

ANNUAL REVENUE REQUIREMENT

FY 2009-10



उ० प्र० सरकार का उपक्रम

**Dakshinanchal Vidyut Vitaran Nigam
Limited
AGRA
July, 2009**

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ABBREVIATIONS

A&G	- Administrative & General Expenses
CERC	- Central Electricity Regulatory Commission
CGS	- Central Generating Station
CPP	- Captive Power Plant
Cr	- Crores
EREB	- Eastern Region Electricity Board
ESO	- Energy Sent Out
FD	- Fixed Deposit
FI	- Financial Institutions
FRP	- Financial Restructuring Plan
FY	- Financial Year
GAAP	- Generally Accepted Accounting Principles
GFA	- Gross Fixed Assets
GOI	- Government of India
GOUP	- Government of Uttar Pradesh
GPF	- General Provident Fund
KESCO	- Kanpur Electricity Supply Company Limited
KV	- Kilo Volt
KW	- Kilo Watt
KWh	- Kilo Watt Hour
LF	- Load Factor
LT	- Low Tension
MoP	- Ministry of Power
MU	- Million Units
MW	- Mega Watt
NAPP	- Narora Atomic Power Plant
NHPC	- National Hydro Power Corporation
NPC	- Nuclear Power Corporation
NPCL	- Noida Power Corporation Limited
NTPC	- National Thermal Power Corporation
PF	- Provident Fund
PFC	- Power Finance Corporation
PNs	- Promissory Notes
PPA	- Power Purchase Agreement
PTW	- Private Tube Wells
R&M	- Repair & Maintenance
RAPP	- Rajasthan Atomic Power Plant
REA	- Regional Energy Accounts
REC	- Rural Electrification Corporation
SPA	- Special Purpose Advance
T&D	- Transmission & Distribution
UP	- Uttar Pradesh
UPCL	- Uttaranchal Power Corporation Limited
UPER Act	- Uttar Pradesh Electricity Reform Act 1999
UPERC	- Uttar Pradesh Electricity Regulatory Commission
UPJVNL	- Uttar Pradesh Jal Vidyut Nigam Limited
UPPCL	- Uttar Pradesh Power Corporation Limited
UPSEB	- Uttar Pradesh State Electricity Board
UPSIDC	- Uttar Pradesh State Industrial Development Corporation
WREB	- Western Region Electricity Board

Executive Summary:

- *This Aggregate Revenue Requirement and Tariff Petition for FY2009-10 is submitted before the UP Electricity Regulatory Commission in accordance with the section 62 of Electricity Act2003. The application has been prepared in accordance with the Term & conditions for Distribution Tariff Regulation 2006.*
- *The Retail Tariff across the DisComs has been kept same till the allocation of the PPAs among DisComs by GoUP. The Bulk Supply Tariff for DisCom is to be determined on the basis of pooled power purchase expense and energy delivered to DisCom. This methodology has been approved by the Commission in its previous order as such Petitioner has adopted the same in this Petition.*
- *The ARR include past performance analysis of tariff filing, status of directive issued by Commission, estimation of retail sales and revenue assessment at current tariff, revised Capital expenditure plan for current year and ensuing year. Estimation of Aggregate Revenue Requirement, revenue gap at current tariff and a proposed hike in Retail Tariff to meet out the revenue gap.*
- *The objective of the petitioner in this filing is to contain the expenses to a reasonable level to offset inflationary pressure prevailing in the market scenario thereby minimising burden of tariff increase on the consumers to the maximum possible extent.*
- *The Petitioner in the current and ensuing year has proposed to undertake major capital investment project for creating adequate capacity in the distribution network to match the demand growth. The petitioner has proposed a capital expenditure of Rs 873.81 Cr for FY2008-09 and Rs 849.92 Cr for FY2009-10. Detail of major capital investment plan is described in subsequent section with the proposed funding mechanism.*
- *The petitioner while estimating expenses for current & ensuing year has taken actual expenses incurred in previous years as per its audited /un audited balance sheet to derive the expenses at a reasonable level.*
- *The petitioner has endeavoured to control the employee expenses to maximum possible extent to offset inflation and keep the expenses to the approved level. However due to implementation of 6th pay commission, expenses are bound to increase. While projecting the expenses for ensuing year petitioner has adopted the same method to contain inflationary pressure and at the same time employees has been made accountable toward the consumer satisfaction and developmental works. Targets have been fixed for developmental work as well as retail business especially revenue realization and employees have been made responsible toward speedy redressal of consumers' problem.*

- *The petitioner while projecting A&G expenses for ensuing year has proposed a marginal increase in the A&G expenses to off-set inflationary pressure. However in real term it can be termed as reduction in expenses as expenses virtually remained at same level in spite of creation of additional Division & Circle in DisCom.*
- *The petitioner has projected R&M expenses for current year taking into account actual trends and for ensuing year R&M expenses has been estimated as per methodology adopted in previous years. The petitioner has tried to optimize the R&M expenses despite steep rise in input cost. The proactive preventive maintenance initiatives and capital expenditure under various schemes has been proposed for improvement in distribution network which would result in reduction in transformer failure ensuring, improvement in quality of supply and reduction in number of break down.*
- *The petitioner while estimating the sales demand for the current year and ensuing year has considered the trend in the previous year and current year. The category wise load growth and connected load factor has been used for projection of energy for most of the categories.*
- *The detail Aggregate Revenue Requirement and Tariff proposal for Dakshinanchal Vidyut Vitaran Nigam Limited, are presented for consideration and approval before the Hon'ble Commission in the following pages of the Petition.*
- *The Petitioner in this petition has proposed an average Tariff hike of about 21% in view to partially cover the Revenue Gap as most of the categories are billed below cost of service.*

1 Background

1.1 Rationale:

Section 64 of Electricity Act, 2003 mandates that an application for determination of tariff under Section 62 shall be made by a licensee, in this context the relevant section of the UPERC (Terms & Conditions for determination of Distribution Tariff) Regulation 2006 provide that the Distribution Licensee shall file the Aggregate Revenue Requirement (ARR)/Tariff petitions complete in all respect on or before 30th November of each year. The ARR petition shall contain the details of the estimated expenditure and the expected revenue that it may recover in the ensuing financial year at the prevailing tariff.

1.2 The Dakshinanchal Vidyut Vitaran Nigam Limited:

The Dakshinanchal Vidyut Vitaran Nigam Limited (hereinafter referred to as AGRA DisCom) is a company incorporated under the Companies Act, 1956 which is entrusted with the business of supply of electrical energy within the geographic area of Dakshinanchal in the State of Uttar Pradesh. AGRA DisCom is one of five successor companies to the erstwhile UPPCL licensee.

1.3 Issues arising from FY 2006-07 Tariff Order:

The Commission issued Tariff Order for FY 2006-07 on 10th May 2007. The Licensee filed a petition before the Commission seeking review of certain portion of FY 2006-07 Tariff Order. In this Tariff Order certain Tariff Category and provisions were against the interest of the Licensee.

The Licensee further filed an appeal with the Appellate Tribunal of Electricity of India on some of the issues which were held as not maintainable by the Commission. The appeal filed by the Licensee is still pending with ATE.

1.4 ARR FY 2007-08 & ARR FY 2008-09:

Dakshinanchal Vidyut Vitaran Nigam Ltd filed ARR and Tariff petition for FY 2007-08 on 4th October 2007 before the Hon'ble Commission under section 64 of the Electricity Act 2003 with Tariff proposal and a mechanism to bridge the revenue gap, further the Commission issued the directives to submit the ARR and Tariff application for FY 2008-09 along with the information\data of FY 2007-08 to restore the regulatory synchronism by 30th November 2007.

Dakshinanchal Vidyut Vitaran Nigam Ltd submitted on 19th December 2007, ARR/Tariff petition FY 2008-09 along with the FY 2007-08 data, in terms of Tariff Regulations 2006 without any Tariff hike for FY 2008-09.

The Commission admitted the petition filed by the Licensee on 25th January 2008 and directed the Licensees to advertise the salient features of ARR/Tariff petition in the leading circulated newspapers of the area of supply.

Comments of general public including electricity consumers on ARR/Tariff proposals were also invited. An advertisement in this regard appeared in five leading news papers on 31st January 2008.

The Commission conducted public hearing at Lucknow, Kanpur, Ghaziabad and Gorakhpur. Various stakeholders, industry associations and consumer forums participated in the public hearing and submitted their comments. The Commission issued a combine Tariff Order for FY 2007-08 & FY 2008-09 on 15th April 2008.

The structure of this submission is as follows:

Section 1. Background: This contains a brief background and rationale used for the submission; major issues that describe the structure of the submission.

Section 2. Performance Analysis of ARR FY08 & FY09 Filing: This includes:

- a) A review of FY 08 & FY 09 UPERC Tariff Order;
- b) Comparison of approved ,estimated cost and actual figures to-date
- c) An action plan undertaken by AGRA DisCom for various efficiency improvement measures.
- d) Investments detail plan.
- e) Compliance of Commission's directives.

Section 3. Load Forecast and Revenue Assessment: This includes actual sales for FY08 estimated FY09 and forecasts for FY10, both on a consolidated basis as well as for AGRA DisCom. This also includes actual billing determinants for base year FY08, estimated for FY09 and projected FY10 by consumer category. Forecast revenues for FY10 under existing tariff levels then calculated.

Section 4. ARR for Wheeling & Retail supply Business FY2009-10: This includes the ARR forecast for 2009-10, both on a consolidated basis and for AGRA DisCom. The consolidated ARR forecast provides the extent that the uniform state-wide tariffs need to increase on an average basis to meet consolidated costs. The ARR also includes the revenue gap figures for FY10 ARR.

Section 5. Bulk Supply Tariff. In this section Bulk Supply Tariff is derived for Distribution licensees.

Section 6. Tariff Design: This include proposed Tariff for Retail Supply business for FY 2009-10:

Annexure (A) Power Procurement Plan

2 Performance Analysis of FY 08 & FY 09:

As previously mentioned, this section contains the following:

- a)** Review of UPERC FY 08 & FY 09 Tariff Order;
- b)** Comparison of Approved items & Estimated/Actual updates
- c)** Investments detail plan.
- d)** Compliance of Commission's directives.

2.1 Review of UPERC FY 08 & FY 09 Tariff Order:

Dakshinanchal Vidyut Vitaran Nigam Ltd submitted ARR and Tariff petition for FY 2008-09 on 19th December, 2007 along with the information\data for FY 2007-08. This submission was in accordance with the methodology adopted in previous Tariff Order and in Terms & Conditions for determination of Distribution Tariff Regulation 2006. The ARR Petition submitted by the Licensee for FY 2007-08 was accompanied by a Tariff proposal along with the methodology for bridging the revenue Gap while the petition for FY 2008-09 was without any Tariff proposal.

UPERC issued a Joint Tariff Order for FY 2007-08 & 2008-09 on 15th April 2008 with an average Tariff hike of about 14%. In this Order Commission has introduced a new category of Tariff HV-1 for Public and Private Institutions having bulk load connected at 75 kW or above further a separate Sub-Tariff category under LMV-2 is introduced for Advertising hoarding/sign Post and additional charges on usage of air conditioners thereby Commission observed that Licensee may realize a sizeable revenue from non-essential luxurious consumptions. The actual effect of this, on category wise revenue computation may be available only after segregation of input data which is under compilation and will be available on electronic form from Divisional level.

Commission has directed the Licensees to expedite their case pending before Appellate Tribunal of Electricity. However the matter is regularly pursued by the Licensee in ATE.

Regarding performance improvement, it may be noted that Dakshinanchal Vidyut Vitaran Nigam Ltd, had registered notable improvement in almost all performance parameters, although not fully meeting the expectations of the Commission. It may be acknowledged that the pace of improvement has slowed down which could be attributed to the continuing load growth and inadequate generating capacity to meet this growth. The situation shall improve with availability of power from new forthcoming units of Sewa –II, (Hydro), Dadri Extension, Rosa (Thermal) and RAPP unit- V & Unit- VI of Generating Stations.

2.2 Comparison of Approved & Estimated items:

The aim of this section is to provide a comparison of pertinent items contained in the Tariff Order with the actual and estimated experienced to-date.

2.3 Sales Forecast – Tariff Order FY 08, ARR FY 08 & Actual FY 08:

Table 2-1 provides a summary of Sales figure for AGRA DisCom. In order to depict the trend in Sale growth of Tariff Order FY 08 & actual FY08 figures are given in addition to Petition values for FY 08.

Table 2-1: Approved and Actual Energy Sale FY 08: AGRA DisCom (MU)

Consumer Category	Tariff Order FY 2007-08 (a)	Petition FY 2007-08 (b)	Actual FY 2007-08 (c)	Difference =(c-a)/a
LMV-1: Domestic Light, Fan & Power	3247	2877	2917	-11%
LMV-2: Non Domestic Light, Fan & Power	728	643	604	-4%
LMV-3: Public Lamps	87	112	70	-20%
LMV-4: Insitutions	430	390	321	-25%
LMV-5: Private Tube Wells	1224	888	1114	-9%
LMV 6: Small and Medium Power	514	469	523	2%
LMV-7: Public Water Works	209	210	178	-15%
LMV-8: State Tubewells and Pumped Canals	377	337	247	-35%
LMV-9: Temporary Supply	25	22	10	-60%
LMV-10: Departmental Emp. & Pensioners	32	29	31	-5%
HV-2: Large and Heavy Power	1263	997	1288	2%
HV-3: Railway Traction	276	227	301	9%
HV-4: Lift Irrigation Works	106	75	87	-18%
Sub Total	8518	7276	7691	-10%
Bulk & Extra State	2635	2852	2734	4%
AGRA DisCom	11153	10128	10425	-7%

Table 2-2 provides the same information on a consolidated basis as AGRA DisCom with the specific data above.

Table 2-2: Approved and Actual Energy Sale FY 08: Consolidated DisCom (MU)

Consumer Category	Tariff Order FY 2007-08 (a)	Petition FY 2007-08 (b)	Actual FY 2007-08 (c)	Difference =(c-a)/a
LMV-1: Domestic Light, Fan & Power	15850	15087	13449	-18%
LMV-2: Non Domestic Light, Fan & Power	3043	2399	2601	-3%
LMV-3: Public Lamps	442	485	422	-4%
LMV-4: Insitutions	1795	1783	1461	-19%
LMV-5: Private Tube Wells	4531	3855	4317	-5%
LMV 6: Small and Medium Power	1975	1791	1866	-5%
LMV-7: Public Water Works	873	797	741	-15%
LMV-8: State Tubewells and Pumped Canals	1789	1749	1311	-27%
LMV-9: Temporary Supply	74	65	40	-46%
LMV-10: Departmental Emp. & Pensioners	144	138	149	4%
HV-2: Large and Heavy Power	6775	5750	6431	-5%
HV-3: Railway Traction	754	648	653	-13%
HV-4: Lift Irrigation Works	665	535	558	-16%
Sub Total	38709	35082	34000	-12%
Bulk & Extra State	3037	3289	3096	2%
Consolidated DisCom	41745	38371	37097	-11%

2.3.1 Sales Forecast – Tariff Order FY 09, ARR FY 09 & Estimated FY 09:

Table 2-3 provides a summary of Sales figure for AGRA DisCom. In order to depict the trend in Sale growth of Tariff Order FY 09 & actual FY09 figures are given in addition to Petition values for FY09.

Table 2-3: Approved and Estimated Energy Sale FY 09: AGRA DisCom (MU)

Consumer Category	Tariff Order FY 2008-09 (a)	Petition FY 2008-09 (b)	Estimated FY 2008-09 (c)	Difference =(c-a)/a
LMV-1: Domestic Light, Fan & Power	3520	3254	3221	-9%
LMV-2: Non Domestic Light, Fan & Power	765	640	599	-5%
LMV-3: Public Lamps	93	94	82	-12%
LMV-4: Institutions	463	445	308	-33%
LMV-5: Private Tube Wells	1235	1116	1434	16%
LMV-6: Small and Medium Power	511	521	607	19%
LMV-7: Public Water Works	213	196	176	-17%
LMV-8: State Tubewells and Pumped Canals	387	354	377	-3%
LMV-9: Temporary Supply	26	27	13	-52%
LMV-10: Departmental Emp. & Pensioners	32	31	128	300%
HV-2: Large and Heavy Power	1294	1142	1521	18%
HV-3: Railway Traction	265	246	198	-25%
HV-4: Lift Irrigation Works	111	84	83	-26%
Sub Total	8915	8149	8745	-2%
Bulk & Extra State	2764	2938	2641.933	-4%
AGRA DisCom	11679	11087	11387	-2%

Table 2-4 provides the same information on a consolidated basis as with the AGRA DisCom specific data above.

