CRISIL
INFRASTRUCTURE ADVISORY

# Forum of Regulators

## Tariff revision assessment for financial viability of DISCOM and comparison of approaches

### Final Report- Phase 2

November 2010

# CONTENTS

# LIST OF TABLES

# LIST OF EXHIBITS

# 1 SUMMARY

The objective of phase 2 of the assignment was to carry out an estimate on the deviation of tariffs vis-à-vis cost of supply based on the various factors attributable to such deviation. This also includes comparison of methodologies adopted for baseline parameters, approach adopted for approval of costs and target setting, fixation of O&M norms, treatment & creation of regulatory asset and process adopted for subsidy determination and tariffs. Brief summary of the findings are as follows:

1. Barring a few states, tariffs have not been increasing vis-à-vis the increase witnessed in the cost of supply. It is estimated that additional increase to the tune of 1% to 39 % is required to fully recover the cost of supply. This increase in revenue will either come through the increase in tariffs or through direct subvention/subsidy from the State Governments. Table below shows the likely gap in recovering the costs in various states for a particular year.

**Table 1 – Gap in recovering the costs in various states**

| State | % gap in tariff vis-à-vis costs** | Year*** |
|---|---|---|
| Haryana | 10.00% | 2009-10 |
| Madhya Pradesh | 16.44% | 2007-08 |
| Uttar Pradesh | 29.00% | 2008-09 |
| Maharashtra | NIL | 2008-09 |
| Punjab | 3.80% | 2008-09 |
| Orissa | NIL | 2007-08 |
| Rajasthan | 37.00% | 2007-08 |
| West Bengal | NIL | 2009-10 |
| Karnataka | 22.37* | 2008-09 |
| Tamil Nadu | 39.44% | 2010-11 |

**Tariff increase requirement will be 22.37% considering utilities are not receiving the approved subsidy from the Government.*
***Cost estimated based on true up or audited accounts and after excluding certain unreasonable costs on account of deviation from established norms/ targets set by the SERCs. It does not include the accumulated gap over the past periods.*
****Year is considered based on available information on true-up/audited accounts. Gap is only for that particular year without including accumulated gap.*

2. Requirement of increase in tariff is primarily on account of increase in power purchase cost and certain inflationary impact on other input costs.

3. Estimation of distribution loss level remains a concern considering the large quantum of un-metered sales to agriculture consumers in certain states. The estimation for approved loss level is primarily based on the past performance of the utility and the proposed capital expenditure plan with only a few states undertaking load-flow or scientific T&D loss estimation studies for fixing loss reduction targets. Post approval of loss reduction targets, some of the SERCs have revised the targets or have

considered the actual loss level, as claimed by the utility. For instance, SERC of Madhya Pradesh has revisited the base T&D loss level as well as the trajectory during the period of 5 years and it is now following the targets, as notified by the State Government. The SERC of Orissa is following the loss level estimated during the privatization process, which was determined in the absence of baseline data and appropriate T&D loss study.

4. Time lag in tariff change (including true-up exercise) is impacting the finances of the utility leading to higher working capital requirement and accumulation of financial losses that are required to be recovered through tariff increase.

5. A few SERCs such as those of West Bengal, Haryana, and Tamil Nadu have created regulatory asset primarily to contain the tariff increase. Though tariff regulations provide for approval of carrying cost on the regulatory asset, these SERCs have been silent on this issue while approving the ARR.

6. The State Government either provides subsidy, as allocated in the State Budget or as determined by the respective SERC. However, mostly, the subsidy is not received as per the process stipulated in EA, 2003. Whereas states like Punjab and Karnataka followed the methodology stipulated in EA 2003, states like UP, Rajasthan, Haryana and Tamil Nadu have neither aligned the tariff with cost nor computed the subsidy based on consumption of the subsidized categories.

A summary of factors leading to gaps in revenue for certain states is mentioned below:

**Table 2 – Factors creating gaps in revenue in various states**

| State | Reasons for revenue gap |
|---|---|
| Haryana | • Lack of true-up mechanism for various cost parameters of the ARR (except for power purchase cost which is passed through by way of Fuel Surcharge Adjustment)<br>• Disallowance of interest cost on short-term borrowings for meeting the revenue deficit of previous year and carrying cost for time lag involved in recovery of FSA<br>• Disallowance of Return on Equity, as the capital employed by Discoms is estimated to be negative |
| Madhya Pradesh | • SERC disallowed power purchase quantum of Discoms on account of high T&D loss or lower sales to unmetered agriculture category. A part of the disallowed power purchase cost can be considered as unreasonable on the grounds that the SERC has only considered costlier power for disapproval.<br>• SERC had approved a long-term distribution loss trajectory in FY 05-06 and had approved the distribution loss in the Tariff Order for FY 05-06 and FY 06-07 based on the same. On 28th December, 2006, the State Government notified a revised long-term distribution loss reduction trajectory for the period FY 06-07 to FY 10-11. Though the SERC had considered the loss trajectory set by the State Government at the time of true-up for FY 06-07, there was a time lag involved in the approval for the power purchase cost thereby leading to extra costs for the utilities |

| State | Reasons for revenue gap |
|---|---|
| Uttar Pradesh | • There is absence of true-up mechanism in the State and the Discoms themselves have not claimed / requested for any true-up for the past years<br>• Over-estimation of sales resulting in higher approved revenue whereas the sales are lower actually<br>• SERC approved measures like State Government's support in the form of short-term loans, efficiency improvements, savings in power purchase, which never materialized |
| Punjab | • SERC has capped the employee cost taking into account such cost, as incurred by the utility in FY 05-06; and has allowed only inflationary increases on the same |
| Orissa | • The actual loss levels of the DISCOMs are higher than the approved loss levels. SERC has followed the distribution loss trajectory estimated during the privatization process. However, this trajectory lacked proper baseline data for loss estimation. |
| Rajasthan | • Tariff has not been revised since FY 2004-05 leading to widening of gap between average realization per unit and average cost per unit.<br>• Increase in short term loans, as gap between approved and actual power purchase cost is increasing due to delay in True Up orders.<br>• Disallowance of interest on short term borrowing for meeting gap in ARR. |
| West Bengal | • Regulatory Asset has been created by the SERC leading to gap in tariffs |
| Karnataka | • Shortfall and delay in subsidy disbursements by the State Government is leading to financial losses of the DISCOMs. |
| Tamil Nadu | • Tariff has not been revised for the past seven years. The accumulated revenue deficit up to FY 2008-09 was Rs 16774.47 Crore (as per un-audited accounts).<br>• There is no major capacity addition by TNEB since last 10 years. Principal reasons for financial losses are exponential growth of demand and high cost of power purchase from the market.<br>• Free electricity for agriculture consumers. The subsidy required to support agricultural consumption was Rs 5828 Crore in FY 2009-10 against which only Rs 267 Crore has been released by the State Government. |

# 2 TARIFF INCREASE REQUIRED TO MEET THE GAP

The Approved ARR determined by a SERC is an estimate of the various expenses required in the subsequent financial year by the distribution utility based on which the consumer tariff is determined. However, based on actual expenses incurred, a true-up is approved which helps in indicating the appropriateness of the estimate.

The subsequent sections provide a snapshot for each state with a table of comparison of the increase in tariff required post the true-up exercise vis-à-vis an increase in tariff required if certain disallowances were to be approved by the respective SERCs in the true-up/ APR exercise. It also provides supporting approach adopted for the analysis and reasons for gap in tariffs.

## a) Haryana

**Table 3 – Required increase in tariff to meet the gap/disallowance – Haryana**

| S. No. | Revenue Gap/(Surplus) | Computation | FY 06-07 | FY 07-08 | FY 08-09 | FY 09-10# |
|---|---|---|---|---|---|---|
| 1 | Approved ARR (Rs. Crs) | | 6114 | 7317 | 8703 | 8628 |
| 2 | Gap as per Annual Accounts* (Rs. Crs) | | 415 | 781 | 1484 | 532 |
| 3 | Return on Equity @ 14% (Rs. Crs) | | 225 | 279 | 319 | 319** |
| **4** | **Adjusted ARR (including Gap as per annual accounts) (Rs. Crs.)** | (1+2+3) | **6754** | **8377** | **10506** | **9479** |
| 5 | Approved Sales (in MUs) | | 15857 | 17992 | 21038 | 20395 |
| 6 | Avg CoS (Approved ARR/ Approved Sales) (Rs./kWh) | (1/5)*10 | 3.86 | 4.07 | 4.14 | 4.23 |
| 7 | Revised Avg CoS (Adjusted ARR/ Actual Sales) (Rs./kWh) | (4/5)*10 | 4.26 | 4.66 | 4.99 | 4.65 |
| *8* | *Required Increase to meet the entire Gap/ disallowance* | | *10%* | *14%* | *21%* | *10%* |

** For FY 06-07, FY 07-08 & FY 08-09, the gap figure is as per Audited accounts of UHBVN & DHBVN.*
*** For FY09-10, return on equity has been considered at similar level as that in FY08-09 in absence of audited accounts for FY 09-10.*
*#In absence of audited accounts for FY 09-10, the untreated revenue gap for FY 09-10 as approved by the Commission has been considered for computing the average increase in tariff.*

**<u>Snapshot of approach/reasons</u>**

- In absence of the true-up of various expenses, the addition to accumulated losses each year has been considered. The same has been adjusted in the ARR approved by the Commission for the respective years.
- Return on Equity has been considered @ 14% as the same has not been included by the Commission on account of negative Equity Capital (after considering accumulated losses) in case of both the DISCOMs.

