09
Issuance of Tariff Order	13-Feb-07	01-Aug-07	30-Sep-08
Finalization of Annual Accounts for the Year (A)	30-Sep-07	30-Sep-08	30-Sep-09
Issuance of APR Order (B)	26-Sep-08	26-May-09	26-July-10

Particulars	FY 06-07	FY 07-08	FY 08-09
Time Lag between Finalization of Accounts and True up order (A-B) in days	362	238	299

Source: CRIS Analysis

The Commission follows a two stage approach while doing the true-up of any financial year in all the tariff orders. For example, the Commission first approves the FPPCA Order for a year followed by the Annual Performance Review (APR) Order and the net recoverable/ payable as per the APR Order is charged to the ARR of the subsequent year.

The Commission has not approved any carrying cost on the gap determined as per the APR Order for the previous years. However, it is observed that the Commission approves interest on working capital based on the actual borrowings or normative levels whichever is less. Therefore, due to lack of any borrowings undertaken by WBSEDCL in the past, the Commission has not allowed any interest cost on the delay in recovery of the gap determined in the APR Order.