Table 2-4: Approved and Estimated Energy Sale FY 09: Consolidated DisCom (MU)

Consumer Category	Tariff Order FY 2008-09 (a)	Petition FY 2008-09 (b)	Estimated FY 2008-09 (c)	Difference =(c-a)/a
LMV-1: Domestic Light, Fan & Power	16609	16590	14511	-14%
LMV-2: Non Domestic Light, Fan & Power	3144	2725	2650	-3%
LMV-3: Public Lamps	446	486	512	15%
LMV-4: Institutions	1912	1874	1349	-29%
LMV-5: Private Tube Wells	4496	4436	4654	4%
LMV-6: Small and Medium Power	1991	2066	2104	6%
LMV-7: Public Water Works	903	807	787	-13%
LMV-8: State Tubewells and Pumped Canals	1798	1716	1586	-12%
LMV-9: Temporary Supply	78	71	42	-46%
LMV-10: Departmental Emp. & Pensioners	145	145	379	161%
HV-2: Large and Heavy Power	7049	6418	7459	6%
HV-3: Railway Traction	734	661	614	
HV-4: Lift Irrigation Works	683	542	602	-12%
Sub Total	39988	38539	37247	-7%
Bulk & Extra State	3166	3457	3010	-5%
Consolidated DisCom	43154	41996	40258	-7%

Table 2-5 summarizes the results of hour of supply to different category consumers. In this table the average supply hours are from feeders supplying various types of communities/area i.e. Tehsil, District, Commissioner, Mahanagar, Majorcities Bundelkhand.

Table 2-5: Supply Hours Summary: FY 2006 - FY 2009

Area of Supply		2006	2007	2008	2009
		Hours of Service			
All	Rural	11.25	13.21	12.8	11.4
Tehsil	Urban	11.25	13.21	12.8	11.4
District	Urban	16.09	17.18	16.0	16.5
Commissionary	Urban	17.13	19.03	18.6	18.6
Maha Nagar	Urban	21.47	22.16	20.3	20.4
Industrial(5 MvA)	Urban	23.29	23.23	23.5	23.2
Bundelkhand	Urban	15.02	16.47	17.4	16.3

Local Interruptions not included

Source: Flash Report Feb 2009

In FY09 Tariff petitions, a supply hour function was included in the load forecasting methodology that derived energy consumption as a function of supply hours. This function was, to some extent, based on an estimated relationship between supply hours and consumption for rural un-metered customers. For FY10, this relationship has been refined based on the rostering schedule applicable to various rural feeders.

2.3.2 FY 08 Approved and Actual FY 08 Expense items:

Tables 2-6 and 2-7 provide a comparative summary of expense items of Tariff Order FY 08 and Actual FY 08 for AGRA DisCom and Consolidated DisCom respectively.

Table 2-6: Approved and Actual Expenses FY 08: AGRA DisCom

Expense Items (Rs.Cr)	FY 2007-08 Tariff Order	FY 2007-08 Actual	Difference
Power Purchase expenses	3323	3271	2%
Transmission charges	269	285	-6%
Employee cost	160	148	8%
A&G expenses	26	32	-20%
R&M expenses	51	95	-85%
Interest charges	190	170	10%
Depriciation	202	154	23%
Provision for Bad and Doubtful Debts	0	19	
Gross Expenditure	4222	4174	1%
Expenses capitalisation			
<i>Employee cost capitalised</i>	24	50	-107%
<i>Interest capitalised</i>	17	22	-28%
<i>A&G expenses capitalised</i>	4	8	-91%
Net expenditure	4177	4095	2%

Table 2-7: Approved and Actual Expenses FY 08: Consolidated DisCom

Expense Items (Rs.Cr)	FY 2007-08 Tariff Order	FY 2007-08 Actual	Difference
Power Purchase expenses	12676	11824	7%
Transmission charges	1025	1038	-1%
Employee cost	811	778	4%
A&G expenses	112	100	11%
R&M expenses	248	340	-37%
Interest charges	724	668	8%
Depreciation	942	646	31%
Provision for Bad and Doubtful Debts	0	66	
Gross Expenditure	16539	15460	7%
Expenses capitalisation			
<i>Employee cost capitalised</i>	122	176	-45%
<i>Interest capitalised</i>	69	60	13%
<i>A&G expenses capitalised</i>	17	25	-47%
Net expenditure	16332	15199	7%

2.3.3 FY 09 Approved and FY 09 Estimated Expenses items:

Tables 2-8 and 2-9 provide a comparative summary of expense items of Tariff Order FY 09 and Estimated FY 09 for AGRA DisCom and Consolidated DisCom respectively

Table 2-8: Approved and Estimated Expenses FY 09: AGRA DisCom

Expense Items (Rs.Cr)	FY 2008-09 Tariff Order	FY 2008-09 Estimated	Difference
Power Purchase expenses	3634	3975	-9%
Transmission charges	317	311	2%
Employee cost	172	168	2%
A&G expenses	28	34	-20%
R&M expenses	55	98	-77%
Interest charges	188	308	-64%
Depreciation	230	190	18%
Provision for Bad and Doubtful Debts	0	43	
Gross Expenditure	4625	5127	-11%
Expenses capitalisation			
<i>Employee cost capitalised</i>	26	25	2%
<i>Interest capitalised</i>	22	27	-26%
<i>A&G expenses capitalised</i>	4	5	-20%
Net expenditure	4573	5069	-11%

Table 2-9: Approved and Estimated Expenses FY 09: Consolidated DisCom

Expense Items (Rs.Cr)	FY 2008-09 Tariff Order	FY 2008-09 Estimated	Difference
Power Purchase expenses	13686	14560	-6%
Transmission charges	1195	1138	5%
Employee cost	867	902	-4%
A&G expenses	120	121	-1%
R&M expenses	265	442	-67%
Interest charges	719	1221	-70%
Depriciation	1062	861	19%
Provision for Bad and Doubtful Debts	0	138	
Gross Expenditure	17915	19383	-8%
Expenses capitalisation			
<i>Employee cost capitalised</i>	130	135	-4%
<i>Interest capitalised</i>	88	85	3%
<i>A&G expenses capitalised</i>	18	18	-1%
Net expenditure	17679	19144	-8%

2.3.4 Distribution losses:

The Commission had set a Distribution Loss target of 23.4% for Consolidated DisCom for FY 2008 & FY 2009 .In FY 2008, beside all out efforts Petitioner could not achieve Targets set by the Commission but it is worth mentioning that in FY 2008-09 Petitioner has nearly achieved the Target. For FY 2009-10 Petitioner on consolidated basis has set a target of reducing in loss level by 2%.

2.3.5 Efficiency Improvement Activities being undertaken:-

1. Collection efficiency is one of the major areas of concern for petitioners as it impacts the amount of receivables against supply of power. Therefore to increase the revenue collection from rural areas, collection based franchises have been appointed & for urban area input based franchise system is being implemented. Pperformance of these initiatives has been found satisfactory for rural areas.
2. For proper accounting of energy & reducing chances of theft, double metering system is being implemented & thus yielding encouraging results.
3. For speedy redressal of consumer grievances, call centre has been established at Lucknow, and Control rooms have been set up in all major cities& DisCom HQ.
4. In all theft prone areas overhead conductor are being replaced with ABC (Arial Bunch Conductor) .This helps in reduction of line loses and break

down which ultimately result in increase quality of supply & consumer satisfaction .This ultimately enhance revenue of the Petitioner.

5. Special drives for detecting theft of energy are being conducted regularly.
6. Special drive to check the cases of theft/unauthorized use of electricity/checking of excess load being carried out in different districts of by sending teams of officers from DVVNL/UPPCL.
7. Special camps are organized to collect bill amount from the consumers and to solve their problems on the spot.
8. Regularization of illegal connections and ledgerisation of unledgerised connections is being monitored.
9. Special team of headquarter Engineers and Vigilance teams comprising of DVVNL, officers and Police personnel's have been formed in each zone. With these teams surprise raids are conducted to direct theft of energy/Katiya connections.
10. Through APDRP scheme, system improvement is being done in different districts of Dakshinanchal Vidyut Vitaran Nigam Limited.
11. NA/NR/IDF/ADF meters are being monitored and defective meters are being changed. Timely efforts are being made to install meters on all distribution transformers.
12. Works of hand held billing, disconnections and reconnection works are being done with the help of external agencies.
13. Shifting of over head cables to underground laying.

2.3.6 Capital Expenditure Plan:

Large investments have been planned in order to reduce T&D losses, maintaining reliable supply and to achieve rural electrification targets. In the past the desired results could not be obtained due to severe fund constraints. To achieve the desired objective an aggressive investment plan has been envisaged. Therefore the capital expenditure schemes are divided into two categories namely, Government Schemes and Schemes funded from financial institutions. The State Government is primarily providing funds for implementing schemes of rural electrification. The various schemes under which the capital expenditure programs are envisaged are detailed below:

I. Ambedkar Gram Sabha Vikas Yojana:

This scheme has been envisaged by the State Government with a view to achieve 100% rural electrification in the State. Under this scheme some majras of each Gram Sabha are selected each year for electrification. For FY2009-10 a target of 771 no of villages has been proposed for electrification under AGRA DisCom.

II. Rural Electrification Programme - RGGVY

Rural Electrification Program- RGGVY contemplates electrification of villages and strengthening the existing network in the rural areas to achieve universal access to electricity for all households. Under this scheme following work is performed:

- Electrification of un-electrified hamlets
- Strengthening of Distribution system under RGGVY for providing electricity to all BPL household
- Electrification of the villages electrified as per CEA
- Conversion of villages/hamlets electrified from LT mains to HVDS
- Providing electricity to all rural households including free connection to BPL households
- Strengthening of Rural electricity Distribution backbone
- Electrification of remote villages (Stand alone)

Under the RGGVY programme the central government provides a grant of 90% of the project cost for each scheme of village electrification and the balance 10% of the fund is provided by the State Government. However, the GoUP provides the entire fund required for schemes under the RGGVY programme in the form of equity to the DisCom

III. Energisation of Private Tube Wells (PTW).

To cope with the growing demand of agriculture in the State, the electrification of private tube wells has always been of much importance. A target of energisation of 5000 PTW has been fixed for the year 2009-10 for AGRA DisCom.

IV. Other Schemes

A large part of the distribution network is very old and needs major overhauling or replacement. Petitioner has identified some major assets that are in dire need of replacement. Major items covered under the requirement of replacement are poles, overhead conductors, wires, and switchgears.

Apart from replacement of the old and dilapidated assets there are ongoing requirement of network and infrastructure augmentation to cater to the load growth occurring due to regular increase in load in existing set-up as well as due to large-scale electrification of rural areas. Also, there is a significant requirement of improving the systems and processes of the distribution business of the petitioner to achieve better efficiency of

operations, e.g. billing accuracy and procedure, material and financial management etc. Therefore the petitioner has also planned to invest significantly in IT systems for achieving such objectives.

V. Replacement and Strengthening of worn-out poles and conductors

In the distribution area large scale replacement of worn out poles and conductors are urgently needed. Under this scheme about 9700 km of worn out conductors and around 56900 no damaged poles have been planned to be replaced during FY 2009-10. This is important for reducing losses and in reduction of occurrence of accidents. DisCom wise detail is provided in following table:

Table 2-10: Replacement Plan (Poles & Conductor)

Replacement of Poles		FY 2008-09	FY 2009-10
Meerut	No.	9000	9300
Agra	No.	14000	14500
Lucknow	No.	14000	14500
Varanasi	No.	18000	18600
Replacement of conductors			
Meerut	Km	1,700.00	1,700.00
Agra	Km	2,500.00	2,500.00
Lucknow	Km	2,500.00	2,500.00
Varanasi	Km	3,000.00	3,000.00

VI. Replacement of Switchgears

The switchgears installed at most of the 33/11kV substations also needs replacement. For the first time Petitioner has started to replace the old switchgears, which have lived beyond their economic life and needs replacement. These replacements are necessary to ensure safety and proper operation of protection systems. In the current year FY 2008-09 it has been planned to replace about 20% of the switchgear in the distribution system of the State. Thereafter, on a continual basis the petitioner plans to replace all the old switchgears of the systems in a phased manner. For the current year as well as for ensuing year DisCom wise detail of plan has been provided below:

Table 2-11: Replacement Plan (Old Switchgears)

Replacement of old switchgears	FY 2008-09		FY 2009-10	
	Nos	Rs Cr	Nos	Rs Cr
Meerut	500	32.50	300	21.45
Agra	360	23.40	200	14.30
Lucknow	360	23.40	200	14.30
Varanasi	440	28.60	100	7.15

VII. Augmentation of Distribution Network

For any distribution system it is important to augment the network on a continual basis to cater to the load growth and achieving optimal operating efficiency of the distribution equipment. With the increasing demand of power and to balance the load distribution, an investment of Rs 306.39cr has been planned on Consolidated DisCom basis for creation of new 33/11kV substations in the current year FY 2008-09. Further Rs 955.90 Cr has been estimated on consolidated basis for addition of new substations and corresponding networks for FY2009-10 to cater estimated load growth of each of the DisCom

VIII. Bifurcation of Industrial Feeders

At present most of the industrial consumers and consumers of other categories are connected to the same feeder. To ensure uninterrupted supply to consumers and better energy auditing, the petitioner has planned to segregate the industrial consumer feeders & PTW consumers from other category consumers. An investment of Rs 89.04 crore has been planned in FY 08-09 for Consolidated DisCom basis, which envisages separation of 11kV feeders. For FY2009-10 Rs 180.73 Cr has been planned.

IX. Metering of Consumers

Large numbers of meters are required for providing new connections as well as for replacement of defective meters for effective energy accounting .At present large section of the consumers are not correctly metered due to defective metering .This need immediate replacement. Further rural consumers have largely been un-metered and even amongst urban consumers there are several defective meters. Presently the Petitioner is releasing all the new connections with meter. In ensuing year (FY 2009-10) there is a plan to install about 9.84 lakh single phase meters and about 1800 three phase meters (including replacement of defective meters) on Consolidated DisCom basis . For current year this envisages an investment of Rs. 56.84 crore and the procurement process has already been initiated.

X. Installation of Arial Bunched Conductor

Unauthorized consumption of electricity is the most important area of concern for the petitioner. The major component of losses in distribution is commercial losses, which is primarily due to theft. In order to reduce the same the existing over head lines are envisaged to be replaced by Arial Bunched Conductors (ABC) which is less prone to theft. In 2009-09, DisCom have planned an investment of Rs. 281.23 crore. & for FY2009-10 Rs 734.82 Cr has been planned by way of equity from Go UP and loan from financial institution. Further this scheme has been planned to continue in future also for further increasing the reach of ABC to reduce theft

XI. Metering of Distribution Transformer

The metering at distribution transformer level is an important tool for energy auditing. The DisComs have planned to cover 47028 distribution transformers in the first phase under this program. In this first phase the plan will be introduced in a composite manner for selected districts and thereafter it will be rolled out in other area. During 2008-09 investment of Rs. 264.63 crore is planned for metering of Distribution Transformers

XII. Information Technology

UPPCL DisComs are now planning to use various Information Technology (IT) initiatives to drive operational efficiency improvement. UPPCL DisComs has accordingly estimated an investment of Rs 29.30 cr in FY2008-09 and Rs 117.20 crore in FY 2009-10 in IT implementation. This budget is primarily for:

- Implementation of software solutions
- Hardware to support the software
- Networking (both Local Area Network and Wide Area network)
- IT Services (support to run the IT system)

IT solutions are urgently required in following area:

- Billing and Revenue Collection (Retail Billing Solution):
- Finance and Accounts
- Material Management
- Energy Billing System
- Energy Accounting System

2.3.7 R E works under RGGVY Program:

RE work under RGGVY programme contemplates creation of rural infrastructure, electrification of rural household and hamlets. The scheme is to be implemented through funds from GoUP as equity. The scheme provides for free of cost connection to all rural households living below poverty line, for which GOI will provide grant. Objective of this program are as under:-

- To extend supply to all villages and hamlets.
- Intensive electrification of already electrified areas.