- For FY 09-10, the uncovered gap as approved by the Commission has been considered as legitimate expenditure and average tariff increase required to meet the uncovered gap has been computed.
- Adjusted ARR has been computed by considering the approved ARR and actual gap as per the annual accounts for the respective years.

## b) Madhya Pradesh

**Table 4 – Required increase in tariff to meet the gap/disallowance – Madhya Pradesh**

| Particulars | FY 05-06 | FY 06-07 | FY 07-08 |
|---|---|---|---|
| Approved ARR[1] (Rs. Crs) | NA | 7002.62 | 7224.90 |
| Trued Up ARR[2] (Rs. Crs) | 5074.59 | 6229.77 | 7297.21 |
| Adjusted Trued-up ARR[3] (adjusted for unreasonable disallowance) (Rs. Crs) | 5074.59 | 6856.03 | 7530.95 |
| Adjusted ARR considering all disallowances[4] (Rs. Crs) | 5161.90 | 7559.17 | 8825.36 |
| | | | |
| Approved Sales (MUs) | NA | 20088 | 21449 |
| Trued Up Sales (MUs) | 15515 | 17996 | 19201 |
| | | | |
| Average CoS at Approved ARR (Rs./kWh) | NA | 3.49 | 3.37 |
| Average CoS at Trued up ARR (Rs./kWh) | 3.27 | 3.46 | 3.80 |
| Average CoS at Adjusted Trued up ARR (Rs./kWh) | 3.27 | 3.81 | 3.92 |
| Average CoS at Adjusted ARR considering all disallowances-Rs./kWh | 3.33 | 4.20 | 4.60 |
| Required Increase to meet the Trued-up ARR/ untreated gap | NA | -0.70% | 12.83% |
| Required Increase to meet the Adjusted Trued up ARR {adjusted for unreasonable disallowance) | NA | 9.29% | 16.44% |
| Required Increase to meet the entire disallowance | NA | 20.49% | 36.45% |

- *'Approved ARR' is the total ARR approved by the Commission in the Tariff Order*
- *'Trued-up ARR' is the total ARR approved by the Commission in the True-up Order after undertaking prudent checks for various expenses*
- *'Adjusted Trued-up ARR' is the trued-up ARR adjusted for the disallowances which may be considered as unreasonable (computation of the Adjusted Trued-up ARR is shown in table below)*
- *'Adjusted ARR considering all disallowances' has been computed after considering all disallowances in expenses approved by the Commission in the true-up order.*

**Table 5 – Computation of Adjusted Trued up ARR - Madhya Pradesh**

| Particulars | FY 05-06 | FY 06-07 | FY 07-08 |
|---|---|---|---|
| Trued Up ARR (Rs. Crs) | 5074.59 | 6229.77 | 7297.21 |
| *Additional gap on account of higher than approved cost* | | | |
| Power Purchase (Rs. Crs) | 0.00 | 1140.77 | 1290.93 |
| Depreciation (Rs. Crs) | 83.61 | 109.53 | 84.62 |
| Interest Cost (Rs. Crs) | 3.70 | 79.10 | 152.60 |
| **Total Disallowance/ Variation (Rs. Crs)** | **87.31** | **1329.40** | **1528.15** |
| *Adjusted for non achievement of norms/target* | | | |

| Particulars | FY 05-06 | FY 06-07 | FY 07-08 |
|---|---|---|---|
| Power Purchase (Rs. Crs) | 0.00 | (514.51) | (1057.19) |
| Interest Cost (Rs. Crs) | (3.70) | (79.10) | (152.60) |
| Depreciation (Rs. Crs) | (83.61) | (109.53) | (84.62) |
| **Net Adjustment (Rs. Crs)** | **0.00** | **626.26** | **233.74** |
| **Adjusted ARR (including net adjustment) (Rs. Crs)** | **5074.59** | **6856.03** | **7530.95** |
| **Adjusted ARR considering all disallowances (Rs. Crs)** | **5161.90** | **7559.17** | **8825.36** |

**<u>Snapshot of approach/reasons</u>**

- 'Additional Gap on account of higher than approved cost' refers to the disallowance made by Commission on account of:
    - Power Purchase cost: The Commission had disallowed the power purchase quantum on account of under-achievement of distribution loss level. The Commission has applied the merit-order dispatch for disapproval of the power purchase cost i.e. disallowance of power purchase cost for short-term power purchased and for the balance units average power purchase cost for long-term sources of power has been considered.
    - Depreciation: The Commission has disapproved the depreciation as the utilities had charged depreciated on assets which had been depreciated to the tune of 90%.
    - Interest Cost: The Commission has disallowed the interest cost as the DISCOMs were unable to map the loans with the assets and also were not able to submit the required information.
    - Failure to meet the norms/ targets set by the SERC in line with the Tariff Regulations has been considered as justified and the disallowance on account of the same has been adjusted under the head "Adjustment for non-achievement of targets/norms"

- A part of the disallowed power purchase cost can be considered as unreasonable on the grounds that while truing up the Commission has computed the amount of power purchase cost disallowance on the merit order i.e. disallowance of costlier power. Therefore, the disallowance in power purchase cost has been adjusted to account for the actual average power purchase cost per unit in line with methodology adopted by other states.

- The Commission had approved a long-term distribution loss trajectory in FY 05-06 and had approved the distribution loss in the Tariff Order for FY 05-06 and FY 06-07 based on the same. On 28th December, 2006, the GoMP notified a revised long-term distribution loss reduction trajectory for the period FY 06-07 to FY 10-11. Though the Commission had considered the loss trajectory set by the GoMP at the time of true-up for FY 06-07 there was a time lag involved in the approval for the power purchase cost. The table below highlights the excess cost borne by the utilities on account of considering the loss trajectory specified by the Commission at the time of issuance of the Order.

**Table 6 – Excess costs borne by the utilities in Madhya Pradesh on account of loss trajectory specified by the Electricity Commission**

| Particulars | East | Central | West | Total |
|---|---|---|---|---|
| Sales Approved (MUs) | 6017 | 6211 | 7860 | 20109 |
| Distribution loss approved by Commission (%age) | 32.5% | 37% | 30% | 33.05% |
| Power Required at T&D interface (Mus) (A) | 8914 | 9859 | 11229 | 30036 |
| Distribution loss as per GoMP (%age) | 34.5 | 43 | 30 | |
| Power Required at T&D interface as per GoMP loss Trajectory (Mus) (B) | 9186 | 10896 | 11229 | 31311 |
| Difference (A)-(B) | (272) | (1038) | (0) | (1275) |
| Power Purchase rate approved by Commission (Rs./kWh) | | | | 1.53 |
| **Impact on the DISCOMs because of approval of earlier approved Trajectory (Rs. Crs)** | | | | **(195)** |

## c) Uttar Pradesh

**Table 7 – Required increase in tariff to meet the gap/disallowance – Uttar Pradesh**

| Particulars | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|
| Approved ARR[1] (Rs. Crs) | 13428 | 16260 | 17535 |
| ARR including RoE@16% | 13928 | 16950 | 18747 |
| Variation in Approved and Actual ARR (Rs. Crs) | (488) | 1,527 | (1,345) |
| Adjusted ARR[2] including RoE(Rs. Crs) | 14416 | 15423 | 20092 |
| | | | |
| Total Approved Realization inclusive of GoUP subsidy[3] (Rs. Crs) | 11504 | 13246 | 16589 |
| Impact of overestimation of sales (Rs. Crs) | (871) | (1306) | (976) |
| Adjusted Realization including approved GoUP subsidy[4] (Rs. Crs) | 10633 | 11940 | 15613 |
| | | | |
| Approved Sales (MUs) | 33713 | 38708 | 39985 |
| Actual Sales (MUs) | 30508 | 34000 | 37247 |
| Average CoS at Approved ARR including ROE (Rs./kWh) | 4.13 | 4.38 | 4.69 |
| Average CoS at Adjusted ARR including ROE (Rs./kWh) | 4.73 | 4.54 | 5.39 |
| Approved Average Realization excluding other measures (Rs./kWh) | 3.41 | 3.42 | 4.15 |
| Adjusted Average Realization excluding other measures (Rs./kWh) | 3.49 | 3.51 | 4.19 |
| Required Increase to meet the Trued-up ARR/ Untreated Gap | 21% | 28% | 13% |
| Required Increase to meet the Adjusted ARR (adjusted for unreasonable disallowance) | 36% | 29% | 29% |