Progress under this scheme up to 31-03-09 is tabulated as under:

Table 2-12: Status of Rajiv Gandhi Gramin Vidhutikaran Yojna:

STATUS OF RAJEEV GANDHI GRAMIN VIDYUTIKARAN YOJNA																				
DVVNL																				
AGRA DisCom																				
Sl. No.	Name of Distt./Discom	Scheme Code No.	Village Electrification						Gram Pradhan Cert. obtained	B.P.L. connections released		New Sub-station construction		Substation Augmentation		Financial Progress (Rs. In Crore)		Total No. of villages		
			No. of villages As per revised sanctions by REC	VEI created during 05-08	Year 08-09		Total VEI created during 05-09	%age VEI created w.r.t. target		Target	Progress	Target	Work complete	Target	Work complete	Funds available	Prog. Expend	Inspected by Third Party	Energised	Handedover
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Aligarh	790035	320	334	0	0	334	104.38	330	6230	6624	5	5	14	11	34.95	37.90	318	334	334
2	Hathras	790041	147	105	10	10	115	78.23	115	1794	2216	2	2	0	0	11.42	11.76	136	115	115
3	Mathura	790039	29	29	0	0	29	100.00	29	526	707	1	1	0	3	3.02	3.67	29	29	29
4	Agra	790034	141	139	0	0	139	98.58	139	3326	4112	1	1	4	4	14.27	14.25	141	139	139
5	Farrukhabad	790048	513	323	0	0	323	62.96	323	8638	8638	3	2	9	6	30.20	30.25	333	323	323
6	Kannauj	790038	387	244	0	0	244	63.05	244	3344	5420	2	2	0	0	36.51	34.00	244	242	242
7	Etawah	790043	216	207	0	0	207	95.83	207	11855	5909	0	2	0	4	12.87	10.73	199	207	207
8	Auraya	790042	305	292	0	0	292	95.74	292	14458	11376	4	2	7	3	32.03	36.01	308	292	292
9	Firozabad	790045	324	259	10	10	269	83.02	260	6539	6665	5	2	5	5	26.91	29.83	233	221	221
10	Mainpuri	790044	310	278	1	1	279	90.00	258	16715	9725	3	1	0	0	36.64	26.15	222	145	145
11	Etah	790040	751	705	36	36	741	98.67	654	21373	9100	3	1	16	15	46.91	48.86	619	525	525
12	Kanpur Ngr.	790037	156	153	3	3	156	100.00	156	1352	3554	2	2	0	0	18.19		156	147	147
13	Kanpur Dehat	790036	319	321	13	13	334	104.70	334	12781	10256	3	2	0	0	22.19	39.75	253	303	303
14	Jhansi	790046	188	184	1	1	185	98.40	175	1554	3716	1	1	2	2	19.32	17.63	188	154	154
15	Lalitpur	790047	275	270	4	0	270	98.18	251	7346	4149	3	1	1	1	22.54	34.20	276	243	243
16	Jalaun	790049	111	110	0	0	110	99.10	110	835	1885	1	1	4	4	20.89	15.68	111	109	109
17	Hamirpur	790050	165	147	0	0	147	89.09	120	1407	1802	1	1	3	3	15.48	19.37	154	88	88
18	Mahoba	790051	193	191	2	2	193	100.00	185	2920	2350	2	0	1	2	23.28	24.16	192	161	161
19	Banda	790052	150	135	9	9	144	96.00	115	3078	3078	2	1	0	0	18.12	14.04	126	112	112
20	Chitrakoot	790053	238	217	0	0	217	91.18	80	6128	3959	3	1	5	5	29.45	24.67	217	146	146
Total			5238	4643	89	85	4728	90.26	4377	132199	105241	47	31	71	68	475.19	472.91	4455	4035	4035

2.3.8 Accelerated Power Development & Reform Program (APDRP):

APDRP program broadly envisages up- gradation & strengthening of Distribution System including sub-transmission network with the objective to reduce AT&C losses, improving customer satisfaction & increasing reliability and quality of power supply. This will also cater increasing demand of various categories of consumer. Status report under this scheme are tabulated as below:

Table 2-13: AGRA DisCom detailed Progress under APDRP:-

Electrification of Urban Areas under Accelerated Power Development & Reform Programme (APDRP): Rs Cr.

PROJECTS UNDER APDRP**STATUS AS ON (28.02.2009)**

SL No	DisCom	NO of Project Sanction	Project Sanction Cost (Rs. Cr.)	Revised Sanctioned Cost (Rs. Cr.)	Agreement Amount (Rs.Cr.)	Amount Available	Expenditure	Expenditure upto 31-03-08
4	AGRA	11	306.43	513.75	341.39	349.43	308.82	298.16

Table 2-14: Villages to be Electrified under Dr. Ambedkar Gram Sabha Vikas Yojna FY 2009-10

**Villages to be Electrified under Dr Ambedkar Gram Sabha Vikas Yojna
FY 2009-10**

District/ Zone	Total No. of Dr. Ambedkar Gramsabha	No. of Dr. Ambedkar Gramsabha previously saturated by this scheme	No. Of Dr. Ambedkar Gramsabha in which work expected	Total Physical Work
Agra	58	0	58	58
Mainpuri	44	6	38	38
Mathura	41	0	41	41
Firozabad	37	0	37	37
Zone : Agra	180	6	174	174
Aligarh	63	0	63	63
Mahamayanagar	36	0	36	36
Etah	44	0	44	44
Kanshiram Nagar	35	0	35	35
Zone : Aligarh	178	0	178	178
Jhansi	30	0	30	30
Jalaun	40	0	40	40
Lalitpur	20	0	20	20
Zone : Jhansi	90	0	90	90
Banda	39	0	39	39
Hamirpur	28	0	28	28
Chitrakoot	21	0	21	21
Mahoba	21	0	21	21
Zone ; Chitrakoot	109	0	109	109
Kanpur Nagar	38	0	38	38
Kanpur Dehat	42	0	42	42
Etawah	37	0	37	37
Auraia	33	0	33	33
Farrukhabad	38	0	38	38
Kannauj	32	0	32	32
Zone : Kanpur	220	0	220	220
Total of DisCom	777	6	771	771

2.4 Compliance with UPERC Directives:

The Commission had issued a number of directives to the Utilities in Tariff order FY 08 & FY 09 with the objective of attaining operational efficiency and streamlines the flow of information, which would be beneficial for the sector both in short term and long term. The Licensee is submitting the compliances in the following Table:-

Table 2-15: Compliance of UPERC Directives:

Sr No	Ref. No.	Description of Directive for DisComs	Time Period for compliance	Action Taken
1	1.2.7	The Commission directs the utilities to file the application for fresh licenses for newly formed entities.	1 Month	Applications for fresh License has been filled.
2	1.2.7	UPPCL had informed to the Commission that by March end the transfer scheme would be notified by Government of U.P. However in absence of any submission, Commission directs UPPTCL and UPPCL to get the issue resolved expeditiously through pro-active interaction with the State Government	Status report to be given with in 1 Month	UPPTCL will file license application after notification of Transfer Scheme. Action in this matter is in progress and transfer scheme will be notified soon.
3	1.2.7	The Commission directs UPPCL to provide status and also the timeframe within which the entire activity of allocation of the PPAs to DisComs would be completed	1 Month	Action is being taken to decide the criteria for allocation of PPA for all DisComs.
4	1.2.7	The Commission also directs UPPCL to submit the status of implementation of the Intra-State ABT system within the state in line with the directives of the Commission and the timeframe for implementing the same.	1 Month	Implementation of intrastate ABT system with in the state in line with directive with the commission is under progress. Detail status report shall be submitted soon.
5	1.2.7	The utilities are directed to update the Commission on the status of the appeal filed against tariff order for FY 2006-07 before the Appellate Tribunal of India and expedite the resolution of the case.	Every Month	The matter is still pending in the Appellate Tribunal and has yet not decided.
6	2.4.9.1	The Commission directs the licensees to henceforth report the status of compliance for all the directives on a monthly	Every Month	Action has already been taken in this matter.

Sr No	Ref. No.	Description of Directive for DisComs	Time Period for compliance	Action Taken
		basis to the Commission.		
7	4.5.4	The Commission directs the licensee to explore the innovative modes of payment at least in the cities having population of more than 10 lacs. Further the licensee shall keep the Commission updated about the progress on a quarterly basis.	Every Quarter	Handheld billing has been implemented in AGRA and other cities of DVVNL. Results of this scheme are quite encouraging. Beside this, efforts are being made to deposit electricity bills through bank. An agreement has been signed for automatic meter reading. This work will be completed in four months. Initial dialogues are in progress with the agencies for pre-paid meters and proposals are being studied. Facility of drop-boxes is being arranged for collecting payment through cheques. In addition to this agencies entrusted with hand held billing work have been authorized to collect the payment through cheque.
8	4.7.8	The licensees are directed to submit the monthly progress report on implementation of the scheme devised in the tariff order of FY 2006-07 linked with reduction of losses at transformer level.	Every Month	D.T. Metering is being carried out in all distribution Zones of DVVNL and the work is in progress. Laying of 1615 KM AB Conductor is in progress. Capacity of overload distribution transformers is being increased.
9	4.9.4	The Commission directs licensees to submit the amount of security deposit adjusted in April 2007 and April 2008 against each category and for each Discom/licensee within 3 months from the date of issue of this tariff order.	3 Months	All field units have already been instructed to implement with the directive in later and sprit and progress is being submitted as per directive.
10	4.13.4	The Commission directs the licensees to submit the consumption history of off-peak and peak period for HV-2 category of consumers for FY 2006-07 and FY 2007-08 to assess the revenue impact of the pplication of TOD rates	2 Months	To calculate the energy consumption, TOD metering for off peak and peak periods is being done for all HV-2 consumers and accordingly revenue is assessed and realized.
11	4.17.2	The Commission directs the licensees to comply with the previous year tariff order directive and submit	1 Month	Load to all Arc & Induction furnaces is being sanctioned and released @ 500KVA/Ton and according to the capacity of the furnace.

Sr No	Ref. No.	Description of Directive for DisComs	Time Period for compliance	Action Taken
		study report on load requirement per tonne in case of Arc & Induction furnace within one month from the date of the tariff order.		
12	4.17.8	The Commission directs the licensees to submit the report on cost of service as specified in section 6.3 of Distribution Tariff Regulations 2006 along within three months from the date of tariff order.	3 Months	Though level of accuracy vis-à-vis cost of service is still not up to the mark how ever proposed tariff is by and large reflective of cost of service for all categories except those who are being compensated by Govt. subsidy.
13	5.4.6	The Commission directs the licensees to carry out the energy audit / estimation study with voltage wise break up of distribution losses into technical loss and commercial loss. Further the Licensees should intimate the Commission within 2 months from the date of issue of the tariff order with regards to the progress on the study to be undertaken in terms of the finalised scope of work, whether the study is being undertaken departmentally or help of some experts in the field is being availed, the methodology being adopted for undertaking the study, etc.	6 Months Status Report within 2 Months	Energy accounting work is in progress. Field officers have been asked to furnish all relevant information in this regard and will be submitted to the Commission.
00 14	5.4.7	The Licensees are directed to report the status of the metering along with the proposed plan to undertake the metering for the remaining T<>D interface points as well as distribution transformers and feeders. The licensees shall also report the status of the progress on this front to the Commission on a monthly basis along with reasons for deviation from the plan, if any.	Every Month	Energy meters at all transmission sub-stations are in working order and energy sent to distribution is correctly measured from them. A detailed scheme for correct metering has been planned by mounting outdoor CT/PT on double poles of 33KV incoming and 11KV outgoing feeders of distribution wing. Under this scheme, metering on 33 and 11 KV industrial feeders is almost complete.

Sr No	Ref. No.	Description of Directive for DisComs	Time Period for compliance	Action Taken
15	5.10.5.7	The Commission directs the licensees to submit the study report on actuarial valuation for the purpose of estimating employer's contribution towards pension and gratuity. The licensees are also directed to intimate the Commission on the status of the study within a period of one month from the date of issue of Tariff Order	6 Months Status Report within 1 Month	Action is being taken by U.P. Power Corporation Ltd. Lucknow.
16	5.10.9.3	The Commission directs the Licensees to carry out a proper cost benefit analysis before taking up any new initiatives and submit the same for the approval to the Commission.	As and when Required.	Action being taken as per commission directive.
17	5.11.18	The Commission directs the licensees to submit the investment plan for next year filing strictly in accordance with Distribution Tariff Regulation failing which no investments would be approved	Next Year Filing	Proposal for Five year Business Plan (2008-09 to 2012-13) is submitted to UPPCL, and is under active consideration for acceptance. The commission will be informed after final decision on investment proposals is made.
18	5.11.18	The Commission directs the licensees to submit the necessary information for investments approved for FY 2007-08 & FY 2008-09 as per the Distribution Tariff Regulations within two month from the issue of this tariff order,	2 Month	As above.
19	5.12.7	The Commission directs the licensees to maintain proper and detailed fixed assets registers at field offices to work out the depreciation expense as	2 Months	Instructions have already been issued to all field units and action as per commission directive is being taken.

Sr No	Ref. No.	Description of Directive for DisComs	Time Period for compliance	Action Taken
		specified in the UPERC (Terms and Conditions of Distribution Tariff) Regulations, 2006 and directs the Licensees to submit a report to the Commission citing clearly as to how they are maintaining fixed assets registers for the various assets.		
20	5.14.7	The Commission directs the licensees to form a clear policy for writing off bad-debts as defined in UPERC (Terms and Conditions of Distribution Tariff) Regulations, 2006.	Next Year Filing	Scheme for Writing off the bad debt:- 1. Identify the consumers in all categories who have not paid their electricity dues/arrears for last 10 years. 2. Direct field officers to inspect the premises of such identified consumers in order to assess the actual position/consumption and take suitable action for realization/permanent disconnection. 3. After serving notices under Section-3 and Section-5 to consumer of different categories, if the consumer shifts the premises, or goes somewhere else so that he is not traceable and notice is returned unserved, a list of all such consumers is prepared and amount of bad debt is calculated. Action for Writing off such bad debt should be initiated.
21	5.20.7	The Commission directs the licensees to submit the methodology and formula for automatic recovery of fuel cost changes for Commission's approval.	2 Month	Methodology and formula for automatic recovery of fuel cost variation shall be submitted shortly for commission's approval.
22	5.23.5	The commission directs the licensees to submit the expenses with a proportionate allocation towards wheeling and retail supply business for FY 2008-09	Next Year Filing	Expenses with proportionate allocation for wheeling and retail supply business are being submitted separately.
23	9 (b) Rate Schedule	The Commission has directed the licensees to submit a methodology for determination of losses on distribution transformer and billing of such consumers to the	1 Month	D.T.Metering work is in progress and is expected to be completed soon. Scheme of Indexing of L.T. feeder wise consumers is being formulated. After completing the D.T. Metering and consumer indexing work, the difference in energy dispatched to the transformer energy

Sr No	Ref. No.	Description of Directive for DisComs	Time Period for compliance	Action Taken
		Commission for approval within a period of one month from the date of issue of the tariff order.		consumed by the consumers fed with the transformer will be calculated. Reasons of difference will be find out and the responsibility will be fixed to concerned officers and officials.
24	15 Rate Schedule	<p>The Commission directs the licensees to introduce prepaid meters on all government connections with loads below 45 kW and for loads above 45 kW, the licensees are directed to install automatic meter reading systems. Licensee would need to develop the necessary infrastructure and introduce the pre-paid meters within a time frame of 6 months from the date of issue of this Tariff Order. The Commission directs the licensees to submit a bi-monthly progress report in this regards.</p>	6 Months Bi-monthly progress report to be submitted.	Scheme of Installation of Pre Paid meters is under consideration with service providers/consultants. At present automatic meter reading work of consumers of 100 KVA and above is in progress and is expected to be completed in four months.
25	HV-2 Rate Schedule pt 3 (c)	The Commission directs the licensees to shift the metering arrangement of HV-2 consumers with metering at 0.4 kV to HV side within three months of issuance of this order.	3 Months	Field officers have been directed to arrange metering of HV-2 category on 0.4KV. The work is in progress and expected to be completed by March, 09.
26		The Commission directs the licensee to establish and earmark funds for consumer education and awareness. The details about the scope of activities to be taken under this initiative may be submitted to the Commission within three months from the date of issue of the tariff order.	3 Months	To increase the awareness of the consumers by publicity through different mediums and arranging special workshops once in three months, 1% of the revenue realized in each distribution circle is being allotted.

3 Load Forecast and Revenue Assessment:

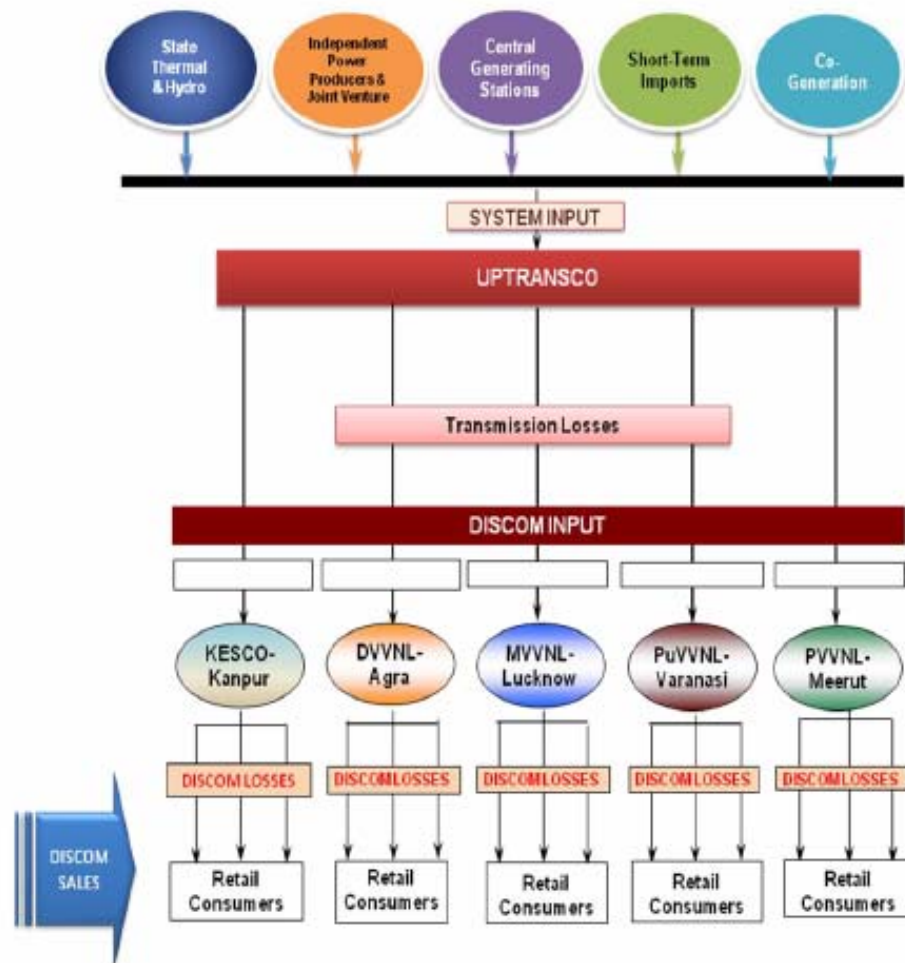
The Load forecast methodology presented in this chapter gives DisCom forecast of energy requirement and peak demand requirement for FY09 & FY 10 taking into consideration of up dated parameters and FY 08 as Actual base year. It also gives the sales projections, by category and sub-category, for all DisCom for the above period. This forecast is developed mainly upon the available population data, the proposed rural electrification program, and the expected conversion of unauthorized connections, connected load factor and specific growth factors. The category wise load growth is used for projection of energy for most of the categories.

The forecast projects the specific consumption level (consumption per customer) appropriate for each customer sub-category. This forecast is based on expected growth relationships to income and price, the effect of Demand Side Management and the impact of extended hours of service. The specific consumption level along with the number of customers in each category gives the sales figure for that particular sub-category. The final detailed calculations estimate the connected load by tariff sub-category.

The division level forecasts are assembled by their respective zones, zones to DisCom and DisCom to Consolidated DisCom. The bulk sales are also added for the aggregated forecast of Consolidated DisCom. Losses, both technical and non-technical, are added to the sales estimates to determine energy generation requirements.

Consistent with the requirement for uniform statewide tariffs, the sales forecast for input to the tariff proposal is first presented on a consolidated basis (four DisComs) with accompanying rationale for the forecast. Forecast results for each DisCom are then, prepared under the same methodology as for the consolidated case, but using DisCom actual base data.

The schematic diagram for Energy flow in state of UP is depicted in figure below:

Table 3-1: The schematic diagram for Energy flow in state of UP

3.1 Scenario:

The Load forecast scenario presented in this chapter is based upon the assumptions described as follows.

- The number of hours of supply is derived based on the availability of supply. It also considers the 24 hours of supply for major industries and railway categories.
- Number of consumers/ connections
- Connected load per consumer/connection
- Connected Load
- Connected Load Factor
- Hours of supply

The approach used in the study is as follows:

- The connected load projection is made by projecting number of consumer and connected load per consumer or by directly projecting the connected load depending on the type of category for which the type of data available.
- Initially hours of supply for entire horizon is assumed equal to the base year hours of supply
- The system level energy requirement is arrived by adding transmission and distribution losses to the sales arrived.

3.2 Determination of hours of supply for Load Forecast Scenario:

- The past data shows that the supply hours are varying by consumer's geographical location .i.e Rural/ Tahsil/ Janpad/ Visesh shreni nagar/ Mahanagar/ Bundelkhand/ Audyogic poushak etc. For ease of analysis and historical data constraints each load forecast category is divided into two sub-categories, namely rural and urban categories. The historical average hours of supply for rural category of consumers is arrived taking Rural and Tahsil areas into rural category. Similarly the average hours of supply for urban category are arrived taking the remaining areas of supply except the Audyogic poushak areas. The historical hours of supply to various areas is shown in the following table.

Table 3-2: Historical hours of supply to various areas

Hours of supply (hh:mm)					July
FY	2005	2006	2007	2008	2008
Rural	11:50	11:25	13:21	12:08	11:02
Tahsil	12:01	11:40	13:21	12:08	12:31
Janpad	16:40	16:09	17:17	16:23	16:32
Vishesh Shreni Nagar	18:12	17:13	19:03	18:55	
Maha Nagar	21:49	21:47	22:16	20:33	
Bundhel Khand	15:46	15:02	16:47	17:41	
Audyogic Poushak	22:22	23:29	23:23	23:50	
Average Rural Hours of Supply	11:56	11:33	13:21	12:08	11:46
Average Urban Supply (Hours)	18:07	17:33	18:50	18:23	16:32

- The average hours of supply for rural areas in FY 2008 is 12:08 i.e. 12.13 hours and the average hours of supply for urban areas is 18:23 i.e. 18.38 hours. The future projection of hours of supply for the rural and urban categories is determined based on the availability of supply. As the availability of supply is increased/ decreased the supply hours for rural and urban categories are gradually increased/ decreased in the same proportion. In the present analysis equal hours of supply is assumed for all DisComs.

3.3 Forecast Drivers:

The forecasts are based on a set of forecast drivers/assumptions, principal among these are:

- Gross Domestic Product (GDP):** The economic indicator of GDP is available for the State of U.P. as a whole and no break ups are available corresponding to the DISCOM wise geographical areas. Therefore, the GDP structure for U.P. which is 40% for agriculture, 45% for commercial/services and 15% for industry has been taken into account based on historical data. It is assumed that the UP agriculture sector will grow at annual rates of 5.2% in FY10 which is slightly lower than UP's five-year plan target, but higher than the historical average. Corresponding growth rates for the commercial/services sector is estimated to be 5.5% in FY10. However, keeping in view the vast difference in the industrial sales growth rate of AGRA DisCom and remaining DisComs a slightly higher industrial GDP growth rate has been considered for Meerut DisCom whereas the corresponding figure for other DisCom has been taken as 8%.
- Population:** It is assumed that urban and rural population will grow following historical patterns. For each DisCom, urban and rural population growth rates are estimated based on 1991 and 2001 Census data. These 10-year growth rates are applied to relevant consumer data in FY 09 to project consumer growth for FY 10.
- Rural and Urban Supply Hours:** It is assumed that the average daily supply hours in rural areas will be 14 in FY10. Variations in urban supply hours are also introduced in the forecast. The average daily supply hours for Tehsil towns are 14, for District towns is 16 for Commissionaires 20 and for MahaNagar 22 hours.
- Rural Electrification:** The DisCom wise rural electrification program considered in the forecast is as below :-

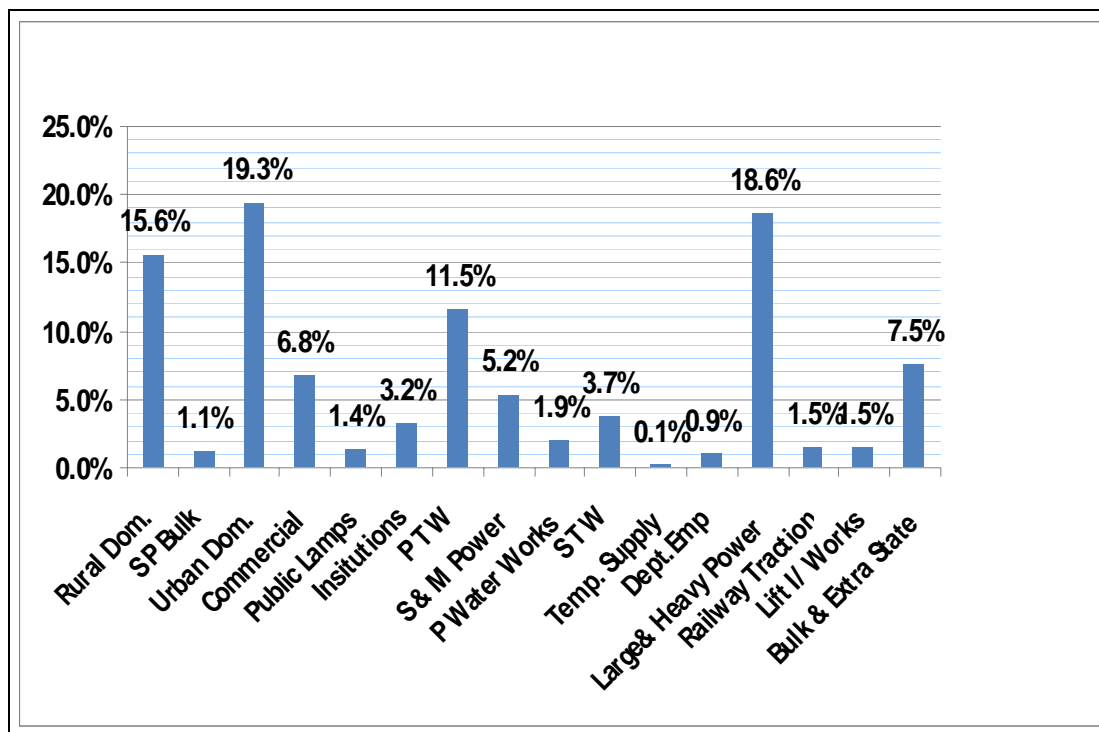
Table 3-3: DisCom-wise Rural Electrification Program:

S'No	DisCom	FY (2009-10) No of Villages
1	Agra DisCom	771
2	Meerut DisCom	496
3	Lucknow DisCom	1096
4	Varanasi DisCom	1171
	Total	3534

3.4 Summary of Sales Projections:

The consolidated category wise sales growth rate for Consolidated DisCom is presented in the graph below:-

Table 3-4: Category wise Sales growth rate Consolidated DisCom: FY 2009-10



3.5 Norms and Refinement of Billing Determinants:

In compliance with Commission directive, the FY10 ARR submission includes estimated revenue in detail breakdown by tariff category and subcategory, for historical year FY08, current year FY09 and forecast year FY10. The key steps in the calculation of revenues is deriving and forecasting Billing Determinants. To achieve as much accuracy as possible, FY08 consolidated CS3 reports and detailed divisional CS3 reports, based on the original CS3 reports prepared at the divisional level, are reconciled and “normalized” as per Commission’s approved consumption norms established in UPPCL order No.2649-CUR/L, dated 20-07-2001. These norms, specifying specific consumption levels for un-metered customers, are summarized on Table 3-6. The CS3 reports provide information on numbers of consumers, connected loads and kWh sales data for 90 retail consumer categories and subcategories with detailed breakdowns of urban/rural, metered/un-metered, and other pertinent information.

Table 3-5: Consumption Norms for Un-metered Categories

S'No	Category Un-metered Consumer	Area Rural/Urban	Consumption Norms
1	Private Tube Well	Rural	68.38 kWh/BHP/M or 91.66 kWh/kW/M
2	Domestic Rural Consumers	Rural	72 kWh/kW/M
3	Rural Commercial Consumers	Rural	72 kWh/kW/M
4	Rural State Tube Well	Rural	3562.35 kWh/Pump/M
5	Street Light	Rural	300 kWh/kW/Month
		Urban	360 kWh/kW/Month

As described above, the “normalization” process is developed at Divisional level to modify the divisional CS3 report obtained in the electronic form from all distribution divisions to ensure the consistency between divisional CS3 data and consolidated CS3 data. The original CS3 data is processed in order to:

- Ensure that the year end number of customers and connected load are consistent with the number reported in the consolidated CS3/CS4 report as published by UPPCL by major tariff category level;
- Adjust the number of customers and connected load to represent annual averages in order to estimate the expected annual tariff revenues;
- Adjust the consumptions of un-metered consumers categories in accordance with the adopted norms; and
- Ensure that adjusted energy sales in MU are consistent with reported consolidated CS3 sales by major tariff category level.

Two other databases have been used to supplement CS3 data. They are:

- The billing agent database; and
- The large customer database.

3.6 Billing frequency analysis:

As in the past submissions to the Commission, billing agent data are used to capture slab wise breakdowns of energy consumption, customer number and connected loads as required for Domestic (LMV-1), Commercial (LMV-2), Public Lamps (LMV-3), Institutions (LMV-4), Private Tube Wells (LMV-5) and Small & Medium Power (LMV-6). Subcategory breakdowns of the HV-2 category (Large & Heavy Power) at different voltage levels have been derived based on actual monthly bills received for consumers served at 11 kV and above.

As per the Commission’s directives, the sales and revenue forecast in this petition includes estimated revenue for all consumers who are expected to pay minimum charges.

In the current tariff schedule for load factor rebates in LMV-6 (Small and Medium Power) and HV-2 (Large and Heavy Power) consumers, billing agent's data are used to estimate distribution of sales in relation to various slabs of specific consumption in kWh/kW as stipulated in the tariff structure. For HV-2 consumers, the load factor related data and detailed breakdown of customer information by voltage level has been estimated based on invoice bills for consumers at 11 kV and above.

Time-of-Day (ToD) tariffs were adopted for HV-2 customers subsequently; aggregate daily load profiles for a typical day have now been developed based on actual metering data collected, and should result in more accurate HV-2 customer revenue estimates.

A new sub-category of Non-Industrial Bulk load is introduced in TO FY 09 under HV-1 with Private & Public Institutions having bulk power connected load of 75 kW and above. Data segregation of consumers falling under HV-1 are in progress at the divisional level.

- The detailed sub category wise data of Consolidated DisCom for FY 2007-08 is placed in Table 3-7 and the detailed sub category wise parameter estimated and projected for FY 09 & FY 10 are placed in Table 3-8 & Table 3-9 based on the above forecast are tabulated below.