- *'Approved ARR' is the total ARR approved by the Commission in the Tariff Order*
- *'Adjusted ARR' is as per the provisional accounts submitted by the DISCOMs in the subsequent ARR filings to the Commission.*

- *"Total Approved Realization inclusive of GoUP subsidy" is the total revenue from sale of power within the State and GoUP subsidy approved by the Commission. The other measures for meeting the gap like efficiency improvement, short-term borrowings, loan support from GoUP, etc have not been considered.*
- *"Adjusted Realization including approved GoUP subsidy" is the total revenue from sale of power within the State and GoUP subsidy approved by the Commission after adjusting for the impact of over-estimation of sales (as per the actual figures).*

**Snapshot of approach/reasons**

- In absence of the true-up of various expenses, the actual ARR claimed by the DISCOMs based on the provisional accounts submitted in the subsequent year ARR has been considered.
- Return on Equity has been considered as claim by the DISCOMs in the Petition.
- Other measures like GoUP support in form of short-term loan, borrowings from financial institutions, efficiency Improvements, savings in power purchase, etc approved by the Commission for meeting the revenue deficit has not been included in Approved Realization and the tariff increase required to cover the gap has been considered as "Required Increase to meet the ARR"
- The increase required to meet the higher than approved ARR and lower revenue realization (due to lower than approved sales within the State) has been considered for computing "Required Increase to meet the Adjusted ARR"

## d) Maharashtra

**Table 8 – Required increase in tariff to meet the gap/disallowance – Maharashtra**

| Particulars | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|
| Approved ARR[1] (Rs. Crs) | 17170.00 | 19002.00 | 25218.00 |
| Trued Up ARR[2] (Rs. Crs) | 19076.00 | 20650.00 | 23197.00 |
| Adjusted ARR considering all disallowances[3] (Rs. Crs) | 19574.21 | 20741.61 | 23524.88 |
| Approved Sales (MUs) | 47987 | 54711 | 63776 |
| Trued Up Sales (MUs) | 49147 | 55715 | 57796 |
| Average CoS at Approved ARR (Rs./kWh) | 3.58 | 3.47 | 3.95 |
| Average CoS at Trued up ARR (Rs./kWh) | 3.88 | 3.71 | 4.01 |
| Average CoS at Adjusted ARR considering all disallowances (Rs./kWh) | 3.98 | 3.72 | 4.07 |
| Required Increase to meet the Trued up ARR / untreated Gap | 8.48% | 6.71% | 1.50% |
| Required Increase to meet the entire disallowance | 2.61% | 0.44% | 1.41% |

- *'Approved ARR' is the total ARR approved by the Commission in the Tariff Order*
- *'Trued-up ARR' is the total ARR approved by the Commission in the True-up Order after undertaking prudent checks for various expenses*
- *'Adjusted ARR considering all disallowances' has been computed after considering all disallowances in expenses approved by the Commission in the true-up order.*

**Table 9 – Computation of Adjusted Trued up ARR considering all disallowances – Maharashtra**

| Particulars | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|
| Trued Up ARR (Rs. Crs) | 19076.00 | 20650.00 | 23197.00 |
| *Adjusted for non achievement of norms/target* | | | |

| Particulars | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|
| 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 Adjustment (Rs. Crs)** | **(498.21)** | **(91.61)** | **(327.88)** |
| **Adjusted ARR considering all disallowances (Rs. Crs)** | **19574.21** | **20741.61** | **23524.88** |

**Snapshot of approach/reasons**

- 'Adjustment for non-achievement of norms/targets' refers to the disallowance made by Commission on account of:
    - O&M expenses: The Commission had approved O&M expense on normative basis and the disallowance is primarily on account of higher R&M and A&G expense incurred by the MSEDCL over and above the normative amount.
    - Depreciation: The disallowance in depreciation is primarily on account of disallowance in asset capitalization by the Commission.
    - Interest & Finance expenses: The Commission has disapproved interest cost on account of short-term loans taken by MSEDCL.
- Failure to meet the norms/ targets set by the SERC in line with the Tariff Regulations has been considered as justified and the disallowance on account of the same has been adjusted under the head "Adjustment for non-achievement of targets/norms"

## e) Punjab

### Table 10 – Required increase in tariff to meet the gap/disallowance – Punjab

| S. No. | Attribute | Computation | FY 05-06 | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|---|---|---|
| 1 | Trued up ARR (Rs. Crs) | | 7516.31 | 9310.87 | 10648.89 | 11321.97 |
| | *Disallowance made by Commission on various parameters* | | | | | |
| 2 | Disallowance of sales (Rs. Crs) | | 46.04 | 75.65 | 399.73 | 333.01 |
| 3 | Disallowance of T&D loss (Rs. Crs) | | 326.20 | 487.33 | 962.61 | 435.99 |
| 4 | Disallowance in employee cost (Rs. Crs) | | 165.22 | 192.60 | 410.72 | 433.85 |
| 5 | Disallowance of Interest and finance charges (Rs. Crs) | | 124.68 | 444.22 | 618.44 | 378.60 |
| **6** | **Total Disallowance** (Rs. Crs) | (2+3+4+5) | **662.14** | **1199.80** | **2391.50** | **1581.45** |
| | *Adjusted for non achievement of norms/target* | | | | | |
| 7 | Sales (Rs. Crs) | | 46.04 | 75.65 | 399.73 | 333.01 |
| 8 | T&D Loss (Rs. Crs) | | 326.20 | 487.33 | 962.61 | 435.99 |
| 9 | Interest & Finance Charges* (Rs. Crs) | | 124.68 | 444.22 | 618.44 | 378.60 |
| 10 | Total Adjustment (Rs. Crs) | (7+8+9) | 496.92 | 1007.20 | 1980.78 | 1147.60 |
| **11** | **Net Adjustment (Rs. Crs)** | (6)-(10) | **165.22** | **192.60** | **410.72** | **433.85** |
| | | | | | | |
| **12** | **Adjusted ARR (Rs. Crs)** | (1)+(11) | **7681.53** | **9503.47** | **11059.61** | **11755.82** |

| S. No. | Attribute | Computation | FY 05-06 | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|---|---|---|
| 13 | Trued Up sales (MU) | | 25264 | 27656 | 30995 | 31673 |
| 14 | Average CoS (Rs./kWh) | (1)/(13)*10 | 2.98 | 3.37 | 3.44 | 3.57 |
| 15 | Revised Average CoS (Rs./kWh) | (12)/(13)*10 | 3.04 | 3.44 | 3.57 | 3.71 |
| *16* | *Required increase to meet the Adjusted ARR (adjusted for unreasonable disallowance)* | *(15-14)/(14)*100* | *2.2%* | *2.1%* | *3.9%* | *3.8%* |

*Interest and Finance Charges have been disallowed on account of diversion of funds.*

**<u>Snapshot of approach/reasons</u>**

- 'Disallowance made by the Commission on various parameters' refers to the disallowance of various cost parameters undertaken by the Commission in the True up process with reference to the targets/norms specified in the Tariff order for the respective year.
- 'Adjustment for non-achievement of the norms/target' refers to the disallowance of such cost parameters made by Commission which have been considered as legitimate. The following disallowances have been considered as legitimate:
  - Disallowance of sales has been done by the Commission on account of higher sales booked under unmetered agriculture category.
  - Disallowance of T&D loss refers to the disallowance in power purchase cost adjusted by the Commission for non achievement of distribution loss trajectory laid out by the Commission.
  - Disallowance of Interest and Finance Charges refers to the disallowance made by Commission for the diversion of capital funds for revenue purposes and disallowance of interest on working capital beyond normative levels as per the tariff regulations.
- Total Adjustment refers to the total disallowances on account of sales, T&D loss and interest & finance charges made by the Commission which have been considered as legitimate.
- The disallowance of employee cost by the Commission has been considered as unreasonable for the purpose of this analysis. Employee Cost was capped by the Commission at Rs.1274.66 Crores in FY 02-03 and subsequently, the Commission has approved considering the increase in WPI only. The Commission has not revised its base for calculation of employee cost and therefore any variation on account of increase in DA and basic pay has not been accounted for by the Commission in the subsequent year's approved employee cost. As per the service conditions of the Board's employees any increase in dearness allowance and on account of grant of annual increments to its employees has to be at par with the State Government employees.
- 'Net Adjustment' refers to the total disallowance adjusted for legitimate disallowance i.e. unreasonable disallowance which has been added back to the trued-up ARR to arrive at the 'Adjusted ARR'.