Table 3-6: Billing Determinants for FY 08: Consolidated DisCom

CONSOLIDATED DisCom FY 2007-08	NUMBER OF CONSUMERS	CONNECTED LOAD kW	UNIT SOLD Lac UNIT
(A) Consumer getting supply as per "Rural Schedule"			
(i) Un-metered	3327338	5258898	44644.3
(ii) Metered	999378	1436730	16671.6
(B) Supply at Single Point for Bulk Load	33568	116692	1663.3
(C1) Other Metered Domestic Consumers	3318161	5852451	71454.5
(C2) Life Line Consumers/BPL	7752	7852	53.5
SUB TOTAL: (LMV-1)	7686197	12672623	134487.2
(A) Consumer getting supply as per "Rural Schedule"			
(i) Un-metered	62389	110755	943.0
(ii) Metered	180379	349518	4033.5
(B) Private Advertising/SignPost/SignBoard/GlowSign			
(C) Other Metered Non-Domestic Supply	675893	1536704	21033.6
SUB TOTAL: (LMV-2)	918661	1996977	26010.1
(A) Un-metered Supply			
(i) Gram Panchayat	927	7190	228.9
(ii) Nagar Palika & Nagar Panchayat	4086	31135	1272.1
(iii) Nagar Nigam	275	47823	1883.7
(B) Metered Supply			
(i) Gram Panchayat	13	242	4.9
(ii) Nagar Palika & Nagar Panchayat	286	14473	496.6
(iii) Nagar Nigam	131	8780	335.6
SUB TOTAL: (LMV-3)	5718	109643	4221.8
4(A) Public Institution	24494	338975	11852.8
4(B) Private Institution	9499	111799	2761.1
SUB TOTAL: (LMV-4 A & B)	33993	450774	14614.0
(A) Rural Schedule			
(i) Un metered Supply	697098	3724069	40448.9
(ii) Metered Supply	12054	88379	1785.6
(B) Urban Schedule			
(i) Metered Supply	19811	112600	939.8
SUB TOTAL: (LMV-5)	728963	3925048	43174.3
6(A) Small & Medium Power (Power Loom)			
(i) Rural Schedule	18325	130431	1639.5
(ii) Urban Schedule	24578	174920	2565.1
6(B) Small & Medium Power			
(i) Rural Schedule	27261	214954	2211.4
(ii) Urban Schedule	71999	844001	12247.1
SUB TOTAL: (LMV-6)	142163	1364306	18663.1
(A) Rural Schedule			
(a) Jal Nigam	1626	30220	977.3
(b) Jal Sansthan	502	11387	721.8
(c) Others (Water Works)	295	6736	309.8
(B) Urban Schedule			
(a) Jal Nigam	675	20395	770.4
(b) Jal Sansthan	1581	57461	2701.9
(c) Others (Water Works)	1573	55472	1926.5
SUB TOTAL: (LMV-7)	6252	181671	7407.7
(A) Metered Supply	1178	19229	569.7
(B) Un-metered Supply			
(i) STW/Panch.Raj/WB/ID/P.Canals/LI upto 100 BHP	27797	437903	11996.4
(ii) Laghu Dal Nahar above 100 BHP	205	14357	541.9
SUB TOTAL: (LMV-8)	29180	471489	13108.0
(A) Metered Supply	2278	12819	213.7
(B) Un-metered Supply	254	3745	185.8
SUB TOTAL: (LMV-9)	2532	16564	399.5
(A) Serving			
(i) Class IV Employees	15891	38515	227.1
(ii) Class III Employees	23538	63847	386.6
(iii) Junior Engineers & Equivalent	2673	7305	58.9
(iv) Assistant Engineers & Equivalent	853	3020	25.1
(v) Executive Engineers & Equivalent	2692	6868	83.1
(vi) Deputy General Manager & Equivalent	56	289	2.2
(vii) C G M/GM & Equivalent posts and above	16	89	0.6
(B) Total Pensioner & Family Pensioner	25856	62351	710.0
SUB TOTAL: (LMV-10)	71575	182284	1493.7
(A) Urban Schedule			
(i) For supply at 11kV	5426	1497134	36815.8
(ii) For supply above 11kV & upto Including 66kV	403	620894	17971.0
(iii) For supply above 66kV & upto Including 132kV	99	136012	2296.2
(iv) For supply above 132kV	15	41458	2291.2
(B) Rural Schedule			
(i) For supply at 11kV	405	97761	2222.6
(ii) For supply above 11kV & upto Including 66kV	136	82739	2711.1
SUB TOTAL: (HV-2)	6484	2475998	64307.9
(A) For supply at & above 132kV	7	164950	4361.7
(B) For supply below 132kV	2	95550	2173.2
SUB TOTAL: (HV-3)	9	260500	6534.9
(A) For supply at 11kV	84	76295	3027.3
(B) For supply above 11kV & upto 66kV	20	56353	2011.3
(C) For supply above 66kV & upto 132kV	7	19014	541.5
SUB TOTAL: (HV-4)	111	151662	5580.1
EXTRA STATE CONSUMERS	7	14100	222.3
SUB TOTAL: (EXTRA STATE)	7	14100	222.3
(A) NPCL	1	45000	3461.3
(B) KESCO	1	1249459	27279.4
SUB TOTAL: BULK	2	1294459	30740.7
GRAND TOTAL (CONSOLIDATED DisCom)	9631847	25568098	370965.2

Table 3-7: Billing Determinants for FY 09: Consolidated DisCom

CONSOLIDATED DisCom FY 2008-09	NUMBER OF CONSUMERS	CONNECTED LOAD kW	UNIT SOLD Lac UNIT
(A) Consumer getting supply as per "Rural Schedule"			
(i) Un-metered	3461091	5657084	44109.5
(ii) Metered	1089662	1581452	20065.2
(B) Supply at Single Point for Bulk Load	149525	333745	3171.0
(C1) Other Metered Domestic Consumers	3624616	6115232	77569.7
(C2) Life Line Consumers/BPL	26003	17377	196.0
SUB TOTAL: (LMV-1)	8350897	13704890	145111.3
(A) Consumer getting supply as per "Rural Schedule"			
(i) Un-metered	72090	150076	1044.6
(ii) Metered	197766	419686	6287.5
(B) Private Advertising/SignPost/SignBoard/GlowSign			
(C) Other Metered Non-Domestic Supply	711512	1615527	19165.6
SUB TOTAL: (LMV-2)	981368	2185289	26497.7
(A) Un-metered Supply			
(i) Gram Panchayat	626	6821	259.4
(ii) Nagar Palika & Nagar Panchayat	5938	36477	1460.0
(iii) Nagar Nigam	238	45878	2281.8
(B) Metered Supply			
(i) Gram Panchayat	118	1084	38.3
(ii) Nagar Palika & Nagar Panchayat	354	25722	730.4
(iii) Nagar Nigam	175	13445	351.3
SUB TOTAL: (LMV-3)	7449	129427	5121.2
4(A) Public Institution	27132	354572	10743.8
4(B) Private Institution	9385	101004	2743.1
SUB TOTAL: (LMV-4 A & B)	36517	455576	13486.9
(A) Rural Schedule			
(i) Un metered Supply	745919	3725462	38209.6
(ii) Metered Supply	24385	179917	2721.6
(B) Urban Schedule			
(i) Metered Supply	40319	240420	5604.2
SUB TOTAL: (LMV-5)	810623	4145799	46535.4
6(A) Small & Medium Power (Power Loom)			
(i) Rural Schedule	24539	154463	1861.3
(ii) Urban Schedule	28039	221300	3540.9
6(B) Small & Medium Power			
(i) Rural Schedule	30148	238917	2628.5
(ii) Urban Schedule	66315	802683	13010.5
SUB TOTAL: (LMV-6)	149041	1417363	21041.1
(A) Rural Schedule			
(A) Jal Nigam	1664	34933	1152.3
(B) Jal Sansthan	350	5439	426.9
(C) Others (Water Works)	449	10621	368.3
(B) Urban Schedule			
(A) Jal Nigam	740	24435	839.7
(B) Jal Sansthan	1701	73601	2914.5
(C) Others (Water Works)	1712	58450	2163.5
SUB TOTAL: (LMV-7)	6616	207479	7865.3
(A) Metered Supply	2523	54620	971.4
(B) Un-metered Supply			
(i) STW/Panch. Raj/WB/ID/P.Canals/LI upto 100 BHP	27551	451838	14365.9
(ii) Laghu Dal Nahar above 100 BHP	237	12609	520.4
SUB TOTAL: (LMV-8)	30311	519067	15857.75
(A) Metered Supply	1904	17217	330.8
(B) Un-metered Supply	1168	5251	88.5
SUB TOTAL: (LMV-9)	3072	22468	419.2
(A) Serving			
(i) Class IV Employees	16272	36889	641.8
(ii) Class III Employees	23944	66200	1582.3
(iii) Junior Engineers & Equivalent	2853	7901	187.7
(iv) Assistant Engineers & Equivalent	692	2926	75.4
(v) Executive Engineers & Equivalent	1059	3805	71.5
(vi) Deputy General Manager & Equivalent	61	320	22.7
(vii) C G M/GM & Equivalent posts and above	19	199	24.1
(B) Total Pensioner & Family Pensioner	26231	61712	1183.4
SUB TOTAL: (LMV-10)	71131	179952	3789
(A) Urban Schedule			
(i) For supply at 11kV	6274	1693886	40136.2
(ii) For supply above 11kV & upto Including 66kV	551	691027	23291.2
(iii) For supply above 66kV & upto Including 132kV	122	192354	4540.6
(iv) For supply above 132kV	43	62558	2649.1
(B) Rural Schedule			
(i) For supply at 11kV	464	91155	2191.4
(ii) For supply above 11kV & upto Including 66kV	48	39109	1784.9
SUB TOTAL: (HV-2)	7502	2770089	74593.4
(A) For supply at & above 132kV	6	156925	3611.4
(B) For supply below 132kV	2	95550	2525.0
SUB TOTAL: (HV-3)	8	252475	6136.4
(A) For supply at 11kV	86	89165	3474.5
(B) For supply above 11kV & upto 66kV	23	62304	2332.4
(C) For supply above 66kV & upto 132kV	1	9350	211.7
SUB TOTAL: (HV-4)	110	160819	6018.6
EXTRA STATE CONSUMERS	7	509607	297.0
SUB TOTAL: (EXTRA STATE)	7	509607	297.0
(A) NPCL	1	45000	3481.9
(B) KESCO	1	1418497	26323.4
SUB TOTAL: BULK	2	1463497	29805.3
GRAND TOTAL	10454654	28123797	402575.6

Table 3-8: Billing Determinants for FY 10: Consolidated DisCom

Projected CONSOLIDATED DisCom FY 2009-10	NUMBER OF CONSUMERS	CONNECTED LOAD kW	UNIT SOLD Lac UNIT
(A) Consumer getting supply as per "Rural Schedule"			
(i) Un-metered	3327338	5258898	43668.4
(ii) Metered	999378	1436730	22175.3
(B) Supply at Single Point for Bulk Load	33568	116692	4750.1
(C1) Other Metered Domestic Consumers	3881953	6968909	81615.5
(C2) Life Line Consumers/BPL	2756776	2681037	421.3
SUB TOTAL: (LMV-1)	10999013	16462265	152631
(A) Consumer getting supply as per "Rural Schedule"			
(i) Un-metered	62389	110755	1034.1
(ii) Metered	180379	349518	8177.9
(B) Private Advertising/SignPost/SignBoard/GlowSign			
(C) Other Metered Non-Domestic Supply	853360	1937959	19534.9
SUB TOTAL: (LMV-2)	1096128	2398232	28747
(A) Un-metered Supply			
(i) Gram Panchayat	1037	8098	259.4
(ii) Nagar Palika & Nagar Panchayat	4635	34628	1466.5
(iii) Nagar Nigam	304	52806	2293.6
(B) Metered Supply			
(i) Gram Panchayat	10	63	39.8
(ii) Nagar Palika & Nagar Panchayat	309	15742	780.7
(iii) Nagar Nigam	142	9520	901.1
SUB TOTAL: (LMV-3)	6436	120857	5741
4(A) Public Institution	26766	377906	10851.2
4(B) Private Institution	10381	121024	2770.5
SUB TOTAL: (LMV-4 A & B)	37147	498930	13622
(A) Rural Schedule			
(i) Un metered Supply	742088	3961182	33501.1
(ii) Metered Supply	13657	100000	3129.8
(B) Urban Schedule			
(i) Metered Supply	21739	123536	11768.9
SUB TOTAL: (LMV-5)	777484	4184718	48400
6(A) Small & Medium Power (Power Loom)			
(i) Rural Schedule	18325	130431	1910.1
(ii) Urban Schedule	24578	174920	3938.9
6(B) Small & Medium Power			
(i) Rural Schedule	43459	338034	2828.5
(ii) Urban Schedule	93350	1083467	13413.7
SUB TOTAL: (LMV-6)	179711	1726852	22091
(A) Rural Schedule			
(a) Jal Nigam	1747	32399	1262.9
(b) Jal Sansthan	543	12312	418.4
(c) Others (Water Works)	322	7337	407.5
(B) Urban Schedule			
(a) Jal Nigam	1806	43366	870.7
(b) Jal Sansthan	1701	61745	2972.8
(c) Others (Water Works)	1734	61355	2289.8
SUB TOTAL: (LMV-7)	7852	218514	8222
(A) Metered Supply	1276	20848	997.5
(B) Un-metered Supply			
(i) STW/Panch. Raj/WB/ID/P. Canals/L.I upto 100 BHP	33024	526625	14329.4
(ii) Laghu Dal Nahar above 100 BHP	245	17445	485.1
SUB TOTAL: (LMV-8)	34545	564919	15812
(A) Metered Supply	39906	229028	465.0
(B) Un-metered Supply	5711	100126	66.3
SUB TOTAL: (LMV-9)	45618	329154	531
(A) Serving			
(i) Class IV Employees	17814	41887	648.2
(ii) Class III Employees	25043	66574	1598.1
(iii) Junior Engineers & Equivalent	3265	8696	191.4
(iv) Assistant Engineers & Equivalent	1041	3615	76.9
(v) Executive Engineers & Equivalent	2793	7375	73.0
(vi) Deputy General Manager & Equivalent	64	347	23.2
(vii) C G M/GM & Equivalent posts and above	19	110	24.6
(B) Total Pensioner & Family Pensioner	29016	66700	1218.9
SUB TOTAL: (LMV-10)	79054	195302	3854
(A) Urban Schedule			
(i) For supply at 11kV	7597	2098207	42562.5
(ii) For supply above 11kV & upto Including 66kV	558	857993	24252.2
(iii) For supply above 66kV & upto Including 132kV	132	183211	4884.6
(iv) For supply above 132kV	21	56896	2861.0
(B) Rural Schedule			
(i) For supply at 11kV	540	130601	2191.4
(ii) For supply above 11kV & upto Including 66kV	30	14977	1790.1
SUB TOTAL: (HV-2)	8878	3341885	78542
(A) For supply at & above 132kV	8	186732	3694.3
(B) For supply below 132kV	2	95860	2648.73
SUB TOTAL: (HV-3)	10	282592	6343
(A) For supply at 11kV	84	76295	3576.0
(B) For supply above 11kV & upto 66kV	20	56353	2349.3
(C) For supply above 66kV & upto 132kV	7	19014	211.64
SUB TOTAL: (HV-4)	111	151662	6137.0
EXTRA STATE CONSUMERS	7	14100	308.9
SUB TOTAL: (EXTRA STATE)	7	14100	309
(A) NPCL	1	45000	3490.0
(B) KESCO	1	1526590	27664.0
SUB TOTAL: BULK	2	1571590	31154
GRAND TOTAL: CONSOLIDATED DisCom	13271996	32061572	422136.0

3.7 Category Wise Sales Results and Assumptions:

This section provides further details with respect to assumptions made in estimating numbers of consumers, specific consumption per consumer and total sales in MU for each consumer category.

3.8 Domestic Light and Fan {LMV-1}

This category includes four subcategories:

- Rural Schedule(Un-metered)
- Rural Schedule (Metered)
- Single Point for Bulk Load
- Domestic Other metered
- Life Line Consumers

3.9 Rural Schedule {Un-metered}

This subcategory includes rural consumers and a small number of urban consumers that are un-metered, with a total number of consumers of about 33.30 lakh in FY 10. The number of un-metered consumers is forecast based on the following factors:

- **Rural population growth in each DisCom:** The projected rates of rural population growth for the DisComs are: 2.3% for Meerut DisCom, 1.6% for Agra DisCom, 2.5% for Lucknow DisCom, and 2.3% for Varanasi DisCom;
- **Urban population growth in each DisCom:** The assumed rates of urban population growth for DisComs are: 3.4% for Meerut DisCom, 2.9% for Agra DisCom, 2.7% for Lucknow DisCom, and 2.6% for Varanasi DisCom;
- **Anticipated change in household size:** The average household size has been decreasing at an average rate of 0.3% per year over the last ten years. This increases the number of households to be electrified. It is assumed that this trend will continue during the forecast period;
- **Rural electrification program:** It is assumed that number of un-metered rural consumers will substantially grow in accordance with the village electrification program. The growth rate is estimated based on the electrification schedule as placed at Table 3-3.

- **Regularization of unauthorized users:** A provision is made for a negative growth of rural consumers to reflect the UPPCL program of regularization of unauthorized consumers.

While the growth in un-metered customers is projected as outlined above which is evident from the historical pattern as well, it has been assumed that of the total growth that was to occur in this sector will be transferred to the metered category of this supply schedule. This is also in accordance with government policy and UPERC directives for greater stress on conversion of un-metered consumers to metered category. Corresponding electricity sales for FY 10 is 4366.8 MU.

3.9.1 Rural Schedule {Metered}:

This category represents the metered customers who are getting supply as per rural schedule.

Domestic consumers total about 1089662 on an annual average basis, with average annual specific consumption of about 153 kWh per consumer in FY09. For forecast purpose it has been assumed a negative growth in Domestic-Rural schedule-un-metered category. Further keeping into account the rural electrification program (Table 3-3) it has been assumed that 10 number metered customers will be coming in each of the electrified village. On this account and inherent growth in the parent category the annual average sale of consumers in this category is forecast to be 2217.5 MU in FY-10.

3.9.2 Single Point for Bulk Load:

The number of consumers under this category, urban and rural, is projected based on population growth in urban and rural areas respectively. Annual specific consumption is estimated based on the income effects described above under Domestic – Metered.

The combined annual average number of consumers for rural and urban residential society is forecast to be 33568 for FY10. Corresponding electricity sales for the same period is projected to be 475 MU.

3.9.3 Domestic - Other Metered:

This category includes urban and rural consumers that are subject to Other Metered Supply rate, and include consumers who are generally residing close to, or within relatively large urban centres. In FY09, the annual average numbers of consumers were about 36.24 lakhs, with urban accounting for 98% of this number. In base year, annual specific consumption averaged 2140 kWh/ consumers.

The number of consumers under this category is forecast to grow at about 7.0% driven by urban and rural population growth and expected change of household size. With respect to

the specific consumption, annual consumption for both rural and urban consumers is expected to increase at rates reflecting the improved supply conditions.

The combined annual average number of metered urban and rural consumers under this category is forecast to be about 38.82 lakh in FY10. Corresponding electricity sales for the same period are projected to be 8161 MU.

3.9.4 Life Line Consumers:

In TO dated 15th April 2008, Commission revised the slabs for the energy consumption for this category and upper limit is increased from 100 units to 150 unit .This approach results in a floating consumer for this category having connected load of 1 kW and consumption up to 150 Units. On a historical analysis the sales to this category are projected as 42 MU in FY 10.

3.9.5 Commercial {LMV 2}

The Commercial category includes three main subcategories:

- Rural Schedule(Un-metered)
- Rural Schedule (Metered)
- Private advertisement/sign post.
- Commercial Other metered supply

3.9.6 Rural Schedule {Un-metered}

This subcategory includes rural consumers who are un-metered. The total recorded number of consumers was 72090 on annual average basis for FY09 .In the same year, annual specific consumption averaged 1449 kWh per consumer.

The number of consumers in this subcategory is forecast to grow with the growth in the service sector GDP following an elasticity factor of 0.95. This elasticity is estimated based on regression analysis of time series data of the number of commercial consumers and GDP growth in UP while also keeping in view other researched studies. In addition, it is further assumed that new metered rural electrification consumers will be connected, based on the assumption that one new commercial consumer will be added per two newly electrified villages. Finally, an increase in the number of consumers is allowed in rural sectors to reflect the UPPCL program of regularization of unauthorized consumers.

The combined annual average number of un-metered rural consumers in this subcategory is, therefore, forecast to be 62389 in FY10. Corresponding electricity sales for the same period are projected to be 103 MU.

3.9.7 Rural Schedule {Metered}

This subcategory includes metered commercial consumers in rural areas. For FY09, the average numbers of consumers total about 197766. Corresponding specific consumption per consumer was about 3179 kWh per year.

The number of consumers is expected to grow with the growth in the service sector GDP with an elasticity factor of 0.95. The combined annual average number of consumers for this subcategory is forecast to be 1.80 lakh for FY10. Corresponding electricity sales for the same years are projected to be 817.8 MU.

3.9.8 Private Advertising/Sign post:

The Commission has introduced this tariff category to discourage non-essential consumption when large scale rostering is being implemented by the Licensee. Segregated data of this sub-category is under compilation. as the historical data are not available, the sales projections are incorporated in other commercial categories.

3.9.9 Commercial - Other Metered Supply:

This subcategory includes urban consumers that are subject to the Other Metered Supply tariff. They are generally located in and around large urban centers.

The number of consumers averaged 711512 in FY09. It is expected to grow with the growth in the service sector GDP following an elasticity factor of 0.95. With respect to specific consumption, the price elasticity of -0.25 and other factors like change in supply hours has brought the annual average number of metered consumer in this category is forecast to be 8.53 lakh in FY09. Corresponding electricity sales for the same years are projected to be 1953.5 MU.

3.9.10 Public Lamps {LMV 3}

This category comprises two main subcategories:

- Public Lamp Metered; and
- Public Lamp Un-metered

3.9.11 Public Lamps - Metered

- As the number of consumers listed in this category reflects the number of supply points rather than the number of lamps, growth in the number of consumers has little meaning. It is therefore assumed that the growth in the number of lamps, as well as any changes with respect to operations, will be captured in the assumed growth rates for specific consumption. Thus, specific consumption is expected to grow to account for increasing numbers and intensity of use in response to extended supply hours.

- Combined metered electricity sales for FY09 are forecasted to be 172.1 MU.

3.9.12 Public Lamps – Un-metered

This subcategory includes un-metered consumers having combined consumption of 400.1 MU in FY09. The number of consumers and level of specific consumption are estimated based on the same approach as for metered consumers, described above.

The combined annual average electricity sales of un-metered consumers for this category are forecast to be 402 MU for FY10.

3.9.13 Institutions {LMV 4}

This category includes public institutions and private institutions, which are forecast separately.

3.9.14 Institutions – Public:

This subcategory classified as public institutions. The total number of consumers averaged 27132 in FY09. It is assumed that the number of consumers will grow steadily.

The combined annual average number of consumers for this category is forecast to be 26766 in FY10, corresponding electricity sales for the same years is projected to be 1085.1

3.9.15 Institutions – Private:

This category classified as private institutions. Total recorded number of consumers in FY09 was 9385. The forecast of consumer numbers and specific consumption for private institutions is slightly higher approach as for the public institutions described above.

The combined annual average number of consumer in this category is forecast to be 10381 for FY10. Corresponding electricity sales for the same years are projected to be 277.05 MU.

3.9.16 Private Tube wells (PTW) {LMV - 5}

This category includes privately owned tube wells for agriculture purposes. It is assumed that the number of consumers in this category will grow with Agriculture GDP with an elasticity factor of 0.8.

It is assumed that extended rural supply hours will only moderately increase the specific consumption of rural consumers given that it has been estimated that sufficient water can be obtained with a maximum of 10 hours pumping per day. For urban PTW, it is assumed that there will be no growth in the level of specific consumption.

The annual average number of PTW consumers is forecast to be 7.77 lakh in FY10. Corresponding electricity sales are projected to be 4840 MU

3.9.17 Small and Medium Power {LMV 6}

It is assumed that there will be not much consumer growth for this category in FY10, reflecting the pattern over the last two years. With respect to the specific consumption, it is assumed that consumption per rural consumer will increase as a result of extended rural supply conditions. For urban consumers, it is assumed that consumption will increase with the Industrial GDP following an elasticity factor of 0.5, based on the assumption that the supply constraints of rural areas do not apply to urban consumers. The electricity sales for FY 10 are projected to be 2209 MU

3.9.18 Public Water Works {LMV 7}

It is projected that the number of public water works consumers will grow at 3.5% in FY10, reflecting the growth of population and urbanization. Regarding specific consumption, it is assumed that urban consumers will maintain their average consumption levels. For rural consumer, the specific consumption level has been adjusted to reflect the effect of extended supply hours. The electricity sales are projected to be 822.2 MU.

3.9.19 State Tube wells {LMV 8}

This category includes state tube wells & World Bank tube wells and for which it has been assumed that there will be negligible new consumers over the forecast period.

It has also been assumed that not much consumption will increase; further adjustment is made to specific consumption to reflect the extended rural supply hours. Electricity sales for the same period are projected to be 1581.2 MU for FY10

3.9.20 Department Employees and Pensioners {LMV 10}

It is assumed that total number of department employees will increase by 2% per year and be transferred to the pensioner's category. The number of pensioners is forecast to increase by the same percentage. The specific consumption is expected to increase at par with other domestic consumers.

3.9.21 Large and Heavy Power {HV 2}

There are no new specific industries forecast for this category for the simple reason that at the base level of the forecast (divisions) there were typically so few industries listed that even substantial growth rates would not have increased to the number of customers. The number of industries is, of course expected to grow and any growth in the number of customers has been incorporated in the specific consumption growth projections.

Specific consumption is expected to grow following the industrial GDP growth with an elasticity factor of 0.75 and prices with an elasticity of - 0.15.

Corresponding electricity sales for FY 10 are projected to be 7854.2 MU. The industrial sales growth of FY 10 over FY 09 has been taken as 5.2%. This is in line with the industrial sales growth coupled with income elasticity of L&H industries in the range of 0.75 to 1.00

3.9.22 Railway Traction {HV 3}

Sales for railway traction have been varying since 2001, mostly due to competition from other suppliers. It is projected that sales for railway traction will follow a trend of about 3% increase in FY 10 with the corresponding figure being 634.3 MU.

3.9.23 Lift Irrigation {HV 4}

It is projected that there will be no major change in consumer numbers in both FY09 and FY10. Total sales are projected to increase with the growth of population, rural and urban as appropriate to the figure of 613.7MU

3.9.24 Bulk Supply and Extra State

Bulk supply sales to KeSco as well as sales outside of the state are estimated to grow over FY09 at modest rates. Extra State sales are projected to grow at 4 % in FY10 and Bulk Sales to KeSco at about 5 % in FY 10.

3.10 Sales Forecast by DisCom:

The detailed sales forecast as described in Section 3.1 may be disaggregated by DisCom. Also, distribution losses based on the targets provided may be added to arrive at the estimated kWh to be delivered by TransCo facilities. This is shown in Table 3-10 as under including extra-state and Bulk made over DisCom distribution facilities.

Table 3-9: Actual and Estimated Energy Status of DisComs:

Licencsee	FY2007- 08	FY2008- 09	FY2009- 10
Energy Received By DisCom.(MU)			
Consolidated Discom	51493	52779	54345
MEERUT (Incl. Bulk)	16,968	17,214	17,365
AGRA (Incl. Bulk)	14,246	14,409	15,475
LUCKNOW	8,683	8,958	9,203
VARANASI	11,596	12,198	12,301
Sales (MU)			
Consolidated Discom	37097	40258	42214
MEERUT (Incl. Bulk)	11,948	12,834	13,228
AGRA (Incl. Bulk)	10,425	11,387	12,336
LUCKNOW	6,548	7,025	7,361
VARANASI	8,175	9,011	9,289
Distribution Losses (% of Energy Received)			
Consolidated Discom	28%	24%	22%
MEERUT (Incl. Bulk)	30%	25%	24%
AGRA (Incl. Bulk)	27%	21%	20%
LUCKNOW	25%	22%	20%
VARANASI	29%	26%	24%

NB: Losses are calculated on the basis of Energy received from TransCo.

3.11 Billing Determinants:

The detailed sub category wise data of AGRA DisCom for Previous Year FY 2007-08 is placed in Table 3-5 and the detailed sub category wise parameter of Current Year and Ensuing Year are placed in Table 3-6 & Table 3-7 based on the above forecast are tabulated below.

Table 3-10: Billing Determinants for FY 08: AGRA DisCom

AGRA DisCom FY 2007-08	NUMBER OF CONSUMERS	CONNECTED LOAD kW	UNIT SOLD Lac UNIT
(A) Consumer getting supply as per "Rural Schedule"			
(i) Un-metered	425770	692717	6551.2
(ii) Metered	392151	520560	6996.0
(B) Supply at Single Point for Bulk Load	18221	23985	80.6
(C1) Other Metered Domestic Consumers	641308	1065255	15526.9
(C2) Life Line Consumers/BPL	121	490	14.5
SUB TOTAL:(LMV-1)	1477571	2303007	29169.2
(A) Consumer getting supply as per "Rural Schedule"			
(i) Un-metered	3067	4806	46.7
(ii) Metered	61658	114608	1539.7
(B) Private Advertising/SignPost/SignBoard/GlowSign			
(C) Other Metered Non-Domestic Supply	134520	310395	4455.9
SUB TOTAL:(LMV-2)	199245	429809	6042.2
(A) Un-metered Supply			
(i) Gram Panchayat	163	1369	66.0
(ii) Nagar Palika & Nagar Panchayat	919	7243	308.8
(iii) Nagar Nigam	49	3784	151.4
(B) Metered Supply			
(i) Gram Panchayat	4	184	4.4
(ii) Nagar Palika & Nagar Panchayat	52	3439	69.0
(iii) Nagar Nigam	17	2832	99.0
SUB TOTAL:(LMV-3)	1204	18851	698.6
4(A) Public Institution	7653	68252	2241.9
4(B) Private Institution	2742	32945	970.4
SUB TOTAL:(LMV-4 A & B)	10395	101197	3212.3
(A) Rural Schedule			
(i) Un metered Supply	119306	911151	8923.5
(ii) Metered Supply	10185	79940	1745.4
(B) Urban Schedule			
(i) Metered Supply	10896	64626	475.7
SUB TOTAL:(LMV-5)	140387	1055717	11144.5
6(A) Small & Medium Power (Power Loom)			
(i) Rural Schedule	4693	26462	453.4
(ii) Urban Schedule	3290	21017	293.4
6(B) Small & Medium Power			
(i) Rural Schedule	3769	30366	464.0
(ii) Urban Schedule	30060	303059	4019.4
SUB TOTAL:(LMV-6)	41812	380904	5230.1
(A) Rural Schedule			
(a) Jal Nigam	467	5244	200.1
(b) Jal Sansthan	186	2895	84.8
(c) Others (Water Works)	61	1143	36.5
(B) Urban Schedule			
(a) Jal Nigam	244	4659	299.4
(b) Jal Sansthan	644	21484	976.6
(c) Others (Water Works)	188	5294	185.4
SUB TOTAL: (LMV-7)	1790	40719	1782.8
(A) Metered Supply	5	92	8.8
(B) Un-metered Supply			
(i) STW/Panch.Raj/WB/ID/P.Canals/LI upto 100 BHP	5631	122538	2452.7
(ii) Laghu Dal Nahar above 100 BHP	4	460	9.8
SUB TOTAL:(LMV-8)	5640	123090	2471.3
(A) Metered Supply	125	2400	52.2
(B) Un-metered Supply	81	1575	48.0
SUB TOTAL:(LMV-9)	206	3975	100.1
(A) Serving			
(i) Class IV Employees	3428	8950	41.6
(ii) Class III Employees	4751	13461	91.6
(iii) Junior Engineers & Equivalent	183	583	5.9
(iv) Assistant Engineers & Equivalent	57	206	2.5
(v) Executive Engineers & Equivalent	36	139	1.8
(vi) Deputy General Manager & Equivalent	6	22	0.5
(vii) C G M/GM & Equivalent posts and above	0	0	0.0
(B) Total Pensioner & Family Pensioner	6533	19521	162.8
SUB TOTAL:(LMV-10)	14994	42882	306.7
(A) Urban Schedule			
(i) For supply at 11kV	1068	217180	5784.7
(ii) For supply above 11kV & upto Including 66kV	97	231072	4109.2
(iii) For supply above 66kV & upto Including 132kV	80	20639	401.9
(iv) For supply above 132kV	2	25896	1556.2
(B) Rural Schedule			
(i) For supply at 11kV	193	34371	883.7
(ii) For supply above 11kV & upto Including 66kV	19	4605	140.1
SUB TOTAL:(HV-2)	1459	533763	12875.9
(A) For supply at & above 132kV	4	84550	2278.3
(B) For supply below 132kV	1	17550	729.4
SUB TOTAL: (HV-3)	5	102100	3007.6
(A) For supply at 11kV	22	14170	568.3
(B) For supply above 11kV & upto 66kV	1	1492	46.5
(C) For supply above 66kV & upto 132kV	1	9350	252.5
SUB TOTAL:(HV-4)	24	25012	867.2
EXTRA STATE CONSUMERS	4	6100	58.4
SUB TOTAL:(EXTRA STATE)	4	6100	58.4
(A) NPCL	0	0	0.0
(B) KESCO	1	1249459	27279.4
SUB TOTAL:BULK	1	1249459	27279.4
GRAND TOTAL(AGRA DisCom)	1894737	6416585	104246.5