## f) Orissa

**Table 11 – Required increase in tariff to meet the gap/disallowance – Orissa**

| Particulars | FY 05-06 | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|---|
| Approved ARR (Rs. Crs) | 2348.40 | 2904.17 | 3585.49 | 3588.50 |
| Adjusted Trued-up ARR (Rs. Crs) | 2434.43 | 3057.57 | 3914.11 | |
| Adjusted ARR considering all disallowances (Rs. Crs) | 2555.46 | 3197.24 | 4156.70 | 3902.76 |
| | | | | |
| Untreated Gap as per Tariff order (Rs. Crs) | 65.87 | 6.03 | -0.60 | 29.35 |
| Untreated Gap as per True-up Order (Rs. Crs) | 86.03 | 153.40 | 328.62 | |
| | | | | |
| Approved Sales (MUs) | 8681 | 9866 | 12138 | 12856 |
| Actual Sales (MUs) | 9144 | 9288 | 10761 | 12915 |
| | | | | |
| Average CoS at Approved ARR (Rs./kWh) | 2.71 | 2.94 | 2.95 | 2.79 |
| Average CoS at Adjusted ARR (Rs./kWh) | 2.66 | 3.29 | 3.64 | |
| Average CoS at Adjusted ARR considering all disallowances (Rs./kWh) | 2.79 | 3.44 | 3.86 | 3.02 |
| | | | | |
| Required Increase to meet the Trued-up ARR | 3.66% | 5.28% | 9.17% | |
| Required Increase to meet entire disallowances (Rs. Crs) | 8.82% | 10.09% | 15.93% | 8.76% |

- *'Approved ARR' is the total ARR approved by the Commission in the Tariff Order*
- *'Adjusted Trued-up ARR' is the Approved ARR adjusted for the revenue gap approved for the respective year by the Commission*
- *'Adjusted ARR considering all disallowances' has been computed after considering all disallowances in expenses approved by the Commission in the true-up order. In absence of true-up order for FY 08-09, 'Adjusted ARR considering all disallowances' has been adjusted for the variation in approved and actual ARR*

**Table 12 – Computation of Adjusted Trued-up ARR - Orissa**

| Particulars | FY 05-06 | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|---|
| Approved ARR (Rs. Crs) | 2348.40 | 2904.17 | 3585.49 | 3588.50 |
| Revenue Gap as per True-up Order (Rs. Crs) | 86.03 | 153.40 | 328.62 | |
| **Adjusted Trued-up ARR (Rs. Crs)** | **2434.43** | **3057.57** | **3914.11** | **3588.50** |
| *Disallowed on account of non achievement of norms/ target* | | | | |
| Loss target (Rs. Crs) | 91.95 | 105.29 | 242.59 | |
| Administrative & General Expense (Rs. Crs) | 29.08 | 34.38 | 0.00 | |
| **Total Disallowance/ Variation (Rs. Crs)** | **121.03** | **139.67** | **242.59** | **314.26*** |
| **Adjusted ARR considering all disallowances (Rs. Crs)** | **2555.46** | **3197.24** | **4156.70** | **3902.76** |

** Actual variation in ARR based on the Petition filed by the DISCOMs*

**Snapshot of approach/reasons**

- The 'Adjusted Trued-up ARR' has been computed considering the approved ARR and adjusting for the revenue gap approved by the Commission in the true-up order.

- The disallowances done by the Commission are on account of non-achievement of the norms/ target set out by the Commission in its Tariff Orders. Following are the parameters on which the disallowances were made:
  - Power Purchase cost: The Commission has disallowed the power purchase cost on account of under-achievement of distribution loss targets.
  - Administrative & General Expense: The Commission has disallowed the A&G expense over and above the approved A&G expense.

## g) Rajasthan

**Table 13 – Required increase in tariff to meet the gap/disallowance – Rajasthan**

| S. No. | Revenue Gap/(Surplus) | Computation | FY 05-06 | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|---|---|---|
| 1 | Total Gap as per Tariff Order (Rs. Crs) | | 1201 | 638 | 1329 | 2653 |
| 2 | *Additional gap on account of higher than approved cost* | | | | | |
| 3 | Power Purchase (Rs. Crs) | | 528 | 706 | 2019 | 3379 |
| 4 | O&M (Rs. Crs) | | -8 | 12 | 300 | 1135 |
| 5 | Interest Cost (Rs. Crs) | | 313 | 353 | 244 | 696 |
| 6 | **Total Disallowance/ Variation*** | (3+4+5) | **832** | **1071** | **2564** | **5209** |
| 7 | *Adjustment for non-achievement of targets/norms* | | | | | |
| 8 | Power Purchase (Rs. Crs) | | -358 | -303 | -93 | -67 |
| 9 | O&M (Rs. Crs) | | 0 | 0 | -121 | -172 |
| 10 | Return on Equity @14% (Rs. Crs) | | ** | ** | 200 | 266 |
| 11 | **Net Adjustment (excluding Gap as per Tariff Order)** (Rs. Crs) | (6+8+9+10) | **474** | **768** | **2550** | **5236** |
| | | | | | | |
| 12 | Approved ARR (Rs. Crs) | | 7347 | 7332 | 9189 | 11397 |
| 13 | **Adjusted ARR (including net adjustment)** (Rs. Crs) | (12+11) | **7821** | **8100** | **11739** | **16633** |
| | | | | | | |
| 14 | Approved Sales (in MUs) | | 17219 | 19711 | 21950 | 23968 |
| 15 | Trued up/ Actual Sales (in MUs) | | 18309 | 20035 | 23658 | 26642 |
| | | | | | | |
| 16 | Avg CoS (Approved ARR/ Approved Sales) (Rs./kWh) | (12/14) | 4.27 | 3.72 | 4.19 | 4.76 |
| 17 | Revised Avg CoS (Adjusted ARR/ Actual Sales) (Rs./kWh) | (13/15) | 4.27 | 4.04 | 4.96 | 6.24 |
| 18 | Avg Realization[1] (Approved Revenue/ Approved Sales) (Rs./kWh) | | 3.59 | 3.46 | 3.62 | 3.69 |
| | | | | | | |
| 19 | *Required increase to meet the Trued-up ARR/ untreated Gap (%)* | | *19%* | *8%* | *16%* | *29%* |
| 20 | *Required increase to meet the entire Gap/ disallowance (%)* | | *19%* | *17%* | *37%* | *69%* |

[1] The average realization has been computed considering the total revenue and approved sales

*As per true-up for FY 05-06 & FY 06-07 and variation in actual for FY 07-08 & FY 08-09
** Equity for the DISCOMs is not available

**Snapshot of approach/reasons**

- For the computation of the tariff gap, the basic philosophy adopted is identification of the major disallowances in expenses by the SERCs which have a financial impact on the distribution utility. However, we have categorized the above disallowances under two categories i.e. justified and unjustified disallowance. Since the SERCs are guided by the Tariff Regulations at the time of issuance of Tariff Order and issuance of True-up Order, the disallowances are viewed in light of the norms/ targets set out by the SERCs in their Tariff Regulations.
- Any divergent view taken by the SERC with respect to the treatment of any parameter w.r.t. to the Tariff Regulations has been adjusted for in the total disallowance under the head 'Adjustment for non-achievement of targets/norms'
- Since the Commission had left the revenue gap untreated, the same has been considered for computing the total deficit
- Adjusted ARR has been arrived at by considering the untreated approved Gap as per the Tariff Order for the respective years and adjusted for increase in power purchase cost, O&M expense and interest on borrowings for meeting the Revenue Gap.
- Failure to meet the norms/ targets set by the SERC in line with the Tariff Regulations has been considered as justified and the disallowance on account of the same has been adjusted under the head "Adjustment for non-achievement of targets/norms". The adjustment in total disallowance/ variation is on account of following parameters:
    - Since the Commission has approved the power purchase cost in the True-up exercise irrespective of underachievement of distribution loss levels, adjustment for the power purchase cost to the extent of the underachievement in Distribution loss has been considered legitimate and therefore deducted from the total variation.
- Disallowance in O&M cost over and above the approved O&M expenses for the respective year has been considered. However, the higher O&M cost on account of AS- 15 and 6th pay Commission has been considered legitimate in absence of True-up for FY 07-08 (Ajmer only) and for FY 08-09 (all the DISCOMs).
- Return on equity @14% has been considered in line with the Tariff Regulations.