Table 3-11: Billing Determinants for FY 09: AGRA DisCom

AGRA DisCom FY 2008-09	NUMBER OF CONSUMERS	CONNECTED LOAD kW	UNIT SOLD Lac UNIT
(A) Consumer getting supply as per "Rural Schedule"			
(i) Un-metered	436889	692099	5301.0
(ii) Metered	400836	563186	8357.6
(B) Supply at Single Point for Bulk Load	10186	11268	152.2
(C1) Other Metered Domestic Consumers	759425	1216320	18280.9
(C2) Life Line Consumers/BPL	774	774	120.3
SUB TOTAL:(LMV-1)	1608110	2483647	32212.0
(A) Consumer getting supply as per "Rural Schedule"			
(i) Un-metered	3058	3992	48.5
(ii) Metered	62021	134024	2142.8
(B) Private Advertising/SignPost/SignBoard/GlowSign			
(C) Other Metered Non-Domestic Supply	146378	332299	3797.9
SUB TOTAL:(LMV-2)	211457	470315	5989.2
(A) Un-metered Supply			
(i) Gram Panchayat	183	2031	87.2
(ii) Nagar Palika & Nagar Panchayat	919	7526	295.2
(iii) Nagar Nigam	56	6629	260.2
(B) Metered Supply			
(i) Gram Panchayat	4	184	8.8
(ii) Nagar Palika & Nagar Panchayat	60	4394	115.5
(iii) Nagar Nigam	21	1095	52.0
SUB TOTAL:(LMV-3)	1243	21859	818.8
4(A) Public Institution	9094	72201	2235.3
4(B) Private Institution	2700	31987	846.7
SUB TOTAL:(LMV-4 A & B)	11794	104188	3082.0
(A) Rural Schedule			
(i) Un metered Supply	102001	785595	8008.3
(ii) Metered Supply	20107	158557	2059.8
(B) Urban Schedule			
(i) Metered Supply	28155	179186	4268.4
SUB TOTAL:(LMV-5)	150263	1123338	14336.5
6(A) Small & Medium Power (Power Loom)			
(i) Rural Schedule	4589	30066	419.4
(ii) Urban Schedule	13335	86907	1091.5
6(B) Small & Medium Power			
(i) Rural Schedule	4501	32522	515.9
(ii) Urban Schedule	21540	233267	4043.1
SUB TOTAL:(LMV-6)	43965	382762	6069.9
(A) Rural Schedule			
(A) Jal Nigam	489	6866	204.0
(B) Jal Sansthan	250	3395	146.2
(C) Others (Water Works)	97	1950	72.9
(B) Urban Schedule			
(A) Jal Nigam	336	5998	293.6
(B) Jal Sansthan	554	19172	834.9
(C) Others (Water Works)	198	6207	211.2
SUB TOTAL: (LMV-7)	1924	43588	1762.9
(A) Metered Supply	1337	37806	618.9
(B) Un-metered Supply			
(i) STW/Panch.Raj/WB/ID/P.Canals/LI upto 100 BHP	4435	89537	3130.2
(ii) Laghu Dal Nahar above 100 BHP	4	460	19.5
SUB TOTAL:(LMV-8)	5776	127803	3768.6
(A) Metered Supply	91	835	103.4
(B) Un-metered Supply	138	1789	21.7
SUB TOTAL:(LMV-9)	229	2624	125.1
(A) Serving			
(i) Class IV Employees	3248	7539	231.8
(ii) Class III Employees	4069	11686	435.1
(iii) Junior Engineers & Equivalent	270	948	27.4
(iv) Assistant Engineers & Equivalent	60	223	10.7
(v) Executive Engineers & Equivalent	35	123	6.2
(vi) Deputy General Manager & Equivalent	6	24	0.7
(vii) C G M/GM & Equivalent posts and above	1	102	0.8
(B) Total Pensioner & Family Pensioner	6132	18516	567.1
SUB TOTAL:(LMV-10)	13821	39161	1279.6
(A) Urban Schedule			
(i) For supply at 11kV	1236	260040	6677.7
(ii) For supply above 11kV & upto Including 66kV	55	101196	4922.6
(iii) For supply above 66kV & upto Including 132kV	92	22073	524.7
(iv) For supply above 132kV	1	25500	1671.5
(B) Rural Schedule			
(i) For supply at 11kV	326	56427	1224.5
(ii) For supply above 11kV & upto Including 66kV	18	4554	187.7
SUB TOTAL:(HV-2)	1728	469790	15208.8
(A) For supply at & above 132kV	3	72850	1218.4
(B) For supply below 132kV	1	17550	757.1
SUB TOTAL: (HV-3)	4	90400	1975.5
(A) For supply at 11kV	22	14580	572.9
(B) For supply above 11kV & upto 66kV	1	1492	40.5
(C) For supply above 66kV & upto 132kV	1	9350	211.6
SUB TOTAL:(HV-4)	24	25422	825.1
EXTRA STATE CONSUMERS	3	6000	96.0
SUB TOTAL:(EXTRA STATE)	3	6000	96.0
(A) NPCL			0.0
(B) KESCO	1	1418497	26323.4
SUB TOTAL:BULK	1	1418497	26323.4
GRAND TOTAL:AGRA DisCom	2050342	6809394	113873.2

Table 3-12: Projected Billing Determinants for FY 10: AGRA DisCom

Projected AGRA DisCom FY 2009-10	NUMBER OF CONSUMERS	CONNECTED LOAD kW	UNIT SOLD Lac UNIT
(A) Consumer getting supply as per "Rural Schedule"			
(i) Un-metered	425770	692717	5248.0
(ii) Metered	392151	520560	9236.5
(B) Supply at Single Point for Bulk Load	18221	23985	227.9
(C1) Other Metered Domestic Consumers	927598	1540801	19234.4
(C2) Life Line Consumers/BPL	28520	115496	258.6
SUB TOTAL:(LMV-1)	1792260	2893559	34206
(A) Consumer getting supply as per "Rural Schedule"			0.0
(i) Un-metered	3067	4806	48.0
(ii) Metered	61658	114608	2787.1
(B) Private Advertising/SignPost/SignBoard/GlowSign			0.0
(C) Other Metered Non-Domestic Supply	177227	408939	3871.1
SUB TOTAL:(LMV-2)	241952	528353	6706
(A) Un-metered Supply			0.0
(i) Gram Panchayat	190	1593	87.2
(ii) Nagar Palika & Nagar Panchayat	1069	8427	296.5
(iii) Nagar Nigam	57	4402	261.5
(B) Metered Supply			0.0
(i) Gram Panchayat			9.1
(ii) Nagar Palika & Nagar Panchayat	60	4001	123.5
(iii) Nagar Nigam	20	3295	133.3
SUB TOTAL:(LMV-3)	1396	21718	911
4(A) Public Institution	7698	68655	2257.7
4(B) Private Institution	2758	33140	855.2
SUB TOTAL:(LMV-4 A & B)	10456	101795	3113
(A) Rural Schedule			0.0
(i) Un metered Supply	134715	1028832	7021.5
(ii) Metered Supply	11500	90265	2368.7
(B) Urban Schedule			0.0
(i) Metered Supply	12303	72973	8963.7
SUB TOTAL:(LMV-5)	158519	1192070	18354
6(A) Small & Medium Power (Power Loom)			0.0
(i) Rural Schedule	4693	26462	430.3
(ii) Urban Schedule	3290	21017	1214.2
6(B) Small & Medium Power			0.0
(i) Rural Schedule	4243	34188	555.2
(ii) Urban Schedule	33843	341202	4168.4
SUB TOTAL:(LMV-6)	46070	422869	6368
(A) Rural Schedule			0.0
(a) Jal Nigam	507	5697	223.6
(b) Jal Sansthan	202	3145	143.3
(c) Others (Water Works)	66	1242	80.6
(B) Urban Schedule			0.0
(a) Jal Nigam	1241	23691	304.4
(b) Jal Sansthan	700	23340	851.6
(c) Others (Water Works)	204	5751	223.5
SUB TOTAL: (LMV-7)	2920	62866	1827
(A) Metered Supply	6	118	635.5
(B) Un-metered Supply			0.0
(i) STW/Panch.Raj/WB/ID/P.Canals/LI upto 100 BHP	7248	157731	3122.3
(ii) Laghu Dal Nahar above 100 BHP	5	592	18.2
SUB TOTAL:(LMV-8)	7260	158442	3776
(A) Metered Supply	2111	40524	145.4
(B) Un-metered Supply	1368	26594	16.2
SUB TOTAL:(LMV-9)	3478	67119	162
(A) Serving			0.0
(i) Class IV Employees	3428	8950	234.1
(ii) Class III Employees	4751	13461	439.4
(iii) Junior Engineers & Equivalent	183	583	27.9
(iv) Assistant Engineers & Equivalent	57	206	10.9
(v) Executive Engineers & Equivalent	36	139	6.3
(vi) Deputy General Manager & Equivalent	6	22	0.7
(vii) C G M/GM & Equivalent posts and above			0.8
(B) Total Pensioner & Family Pensioner	6533	19521	584.1
SUB TOTAL:(LMV-10)	14994	42882	1304
(A) Urban Schedule			0.0
(i) For supply at 11kV	1423	289438	7081.4
(ii) For supply above 11kV & upto Including 66kV	129	307952	5125.7
(iii) For supply above 66kV & upto Including 132kV	107	27506	564.5
(iv) For supply above 132kV	3	34512	1805.2
(B) Rural Schedule			0.0
(i) For supply at 11kV	257	45807	1224.5
(ii) For supply above 11kV & upto Including 66kV	25	6137	188.3
SUB TOTAL:(HV-2)	1944	711352	15990
(A) For supply at & above 132kV	4	86041	1246.3
(B) For supply below 132kV	1	17860	794.2
SUB TOTAL: (HV-3)	5	103901	2041
(A) For supply at 11kV	22	14170	589.7
(B) For supply above 11kV & upto 66kV	1	1492	40.8
(C) For supply above 66kV & upto 132kV	1	9350	211.6
SUB TOTAL:(HV-4)	24	25012	842
EXTRA STATE CONSUMERS	4	6100	99.8
SUB TOTAL:(EXTRA STATE)	4	6100	100
(A) NPCL	0	0	0.0
(B) KESCO	1	1526590	27664.0
SUB TOTAL:BULK	1	1526590	27664
GRAND TOTAL: AGRA DisCom	2281285	7864628	123363

3.12 Revenue Assessment:

The detailed sales forecast described in the previous sections combined with the billing determinant information provided in section 3.6 & 3.11, may be used for assessment revenues for FY08 & FY09 and projected revenue on current year tariff for FY10, on Consolidated DisCom and AGRA DisCom are as under:-

Table 3-13 represents consolidated assessment revenue for FY08, which is derived from weighted average tariff effective from dt.01/12/04(4.4 m),dt.13/08/07(2.9 m)and dt.11/11/07(4.7 m) from UPERC Tariff Order FY 2004-05,TO FY 2006-07 and TO 2007-08.

Table3-14 tabulates estimated revenue for FY09, which is derived based on weighted average tariff effective from dt. 11/11/07(1.0 m) and dt. 27/04/08(11.0 m) from UPERC Tariff Order FY 2007-08 and TO FY 2008-09.

Table3-15 tabulates projected revenue for FY10, on current Tariff based on UPERC Tariff Order TO FY 2008-09.

Table 3-13: Assessment Revenue, Sales and Through Rate - FY2008. (Consolidated DisCom).

Consumer Category	Revenue Assessment Rs Cr				Electricity Sales	Through Rate
	01/12/2004	13/08/2007	11/11/2007	Aggregated	MU	Rs./kWh
LMV-1: Domestic Light, Fan & Power	2490	2530	2530	2516	13449	1.87
(a)Consumer getting supply as per "Rural Schedule"	632	632	632	632	6132	1.03
(b) Supply at Single Point for Bulk Loads	52	52	52	52	166	3.15
(c) Other Metered Domestic Consumers	1806	1845	1845	1830	7145	2.56
(d) Life Line Consumers		1.5	1.5	0.9	5.4	1.76
LMV-2:Non Domestic Light,Fan & Power	969	964	985	974	2601	3.75
(a)Non-Domestic(Rural)	72	71	77	74	498	1.48
(b)Non-Domestic (Urban Metered)	897	894	908	901	2103	4.28
LMV-3: Public Lamps	113	146	113	121	422	2.87
LMV-4: Insitutions	520	489	495	502	1461	3.44
LMV-5: Private Tube Wells	476	476	476	476	4317	1.10
LMV 6: Small and Medium Power	738	746	758	747	1866	4.01
(a): Small and Medium Power for Power Loom	47	52	55	51	420	1.21
(b):Small and Medium Power	691	694	703	696	1446	4.82
LMV-7: Public Water Works	283	234	235	252	741	3.41
LMV-8: S T W and Pumped Canals	380	272	277	314	1311	2.39
LMV-9: Temporary Supply	18	18	18	18	40	4.43
LMV-10: Dept.Empl. and Pensioners	23	24	25	24	149	1.61
HV-2: Large and Heavy Power	2909	2776	2821	2842	6431	4.42
HV-3: Railway Traction	259	250	258	256	653	3.92
HV-4: Lift Irrigation Works	216	212	223	218	558	3.90
Sub Total	9392	9138	9214	9261	34000	2.72
Bulk & Extra State	696	696	696	696	3,096	2.25
Consolidated DisCom	10089	9834	9910	9957	37097	2.68

Table 3-14: Assessment Revenue, Sales and Through Rate: FY 2009. (Consolidated DisCom).