## h) West Bengal

**Table 14 – Required increase in tariff to meet the gap/disallowance – West Bengal**

| Particulars | FY 06-07 | FY 07-08 | FY 08-09 | FY 09-10 |
|---|---|---|---|---|
| Approved ARR[1](Rs. Crs) | 3579.02 | 4133.13 | 5580.03 | 6453.98 |
| Trued-up ARR[2] (Rs. Crs) | 3983.18 | 4884.29 | 6903.82 | 7314.32 |
| Adjusted ARR considering all disallowances[3] (Rs. Crs) | 4361.48 | 5160.34 | 7136.11 | 7784.20 |
| Approved Sales (MUs) | 11217 | 12896 | 14980 | 17025 |
| Actual Sales (MUs) | 11724 | 13086 | 14185 | 15691 |
| Average CoS at Approved ARR (Rs./kWh) | 3.19 | 3.20 | 3.72 | 3.79 |
| Average CoS at Trued-up ARR (Rs./kWh) | 3.40 | 3.73 | 4.87 | 4.66 |
| Average CoS at Adjusted ARR considering all | 3.72 | 3.94 | 5.03 | 4.96 |

| Particulars | FY 06-07 | FY 07-08 | FY 08-09 | FY 09-10 |
|---|---|---|---|---|
| disallowances (Rs./kWh) | | | | |
| Required Increase to meet the Trued up ARR# | 6.48% | 16.46% | 30.66% | 22.96% |
| Required Increase to meet the entire disallowance | 9.50% | 5.65% | 3.36% | 6.42% |

*# Part of the required tariff increase was passed on to the consumers as per the FPPCA formula*

- *'Approved ARR' is the total ARR approved by the Commission in the Tariff Order*
- *'Trued-up ARR' is the Approved Trued-up ARR approved by the Commission*
- *'Adjusted ARR considering all disallowances' has been computed after considering all major disallowances in expenses approved by the Commission in the true-up order. In absence of true-up order for FY 09-10, 'Adjusted ARR considering all disallowances' has been adjusted for the variation in power purchase expense only from the FPPCA Order issued by the Commission*

**Table 15 – Computation of Adjusted Trued-up ARR – West Bengal**

| Particulars | FY 06-07 | FY 07-08 | FY 08-09 | FY 09-10 |
|---|---|---|---|---|
| Trued-up ARR (Rs. Crs) | 3983.18 | 4884.29 | 6903.82 | 7314.32 |
| Regulatory Asset (Rs. Crs) | | | | 127.24 |
| **Adjusted Trued-up ARR (Rs. Crs)** | **3983.18** | **4884.29** | **6903.82** | **7441.56** |
| *Disallowed expenses on account of non achievement of norms/target* | | | | |
| Power Purchase Cost (Rs. Crs) | 351.98 | 229.71 | 209.89 | 342.64 |
| O&M Expense (Rs. Crs) | 26.32 | 46.34 | 22.40 | 0.00 |
| **Total Disallowance/ Variation (Rs. Crs)** | **378.30** | **276.05** | **232.29** | **342.64** |
| **Adjusted ARR considering all disallowances (Rs. Crs)** | **4361.48** | **5160.34** | **7136.11** | **7784.20** |

** Actual variation in ARR based on the Petition filed by the DISCOMs*

**Snapshot of approach/reasons**

- The 'Adjusted Trued-up ARR' has been computed considering the approved ARR and adjusting for the revenue gap approved by the Commission (approved as regulatory asset) in the Order.
- Since the disallowances done by the Commission have been considered as reasonable as the same are on account of non-achievement of the norms/ target set by the Commission in the Tariff Orders. Following are the parameters on which the disallowances were made:
    - Power Purchase cost: The Commission has disallowed the power purchase cost on account of under-achievement of distribution loss targets in the respective years.
    - R&M and A&G Expense: The Commission has disallowed actual cost over and above the approved cost for the controllable parameters i.e. A&G and R&M expense as provided in the tariff regulations.

## i) Karnataka

**Table 16 – Computation of Adjusted Trued-up ARR – Karnataka**

| Particulars | FY 05-06 | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|---|
| Approved ARR[1] (Rs. Crs) | 8511.35 | 9809.85 | 11105.93 | 13302.43 |
| Trued Up ARR[2] (Rs, Crs) | 7807.83 | 9566.28 | 11354.55 | 13408.22 |

| Particulars | FY 05-06 | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|---|
| Adjusted ARR considering all disallowances[3] (Rs. Crs) | 8156.63 | 10063.78 | 11468.09 | 13531.31 |
| Approved Sales (MUs) | 26006 | 25860 | 30506 | 33524 |
| Trued Up Sales (MUs) | 24090 | 28453 | 29988 | 32199 |
| Average CoS at Approved ARR (Rs./kWh) | 3.27 | 3.79 | 3.64 | 3.97 |
| Average CoS at Trued up ARR (Rs./kWh) | 3.24 | 3.36 | 3.79 | 4.16 |
| Average CoS at Adjusted ARR considering all disallowances (Rs./kWh) | 3.39 | 3.54 | 3.82 | 4.20 |
| *Shortfall is Receipt of Subsidy* | *93.43* | *485.59* | *223.32* | *2350.67* |
| Required Increase to meet the Trued up ARR/ uncovered gap | -0.97% | -11.37% | 4.01% | 4.94% |
| Required Increase to meet the entire disallowance | 4.47% | 5.20% | 1.00% | 0.92% |
| Required Increase to meet the entire disallowance along with shortfall in receipt of subsidy | 5.73% | 10.83% | 3.03% | 22.37% |

- *'Approved ARR' is the total ARR approved by the Commission in the Tariff Order*
- *'Trued-up ARR' is the total ARR approved by the Commission in the True-up Order after undertaking prudent checks for various expenses*
- *'Adjusted ARR considering all disallowances' has been computed after considering all disallowances in expenses approved by the Commission in the true-up order.*

### Table 17 – Computation of Adjusted Trued up ARR considering all disallowances – Karnataka

| Particulars | FY 05-06 | FY 06-07 | FY 07-08 | FY 08-09 |
|---|---|---|---|---|
| Trued Up ARR (Rs. Crs) | 7807.83 | 9566.28 | 11354.55 | 13408.22 |
| *Adjusted for non achievement of norms/target* | | | | |
| Disallowance in Power Purchase Cost | (310.30) | (390.59) | 0.00 | (62.88) |
| Disallowance in O&M expenses | (24.65) | 0.00 | (113.54) | (60.21) |
| Disallowance in interest & finance expenses | (13.85) | (106.91) | 0.00 | 0.00 |
| **Net Adjustment (Rs. Crs)** | **(348.80)** | **(497.50)** | **(113.54)** | **(123.09)** |
| **Adjusted ARR considering all disallowances (Rs. Crs)** | **8156.63** | **10063.78** | **11468.09** | **13531.31** |

**Snapshot of approach/reasons**

- 'Adjustment for non-achievement of norms/targets' refers to the disallowance made by Commission on account of:
  - Power Purchase cost: The Commission had disallowed the power purchase quantum on account of under-achievement of distribution loss level.
  - O&M expenses: The Commission had approved O&M expense on normative basis and the disallowance is primarily on account of higher O&M expense incurred by the DISCOMs over and above the normative amount.
  - Interest & Finance expenses: The Commission has disapproved interest cost on belated payment of power purchase cost.

- Failure to meet the norms/ targets set by the SERC in line with the Tariff Regulations has been considered as justified and the disallowance on account of the same has been adjusted under the head "Adjustment for non-achievement of targets/norms"

## j) Tamil Nadu

**Table 18 – Computation of Adjusted Trued-up ARR – Tamil Nadu**

| Particulars | FY 10-11 |
|---|---|
| Approved ARR (Rs. Crs) | 27946.44 |
| Untreated Gap at Approved Tariff (Rs. Crs) | 7905.04 |
| Total Revenue Realization at Approved Tariff (Rs. Crs) | 20041.40 |
| | |
| Approved Sales(MUs) | 58449 |
| | |
| Average Realization(Revenue Realization at approved Tariff/ Approved Sales) (Rs./kWh) | 3.43 |
| Average CoS (Approved ARR/ Approved Sales) (Rs./kWh) | 4.78 |
| *Required increase to meet the untreated Gap (%)* | *39.44%* |

**Snapshot of approach/reasons**

- The accumulated gap of Tamil Nadu Electricity Board at the end of FY 08-09 stood at Rs.16774.47 Crs. However, the Commission has disallowed the gap to be considered as a pass through in tariff and indicated that the treatment of the accumulated losses would be done at the time of unbundling of TNEB. Therefore for the purpose of our analysis we have considered the revenue gap determined by the Commission for FY 10-11.
- The untreated gap of Rs. 7905 Crs pertain to FY 10-11 and the same has been treated as regulatory asset by the Commission to avoid any tariff shock.

# 3 ANNEXURE

## 3.1 Sales

***Haryana***

The sales estimate for all metered categories has been based on the average Annual Load Factor (ALF). The Commission has adjusted the consumer wise sales estimate based on the ALF to the extent of volume of power available considering an energy deficit in the State. For un-metered agriculture category, the Commission has estimated the energy consumption based on the pattern of the consumption of metered agriculture pump sets.

Since no true-up has been carried out by the Commission for the past years, the trued-up sales figure is not available. However, based on the actual sales furnished by the DISCOMs, it is observed that the actual sales have been higher than the approved sales during the period FY 06 to FY 10 excluding FY 09.

***Madhya Pradesh***

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. The Commission had approved the unmetered sales based on the norms. However, the Commission has been revising the norms in the tariff orders issued during FY 06 to FY 10.

For truing-up, the Commission had accepted the sales for metered categories but applied the consumption norms for un-metered consumers.

***Uttar Pradesh***

The Commission while approving energy sales for the DISCOMs has 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.

In absence of availability of audited accounts, the Commission has not carried out any true-up. However, it is observed that the approved sales have been higher than the actual sales in each of the year.

***Maharashtra***

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.

For approval of sales to unmetered category, the Commission has considered the recorded consumption of metered consumers based on which a zone-wise consumption norm in hrs/hp/annum has been computed. This zone-wise consumption norm has been applied for projecting unmetered agricultural consumption.

The Commission has approved the actual sales claimed by MSEDCL in the true-up orders. Therefore, there are no disallowances in actual sales.

***Punjab***

For the Metered categories the Commission has consistently considered past three years CAGR of actual sales to approve current years 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 Commission has disallowed the higher than approved sales to the unmetered category of agricultural consumers.

***Orissa***

The Commission approves sales based on voltage. The sales for HT and EHT category are based on the load growth. The Commission has considered the electrification of villages under RGGVY and BGJY schemes while projecting higher sales.

***Rajasthan***

For the metered categories the Commission has considered either 3 year CAGR or 5 year CAGR for estimating energy sales. However, for projecting the un-metered agriculture consumption the Commission has applied a norm which has been revised. However, no study has been carried out to arrive at the norm for unmetered agriculture consumption.

The actual sales had been higher than the approved sales. The Commission has approved the actual sales in the true-up exercise without any disallowances.

***Tamil Nadu***

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

***West Bengal***

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%.

The Commission has disallowed sales in FY 06 only when it considered T&D loss on normative basis. 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.

### *Karnataka*

For the purpose of estimation of sales, the Commission had categorized the consumer under two category i.e. metered consumers and un-metered consumers. 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.

The Commission has approved actual sales in each of the true-up/ APR exercise based on actual/ provisional accounts of the DISCOMs.

**Exhibit 1 – Comparison of approach for sales**

Most of the SERCs have been approving actual sales (both metered and un-metered) based on the audited/ actual figures furnished by the utilities. However, a few of the SERCs like MP and Punjab have applied the similar consumption norm (units consumed per hp per year) for un-metered agriculture consumption at the time of issuance of tariff order as well as the time of true-up order.

In states like Karnataka, Maharashtra and Punjab, the variation in the actual/ trued-up sales and estimated sales (as per the tariff order) is minimal which is a reflection of the seriousness shown by the respective Commissions' in fair estimation of sales in the tariff orders. i.e. In Karnataka, KERC has been estimating the sales of various metered categories of consumers based on the CAGR for short-term (2 years) to medium-term (5 years) and for un-metered category of consumers the number of installation and the trends in average consumption level of past years has been considered. The Commission has also adjusted the sales estimate for number of factors like population, Government policies, number of hours of supply, target set, independent research reports and sales proposed by the DISCOMs.

In case of MP, the Commission has been approving higher sales estimate each year in the Tariff Order in spite of the lower trued-up sales figures. A similar case is witnessed in the state of UP where the Commission has been approving higher consumption in each of the tariff order leading to overestimation of revenue from sale of energy to the consumers within the State

Under-estimation of sales also is a prevalent exercise which helps in reducing the power purchase requirement resulting in reduced ARR. SERCs in the state of Rajasthan and Haryana is underestimating the sales as these are energy deficit states.

## 3.2 Distribution Loss

### *Haryana*

Post the power sector reforms in Haryana, the Commission had restated the T&D losses from approximately 29% reported by the utilities to approximately 41%. The approach for setting of loss reduction targets by the Commission has been 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.

Since no true-up has been carried out by the Commission for FY 06 to FY 10, the actual losses cannot be ascertained.

***Madhya Pradesh***

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. Any under-achievement in distribution loss level is disallowed by the Commission at the time of true-up and any power purchased power purchase to the extent of higher distribution loss is disapproved.

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 considering the fact that the DISCOMs were not able to achieve the loss trajectory in the past.

***Uttar Pradesh***

The Commission in the tariff order for FY 01-02 had in consultation with UPPCL, specified a long-term trajectory for T&D loss level and collection efficiency to be achieved by UPPCL. However, it was observed that the UPPCL/ distribution utilities were not able to achieve the targets. 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. In spite of the revision in the loss target, the utilities have not been able to meet the targets specified by the Commission in the subsequent tariff orders.

The financial impact of the actual revenue being lower than the approved revenue (due to lower quantum of power availability) is borne by the DISCOMs in absence of truing up.

***Maharashtra***

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 distribution losses assessed for FY 06-07 as per 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.

In the true-up/ APR Order the Commission has considered the actual intra-state transmission losses, variation in power purchase quantum, information on energy receipt at the periphery from SLDC, etc. to approve the trued-up distribution loss for MSEDCL.

***Punjab***

In view of the large un-metered agriculture consumption in the State, 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.

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 undertaken by the Commission for FY 2001-02. The Commission determined a norm for agriculture consumption and on the basis of the connected load given by the Board 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.

During the True Up process the Commission disallowed power purchase expenses on account of higher than approved T&D loss.

***Orissa***

In the state of Orissa, distribution and AT&C loss are computed separately. The baseline losses have been fixed by Commission in their first Business Plan order in the year 2005 which was based on the filings by DISCOMs and report of high power Committee set up by the State Government. Though, the Commission has used AT&C loss for determining the performance of the DISCOMs, distribution loss is taken into consideration in assessing sales in each year.

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. During the True-up process the Commission has disallowed power purchase expenses on account of higher than approved distribution loss.

***Rajasthan***

Considering the high percentage of un-metered agriculture consumption, determination of loss is a complex activity. 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.

The Commission has accepted the actual loss level achieved by the 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.

***Tamil Nadu***

TNEB is maintaining T&D loss level at 18% since 2003-04. However, the Commission has 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.

### *West Bengal*

The Commission had approved T&D loss for WBSEB for FY 04-05 as per the reduction trajectory set by the Commission in tariff order for FY 02-03. 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 Commission approved a reduction in loss level over the approved T&D loss of previous year irrespective of the actual T&D loss. Similarly, post unbundling of the WBSEB, the Commission approved distribution loss for WBSEDCL after providing for transmission loss. From FY 08-09, the Commission approved distribution loss as per the norms specified in the Tariff Regulations, 2007.

For the purpose of true-up, the Commission has considered T&D losses as approved in the Tariff Order of the respective year and any underachievement in loss level has been to the account of WBSEDCL.

### *Karnataka*

In the initial years i.e. FY 05-06 & FY 06-07, the Commission had approved the distribution loss for each DISCOM based on the distribution losses for previous year and T&D loss reduction roadmap for the State of Karnataka furnished by the Commission to CEA. The Commission has also analyzed the actual loss levels for towns/cities and the areas excluding town/cities while approving the loss targets.

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.

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.

**Exhibit 2 – Comparison of approach for treatment of T&D loss**

Estimation of distribution loss level remains a concern considering the large quantum of un-metered sales to agriculture consumers. The estimation for approved loss level is primarily based on the past performance of the utility and the proposed capital expenditure plan. However, a few states have actually undertaken load-flow studies to determine the loss targets for the utilities.

Majority of the SERCs have been approving the loss targets on an annual basis without providing a long-term trajectory. However, with the adoption of MYT principles the SERCs have been approving trajectories for the control period.

Post approval of the loss reduction targets, some of the SERCs have revised the loss targets or considered the actual loss levels, as claimed by the utility e.g. Rajasthan while other SERCs such as KERC, MERC, WBERC and PSERC have retained the distribution loss targets in the true-up orders and have disallowed the power purchase cost for under-achievement in the distribution loss targets.

## 3.3 Power Purchase Cost

***Haryana***

The Commission has been underestimating the sales which had lead to variations in actual and approved total power purchase cost. Also, the Commission had not considered the actual cost paid by the utility in the previous year while approving the power purchase cost resulting into underestimation of power purchase cost.

Though, 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, there is a delay in filing of the FSA by the DISCOMs resulting in short-term borrowings for meeting the revenue gap.

***Madhya Pradesh***

In the true-up exercise, the Commission considers the actual sales and grosses it up for the target distribution losses. Therefore cost of the surplus power purchased by the DISCOMs is disallowed by the Commission.

***Uttar Pradesh***

UPPCL on behalf of the DISCOMs is responsible for the power purchase from various sources. 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 actual power purchase cost has been higher than the approved power purchase cost. Since no true-up order has been issued by the Commission, the variation in power purchase cost has remained un-recovered.

***Maharashtra***

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.

***Punjab***

The Commission had disallowed the power purchase cost which could be attributed to the following factors:

- Reduction of sales to agriculture consumers in view of the norms specified at the time of issuance of the Order.
- Increase in sales to metered categories of Consumers which leads to purchase of power over and above the level approved.
- Underachievement in the T&D loss approved by the Commission

***Orissa***

The Commission has trued up Power Purchase Cost as per audited actual power purchase cost.  Therefore, there is no disallowance of power purchase cost. However, the Commission has trued-up revenue from sales based on the actual power purchase quantum and benchmark distribution losses as per the business plan.

***Rajasthan***

The Utilities in Rajasthan have been facing severe financial crisis mainly on account of rising power purchase cost. 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 Commission has approved the total power purchase cost without any disallowance.

***Tamil Nadu***

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.

***West Bengal***

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.

***Karnataka***

Considering the higher than approved distribution losses during FY 05-06 & FY 06-07, the Commission had disallowed the power purchase quantum and cost for the respective years. Also, in the APR Orders, the Commission had viewed to consider the penality/ incentive on account of under or over-achievement in the distribution losses in the true-up for FY 09-10.

## 3.4 Operation and Maintenance Expenses

***Haryana***

Due to no truing up exercise followed in the State, the shortfall in employee cost, R&M and A&G expense remains uncovered.

**_Madhya Pradesh_**

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 & 11 kV network length and transformation capacity of power transformers. The Commission has trued-up O&M expenses on the basis of norms approved taking into account the 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 which the Commission had disallowance on two counts:

- One on the issue of terminal benefits of erstwhile MPSEB which the Commission 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.

**_Uttar Pradesh_**

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 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.

**_Maharashtra_**

*Employee Cost*

The Commission has been approving the employee cost in each of the tariff orders considering the inflation factor corresponding to increase in CPI over the actual employee cost incurred in the past period.

The Commission has been approving the net employee cost each year at the time of true-up in line with the Tariff Regulations. However, any variation in expense on account of 6$^{th}$ pay commission impact, addition of new employee, training of employees, VRS schemes, etc has been approved by the Commission in full. As regards the one-time impact of Rs. 440 crore claimed by MSEDCL for leave encashment in accordance with 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 installment.

*Repair & Maintenance*

The Commission had considered average R&M expenditure as a percentage of opening GFA. R&M expenses over and above the approved figure have been disallowed in the APR/ true-up orders. 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&G cost for MSEDCL considering an increase 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 WPI and CPI for past 3 years considering a weightage of 60:40 respectively. The Commission had disallowed the higher than approved A&G expense considering that the same being controllable in nature. However, 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.

***Punjab***

*Employee Cost*

The Commission has consistently during each year has disallowed more than 10% of the projected employee cost in view of the fact that the Board's employee cost is one of the highest in India. The Commission has asked for the steps to taken by Board to reduce employee cost but has not specified any yearly target for the same.

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. In the true-up exercise the Commission has approved variation only for the increase in WPI for the year.

*Repair & Maintenance*

The Commission has been approving R&M expenses of the current year based on the increase in WPI of the previous year.

*Administrative and General Expenses*

The Commission has followed the approach of considering the A&G expenses of the previous year as base and applied an escalation factor equal to the inflation. Later at the time of true up the Commission considers the actual WPI increase.

***Orissa***

The Commission has segregated the O&M expenses into employee, R&M and A&G expenses while approving. As per the regulations, these costs shall be recognised at actual or as allowed by the Commission, whichever is lower.

The Commission while truing up has approved Employee Cost and R&M cost based on the audited figures but in case of A&G Expenses, the Commission has trued-up the same based on the approved figures as it viewed that 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..

### *Rajasthan*

The Commission in the earlier orders had approved the employee cost, R&M and A&G expense 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. The major variation between the approved and actual O&M costs was primarily on account of employee cost which has been primarily on account of provisioning of actuarial liabilities as per AS-15.

### *West Bengal*

*Employee Cost*

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.

*Other O&M Cost*

O&M expense excluding employee expense is considered to be controllable as per the tariff regulations. R&M is the major expense under this head. Since the Commission considers employee cost as an uncontrollable cost, the disallowance in total O&M cost is only on account of R&M and A&G expenses.

**Exhibit 3 – Comparison of approach for sales**

For approval of the O&M expenses, SERCs such as KERC, RERC, MPERC have shifted to a normative approach. Any expense over and above the approved expense is disallowed by the SERCs in line with their relevant tariff regulations. However, components of employee cost are uncontrollable in nature i.e. DA which is governed by equivalent pay scales of employees in the State Government. In view of the same, WBSERC has considered employee cost as uncontrollable parameter and have aggregated other components of O&M under a separate category and considered the same as controllable. Therefore, any variation in employee cost is approved by the SERC in the true-up exercise as per the actual while higher than approved O&M expense is disallowed in the true-up.

### *Karnataka*

O&M expenses have been estimated considering the norms provided in the MYT Regulations. For the MYT Period, the Commission had considered the weighted average rate of CPI and WPI (70:30) to compute the average inflation rate. 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.

For the 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.

## 3.5 Depreciation

***Haryana***

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. No true-up exercise undertaken by the Commission.

***Madhya Pradesh***

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

***Uttar Pradesh***

In absence of a detailed asset register, the Commission has applied a weighted average depreciation rate of 7.84% for the distribution business. 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.

***Maharashtra***

The Commission for each of the year i.e. FY05 to FY09 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 disallowance in depreciation is primarily on account of disallowance in asset capitalization by the Commission.

***Punjab***

The Commission approves depreciation function wise, by applying function wise depreciation rates to the assets.

***Orissa***

Depreciation is trued-up as per audited actual figures therefore there is no disallowance and impact thereon.

***Rajasthan***

During the first MYT control period, the Commission had applied an average depreciation rate of 3.6% (as permissible under Regulations). 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.

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.

***West Bengal***

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. However, from FY 07 onwards, the Commission had approved depreciation as proposed by WBSEDCL which was estimated as per the Commission's Terms & Conditions of Tariff Regulations, 2005.

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.

***Karnataka***

The depreciation for the initial FY 05-06 & FY 06-07 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.

**Exhibit 4 – Comparison of approach for treatment of depreciation**

SERCs have been approving the depreciation as provided in the respective tariff regulations after adjusting for assets created out of consumer contribution, grants, etc. Therefore, there is no major disallowance under this parameter at the time of true-up.

Disallowances in depreciation by SERCs have been primarily restricted to disallowance in asset capitalization (lack of scheme approvals) for example, Maharashtra or the assets which have depreciated to the extent of 90% over their useful life for example MP.

## 3.6 Interest and Finance Charges

***Haryana***

The Commission had approved 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. Interest on working capital has been provided equivalent to one month of the ARR of the distribution utilities.

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.

### *Madhya Pradesh*

The Commission considers interest cost on assets which have been capitalised and have been added to the asset base. The Commission maps loans with the assets created and does not consider interest and finance charges on works in progress.

The Commission approved working capital under Working capital requirement for Wheeling and requirement for retail sale activity on normative basis.

### *Uttar Pradesh*

The approval on long term loans for undertaking capital expenditure has been taken as per the 70:30 debt-equity ratio. 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.

### *Maharashtra*

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 has approved the normative working capital requirement for MSEDCL, in each of the Tariff Orders.

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.

### *Punjab*

The Commission disapproves the interest amount of Rs 100 Crs for each of the years on account high interest rates charged on the loans which 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. However disallowance of interest on Working Capital has been done mainly on account of:

- Disallowance in power purchase cost
- Disallowance in Employee cost

### *Rajasthan*

Interest charges of the DISCOMs mainly comprise of interest on long term loans, interest and finance charges on short-term borrowings 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 approves 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 which is inadequate to cover the interest burden on account of loans taken for meeting the accumulated revenue gap.

### *West Bengal*

The Commission has approved interest cost as proposed by WBSEDCL. However, disallowance on other financing charges relating to fees and expenses for restructuring of loans and interest on capital liabilities has been done by the Commission.

As per the WBERC (Terms and Conditions of Tariff) Regulations, 2007, interest on working capital is considered as uncontrollable expense. In the Tariff Orders, 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.

### *Karnataka*

Interest on capital loans were approved after undertaking a scheme-wise analysis. In the true-up, interest was approved based on the outstanding amount as per the audited accounts of DISCOMs.

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.

**Exhibit 5 – Comparison of treatment for interest and finance charges**

Interest and finance charges form a major component of the ARR after power purchase cost. Interest expense primarily consists of the interest cost on capital borrowings and interest cost on working capital loans. While the SERCs approved interest on capital borrowings based on the outstanding loans and average cost of debt, interest on working capital loans is on normative basis.

The major disallowance in interest cost has been on account of short-term borrowings to meet the revenue deficit, unrecovered gap, underestimation of ARR, regulatory asset, etc. SERCs like PSERC allow for carrying cost on any revenue deficit at the time of true-up as well provide for borrowing cost on account of delay in the receipt of subsidy from the Government.

However, SERCs like RERC do not provide for any interest cost on short-term borrowing made by the DISCOMs in spite of an unrecovered gap left in the Tariff Order of the DISCOMs. HERC and UPERC provide for operational efficiency, further reduction in distribution losses, and additional subsidy from the Government to meet the revenue gap and therefore no carrying cost is provided in case of non-achievement/ non-receipt of the same.

## 3.5 Return

***Haryana***

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.

***Madhya Pradesh***

The Commission has approved RoE @ 16% till FY 07-08 and from FY 08-09 onwards it approved return RoE @14%.

***Uttar Pradesh***

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. Therefore, the Commission has also not considered any return while approving the ARR of the DISCOMs.

***Maharashtra***

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.

***Punjab***

Till FY 05-06 the Commission approved Return @3% 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. From FY 06-07 onwards the Commission approved RoE @ 14%.

***Orissa***

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.

***Rajasthan***

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.

***West Bengal***

The approach of the Commission for approving return has not been consistent. For FY 06 the Commission approved return 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.

***Karnataka***

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% in the subsequent Tariff Orders.

**Exhibit 6 – Comparison of approach for treatment of ROE**

Most of the SERCs are following a Return on Equity approach for approval of reasonable return. However, the rate of return approved is not consistent across the SERCs and varies from 12%-16%. Few of the SERCs i.e. UPERC, RERC, HERC do not allow any Return component in the ARR of the DISCOMs considering that the same would put additional burden on the consumers. However, SERCs like PSERC have approved Return in the ARR of the Board in spite of increasing losses considering that denial of Return may further worsen the financial health of the Board.

## 3.6 Subsidy

***Haryana***

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. However, the Commission does not provide for any carrying cost for delay in receipt of subsidy from the State Government.

***Madhya Pradesh***

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

***Uttar Pradesh***

The DISCOMs have been receiving huge subsidy from the Government of UP (GoUP) to meet their revenue deficit. Apart from the agricultural subsidy, the Commission has also provided for additional subsidy from the Government in case the revenue gap is not met through tariff increase, efficiency measures, etc.

***Maharashtra***

The State Government provides subsidy to MSEDCL. However, the details of the quantum of subsidy considered have not been provided in the tariff orders.

***Punjab***

The government of Punjab subsidizes AP consumers, Scheduled Castes DS consumers and Non-SC BPL DS consumers. The subsidy amount is required to be paid by the Government in equal quarterly instalments, in advance, at the beginning of each quarter. However, the same does not happen and therefore; PSEB had to resort to short term loans to meet its Revenue Requirements. PSERC has approved the interest on delayed payment of subsidy to the Board.

***Orissa***

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

***Rajasthan***

Since the tariffs to agricultural and domestic consumers are lower than the average cost of supply, the Government subsidy has an important role to play. Apart from providing subsidy against the consumption by agricultural consumers, the State Government also provides subsidy against power purchase. 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 State Government is not paying the subsidy in advance to the DISCOMs and there is a shortfall in receipt of subsidy payment leading to an adverse financial impact on the utilities.

***West Bengal***

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

***Karnataka***

The GoK commits the amount of subsidy that would be released each year for each of the utilities. It is observed that the release of subsidy is not equal to the amount of subsidy estimated by the Commission. At the time of true-up, the Commission considers 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. Also, revenue gap for FY 07-08 & FY 08-09 in the APR exercise has been considered to be funded from additional subsidy from GoK.

**Exhibit 7 – Comparison for subsidy process**

Few of the SERCs like PSERC and KERC are following the provisions of the Electricity Act with regard to the tariff approval for subsidized categories and specifying tariffs including and excluding Govt subsidy. Few of the approaches considered by the States for consideration of subsidy support are summarized below:

*Considering the high levels of subsidy support by Govt of Karnataka, KERC in each of its tariff order has specified two sets of tariffs (i.e. with and without subsidy support) for the subsidized category as per the Sec 65 of the Electricity Act and has given clear instructions to the DISCOMs to charge rates excluding subsidy in case the DISCOMs do not receive the subsidy support in advance.*

*PSERC before ascertaining the tariffs seeks government stand on the amount of subsidy demarcated for agriculture consumption and free units to SC category. Further, PSERC works out the total revenue from the consumer tariffs considering the subsidy of State Govt. In the Orders, PSERC has approved agricultural tariff including and excluding Govt. subsidy. The tariff for agricultural consumers has been increased consistently by Rs. 42/BHP/month in the last four years (FY 06 to FY 09)*

***It is observed that PSERC also provides for borrowing cost for late receipt of subsidy from the State Government.***

Though other States like UP, Rajasthan, Haryana are also dependent on the Govt. subsidy to a large extent, the tariffs are neither reflective of the average cost of supply nor the Commission computes the specific subsidy requirement based on the consumption of the subsidized categories. The Commission considers the allocation of Government support as per the budgetary estimate and provides for the same in the tariff orders.

## 3.7 Regulatory Asset

***Haryana***

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. The Commission has also permitted a carrying cost on the borrowings utilized for bridging the approved regulatory gap.

***Madhya Pradesh***

The Commission had left an uncovered gap amounting to Rs. 9.50Crs in FY 06-07.

***Maharashtra***

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

***Punjab***

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.

***Orissa***

The Commission has been approving amortization of Regulatory asset of the past years.

***Rajasthan***

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

***Tamil Nadu***

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.

The Commission has specified that the regulatory asset created would be charged as expenditure while formulating the ARR in the future years.

***West Bengal***

The Commission has been approving creation of regulatory asset as and when required. However, the same is amortized in the subsequent ARR. The creation of regulatory asset was primarily to contain the tariff hike at a reasonable level.

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.

***Karnataka***

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

**Exhibit 8 – Approach on Regulatory Assets**

| |
|---|
| Though not many SERCs have been approving creation of regulatory asset in its tariff orders, a few of them like West Bengal, Haryana, and Tamil Nadu have created regulatory asset primarily to contain the tariff increase. Though tariff regulations provide for approval of carrying cost on the regulatory asset, the Commission's have been silent while approving the ARR. |

## 3.8 Tariff Reflective of Approved ARR

***Haryana***

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.

***Madhya Pradesh***

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

***Uttar Pradesh***

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.

***Maharashtra***

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.

***Punjab***

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.

***Orissa***

The Commission in all the tariff orders has left the gap uncovered and has not increased the tariff.

***Rajasthan***

The Commission in all the tariff orders has left the gap uncovered i.e. there exists a gap between the revenue realized and approved ARR by the Commission.

***West Bengal***

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

***Karnataka***

The Commission has increased/ decreased based on the requirement. In the MYT Order, the Commission also 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.

**Exhibit 9 – Approach towards tariff reflecting costs**

It is observed that the SERCs of Maharashtra, West Bengal, Punjab, have been progressive and have increased tariff based on the requirement. However, other SERCs in states like UP, Rajasthan, TN and Haryana have been not increasing tariffs.