Consumer Category	Assessment Revenue Rs. Cr			Electricity Sales	Through Rate
	11/11/2007	27/04/2008	Aggregated	MU	Rs./kWh
LMV-1: Domestic Light, Fan & Power	2434	2974	2935	14511	2.02
(a) Consumer getting supply as per "Rural Schedule"	686	686	686	6417	1.07
(b) Supply at Single Point for Bulk Loads	104	103	103	317	3.24
(c) Other Metered Domestic Consumers	1640	2180	2141	7757	2.76
(d) Life Line Consumers	3.8	4.8	4.8	19.6	2.43
LMV-2: Non Domestic Light, Fan & Power	1005	1082	1077	2650	4.06
(a) Non-Domestic (Rural)	111	142	140	733	1.91
(b) Non-Domestic (Urban Metered)	895	941	937	1917	4.89
LMV-3: Public Lamps	104	167	162	512	3.17
LMV-4: Insitutions	373	491	483	1349	3.58
LMV-5: Private Tube Wells	509	509	509	4654	1.09
LMV 6: Small and Medium Power	603	840	823	2104	3.91
(a): Small and Medium Power for Power Loom	98	156	151	540	2.80
(b): Small and Medium Power	505	684	671	1564	4.29
LMV-7: Public Water Works	215	250	247	787	3.14
LMV-8: S T W and Pumped Canals	229	459	442	1586	2.79
LMV-9: Temporary Supply	2.6	17.9	16.8	41.9	4.01
LMV-10: Dept. Empl. and Pensioners	38	46	46	379	1.20
HV-2: Large and Heavy Power	3187	3486	3465	7459	4.64
HV-3: Railway Traction	240	241	241	614	3.93
HV-4: Lift Irrigation Works	182	199	198	602	3.29
Sub Total	9122	10763	10645	37247	2.86
Bulk & Extra State	810	810	810	3,010	2.69
Consolidated DisCom	9932	11573	11454	40258	2.85

Table 3-15: Projected Revenue, Sales and Through Rate: FY 2010. (Consolidated DisCom)-Current Tariff

Consumer Category	Assessment Revenue	Electricity Sales	Through Rate
	Rs. Cr	MU	Rs./kWh
LMV-1: Domestic Light, Fan & Power	3175	15263	2.08
(a) Consumer getting supply as per "Rural Schedule"	687	6,584	1.04
(b) Supply at Single Point for Bulk Loads	138	475	2.90
(c) Other Metered Domestic Consumers	2,342	8,162	2.87
(d) Life Line Consumers	9	42	2.04
LMV-2: Non Domestic Light, Fan & Power	1134	2875	3.94
(a) Non-Domestic (Rural)	173	921	1.88
(b) Non-Domestic (Urban Metered)	961	1953	4.92
LMV-3: Public Lamps	189	574	3.30
LMV-4: Insitutions	492	1362	3.61
LMV-5: Private Tube Wells	534	4840	1.10
LMV 6: Small and Medium Power	907	2209	4.11
(a): Small and Medium Power for Power Loom	118	585	2.02
(b): Small and Medium Power	789	1624	4.86
LMV-7: Public Water Works	260	822	3.16
LMV-8: State Tubewells and Pumped Canals	506	1581	3.20
LMV-9: Temporary Supply	36	53	6.81
LMV-10: Departmental Employees and Pensioners	48	385	1.26
HV-2: Large and Heavy Power	3693	7854	4.70
HV-3: Railway Traction	250	634	3.94
HV-4: Lift Irrigation Works	201	614	3.27
Sub Total	11425	39067	2.92
Bulk & Extra State	846	3146	2.69
CONSOLIDATED DisCom	12271	42214	2.91

Tables 3-16, 3-17 and 3-18 tabulated the same information as Tables 3-13, 3-14 and 3-15, but for AGRA DisCom. This information has been developed using the forecast disaggregated consumer data.

Table 3-16: Assessment Revenue, Sales and Through Rate-FY 2008: (AGRA DisCom)

Consumer Category	Revenue Assessment Rs Cr				Electricity Sales	Through Rate
	01/12/2004	13/08/2007	11/11/2007	Aggregated	MU	Rs./kWh
LMV-1: Domestic Light, Fan & Power	514	520	520	518	2917	1.78
(a) Consumer getting supply as per "Rural Schedule"	136	136	136	136	1355	1.00
(b) Supply at Single Point for Bulk Loads	3	3	3	3	8	3.97
(c) Other Metered Domestic Consumers	375	381	381	379	1553	2.44
(d) Life Line Consumers		0.3	0.3	0.2	1.4	1.33
LMV-2: Non Domestic Light, Fan & Power	212	210	215	213	604	3.52
(a) Non-Domestic (Rural)	23	23	25	24	159	1.50
(b) Non-Domestic (Urban Metered)	188	187	190	189	446	4.24
LMV-3: Public Lamps	18	20	18	19	70	2.68
LMV-4: Institutions	105	96	97	100	321	3.11
LMV-5: Private Tube Wells	132	132	132	132	1114	1.18
LMV 6: Small and Medium Power	225	226	230	227	523	4.34
(a): Small and Medium Power for Power Loom	7	8	8	8	75	1.04
(b): Small and Medium Power	218	218	221	219	448	4.89
LMV-7: Public Water Works	68	57	57	61	178	3.43
LMV-8: S T W and Pumped Canals	99	70	71	81	247	3.27
LMV-9: Temporary Supply	4	4	4	4	10	4.38
LMV-10: Dept. Empl. and Pensioners	5	5	5	5	31	1.62
HV-2: Large and Heavy Power	583	555	565	569	1288	4.42
HV-3: Railway Traction	116	112	115	115	301	3.82
HV-4: Lift Irrigation Works	34	33	35	34	87	3.93
Sub Total	2113	2042	2065	2077	7691	2.70
Bulk & Extra State	615	615	615	615	2,734	2.25
AGRA DisCom	2728	2656	2680	2692	10425	2.58

Table 3-17: Assessment Revenue, Sales and Through Rate - FY 2009: (AGRA DisCom).

Consumer Category	Assessment Revenue Rs. Cr			Electricity Sales	Through Rate
	11/11/2007	27/04/2008	Aggregated	MU	Rs./kWh
LMV-1: Domestic Light, Fan & Power	478	652	640	3221	1.99
(a) Consumer getting supply as per "Rural Schedule"	151	151	151	1366	1.11
(b) Supply at Single Point for Bulk Loads	5	5	5	15	3.12
(c) Other Metered Domestic Consumers	320	493	481	1828	2.63
(d) Life Line Consumers	2.3	2.9	2.8	12.0	2.34
LMV-2: Non Domestic Light, Fan & Power	222	250	248	599	4.14
(a) Non-Domestic (Rural)	33	41	41	219	1.86
(b) Non-Domestic (Urban Metered)	189	208	207	380	5.45
LMV-3: Public Lamps	16	27	27	82	3.25
LMV-4: Institutions	77	100	98	308	3.18
LMV-5: Private Tube Wells	147	147	147	1434	1.02
LMV 6: Small and Medium Power	168	240	235	607	3.86
(a): Small and Medium Power for Power Loom	29	45	43	151	2.87
(b): Small and Medium Power	139	195	191	456	4.19
LMV-7: Public Water Works	47	58	57	176	3.23
LMV-8: S T W and Pumped Canals	60	109	106	377	2.81
LMV-9: Temporary Supply	0.4	5.0	4.6	12.5	3.71
LMV-10: Dept. Empl. and Pensioners	7	9	9	128	0.73
HV-2: Large and Heavy Power	613	669	665	1521	4.37
HV-3: Railway Traction	79	81	81	198	4.09
HV-4: Lift Irrigation Works	29	32	32	83	3.90
Sub Total	1944	2379	2348	8745	2.68
Bulk & Extra State	711	711	711	2,642	2.69
AGRA DisCom	2655	3090	3058	11387	2.69

**Table 3-18: Projected Revenue, Sales and Through Rate - FY 2010: (AGRA DisCom)-
Current Tariff.**

Consumer Category	Assessment Revenue	Electricity Sales	Through Rate
	Rs. Cr	MU	Rs./kWh
LMV-1: Domestic Light, Fan & Power	659	3421	1.93
(a) Consumer getting supply as per "Rural Schedule"	158	1,448	1.09
(b) Supply at Single Point for Bulk Loads	7	23	3.24
(c) Other Metered Domestic Consumers	491	1,923	2.55
(d) Life Line Consumers	3	26	1.02
LMV-2: Non Domestic Light, Fan & Power	271	671	4.04
(a)Non-Domestic(Rural)	54	284	1.89
(b)Non-Domestic (Urban Metered)	218	387	5.62
LMV-3: Public Lamps	29	91	3.19
LMV-4: Insitutions	98	311	3.14
LMV-5: Private Tube Wells	174	1835	0.95
LMV 6: Small and Medium Power	254	637	3.99
(a): Small and Medium Power for Power Loom	33	164	2.03
(b):Small and Medium Power	221	472	4.67
LMV-7: Public Water Works	59	183	3.25
LMV-8: State Tubewells and Pumped Canals	146	378	3.86
LMV-9: Temporary Supply	10	16	6.47
LMV-10: Departmental Employees and Pensioners	10	130	0.78
HV-2: Large and Heavy Power	689	1599	4.31
HV-3: Railway Traction	84	204	4.14
HV-4: Lift Irrigation Works	33	84	3.90
Sub Total	2517	9560	2.63
Bulk & Extra State	747	2,776	2.69
AGRA DisCom	3264	12336	2.65

4 ARR for Wheeling & Retail supply Business FY2009-10:

The Objective of the petitioner while estimating Aggregate Revenue Requirement has been to reduce or at least contain the expenses to the extent possible thereby reducing cost burden on the consumers. For the current year petitioner has endeavored to limit most of the expenses within the budget approved by Hon'ble commission in its last Tariff Order with some exception which were totally beyond the control of the petitioner.

In the ensuing year the petitioner has taken up the challenge to control most of the operating expenses within the current year level with moderate hike to only overcome the rising inflation. The petitioner is making all round effort to improve quality of supply and customer service level for this purpose. Petitioner has made elaborate plan for manpower planning and investment plan. In spite of petitioner's effort to control expenses the total Revenue Requirement has risen due to mainly uncontrollable factor such as power purchase cost and interest & financing cost. Petitioner would like to highlight that nearly all the revenue realized has been utilized in making power purchase cost, this is due to the fact that there is vast difference in revenue calculation of Hon'ble commission and the petitioner at existing Tariff order. Commission's revenue calculation is on higher side which is not at all achievable. For this Petitioner has requested Hon'ble commission to modify the figures provided in the Current Tariff Order but the response is still awaited. Again the petitioner would like to highlight that projected revenue of petitioner for current year as well as ensuing year based on the consumer mix and current tariff without taking into account the collection efficiency is even lower than the approved figure of FY2008-09 where as number of consumer as well as connected load has increased.

Hon'ble Commission has issued Distribution Tariff Regulations 2006 that require ARR shall separately indicate Aggregate Revenue Requirement (ARR) for wheeling & Retail supply function embedded in the distribution function. Till such time complete segregation of accounts between Wheeling and Retail Supply Business takes place, ARR proposals for Wheeling and Retail Supply Business shall be prepared based on an allocation statement to the best judgment of the distribution licensee. The Current Tariff Order is the first Order issued by the commission in accordance with the Distribution Tariff Regulation, in this tariff order commission used allocation methodology for segregation of wheeling & retail supply business function of ARR. The Petitioner has also adopted same methodology for driving wheeling charges, as the complete segregation of account between wheeling and retail supply business has not yet been completed.

Distribution Tariff regulation state that annual expenditure of distribution licensee comprising following components:

- a) Power Purchase Cost
- b) Transmission Charge
- c) SLDC Charges
- d) Operation & Maintenance Expense
- e) Depreciation
- f) Interest & Financing Costs and Retail Supply Business
- g) Bad and Doubtful Debts
- h) Return on Equity
- i) Taxes on Income
- j) Other expense
- k) Contribution to Contingency Reserve

This section provides above components of the ARR for FY 2009-10 both on a consolidated basis for all DisComs as well as for AGRA DisCom. The consolidated ARR forecast is necessary because the uniform statewide retail tariff structure currently in place requires an aggregate approach. The petitioner has estimated ARR for ensuing year based on provisional un-audited account of FY2007-08 and expenses available till date of FY2008-09. In order to put the various estimated amounts in proper context, the corresponding figures for FY2008 and various estimates for FY 2009 & FY 2010 based on year-to-date experience are also presented where it is considered appropriate. For each such major account category of expenses, an explanation for the derivation is given, along with the logic for departing from FY 08 & FY 09 values, if applicable.

Further Tariff regulation provide that O&M expenses and other expense shall be escalated on the basis of prevailing rate of inflation from base figure & inflation shall be calculated on the basis of indexes notified by central government .Therefore Petitioner has calculated inflation index in following section:

4.1 Escalation Index/Inflation Rate:

Regulation issued by Hon'ble commission provides that expenses of the base year shall be escalated at inflation rate notified by central government for different years. The inflation rate for this purpose shall be weighted average of wholesale Price Index and Consumer Price Index in the ratio of 60:40. Therefore for the purpose of this ARR petitioner has used this methodology in arriving at Escalation Index/ Inflation Rate. Calculation as tabulated below:

Inflation Rate=0.6*Inflation based on WPI + 0.4*Inflation based on CPI

Table 4-1: Escalation Index

Month	Wholesale Price Index			Consumer Price Index		
	2007	2008	2009	2007	2008	2009
Jan	208.8	218.1	0	127	134	148
Feb	208.9	219.9	0	128	135	148
Mar	209.8	225.5	0	127	137	
Apr	211.5	228.5	0	128	138	
May	212.3	231.1	0	129	139	
Jun	212.3	237.4	0	130	140	
Jul	213.6	240	0	132	143	
Aug	213.8	241.2	0	133	145	
Sep	215.1	241.5	0	133	146	
Oct	215.2	239	0	134	148	
Nov	215.9	234.2	0	134	148	
Dec	216.4	229.7	0	134	147	
Inflation		6.15%			9.70%	
Weighted Average (CPI 40%:WPI 60%)					7.57%	

WPI-<http://eaindustry.nic.in>CPI-<http://labourbureau.nic.in/intab.html>

4.2 Power Purchase Costs:

Some key issues to be considered in forecasting power purchase units & costs for FY2009-10:-

- Actual power purchase cost and units of FY2008-09.
 - Trend observed in the previous and current year.
 - Impact of loss reduction initiatives.
 - Estimated growth in sales.
 - Share of capacity available from various Generators to the UPPCL.
1. For ensuing year the petitioner has projected aggregate DisCom losses of 22.32% which calls significant reduction in commercial as well as technical losses. The reduction in these losses will be achieved by bringing the unauthorise use of electricity into the billing net and accurately measuring the consumption of electricity.
 2. Distribution licensees are purchasing power from UPPCL at the rate of bulk supply tariff decided by the Commission where as UPPCL procures power from various generating station i.e. central as well as state generation station on behalf of distribution companies . UPPCL is currently taking steps to ensure that its purchases are optimized with respect to merit order dispatch and avoid unscheduled interchange (UI), based on frequency deviations from 50 Hz. Purchases are

currently being so optimized on a “short-term” day-to-day and hour-to-hour basis. The current power procurement plan is based on an exercise of merit order dispatch and probabilistic analysis conducted on a monthly basis.

4.2.1 Power purchases summary

Summary of energy balances and corresponding purchased power details are shown in Table 4-2 for ensuing year and a summary on year wise Power purchases from FY07 (actual) to FY10 (estimated) are computed in Table 4-3

A detailed Power Procurement Plan and “merit order” dispatch are provided in **Annexure- A.**

Table 4-2: Details of Power Procurement Cost from various Power Stations for FY-2010.

Name of Power Plant	Energy Procurement (MU)	Total Cost(Rs. Crores)				Average Cost (RS/KWh)
		Fixed Cost	Other Fixed Cost	Variable Cost	Total cost	
UPRVUNL						
Anpara A	4004	234.04	0.0000	397.49	631.53	1.58
Anpara B	6264	708.01	0.0000	610.21	1318.22	2.10
Harduaganj	796	95.02	0.0000	230.27	325.29	4.09
Obra A	1417	103.42	0.0000	226.98	330.39	2.33
Obra B	3766	324.96	0.0000	505.97	830.93	2.21
Panki	823	101.63	0.0000	188.06	289.69	3.52
Paricha	805	98.26	0.0000	191.64	289.89	3.60
Paricha Ext.	2526	361.72	0.0000	484.15	845.87	3.35
Total	20401	2027.06	0.00	2834.77	4861.82	2.38
UPJVNL						
Khara	208.00	38.90	8.9978	0.00	47.90	2.30
Matatila	66.67	3.68	0.3310	0.00	4.01	0.60
Obra (Hydel)	175.00	11.47	0.8587	0.00	12.33	0.70
Rihand	416.50	21.62	2.0048	0.00	23.62	0.57
U.G.C.Power Stations.	25.00	5.74	0.1799	0.00	5.92	2.37
E.Y.C.Power Stations	11.00	0.00	0.0000	2.62	2.62	2.39
Sheetla	9.53	0.00	0.0000	3.43	3.43	3.59
Total	912	81.42	12.3722	6.05	99.84	1.10
NHPC						
Chamera	452	52.11	6.65	0.00	58.76	1.30
Chamera-II	370	79.42	12.59	32.59	124.61	3.37
Dhauliganga	284	51.29	1.52	24.99	77.81	2.74
Salal I&II	240	15.83	0.84	0.00	16.67	0.70
Tanakpur	104	9.80	0.11	9.15	19.07	1.83
Uri	534	76.39	4.12	0.00	80.51	1.51
Dulhasti	466	123.40	8.88	0.00	132.28	2.84
Sewa-II	39	0.00	0.00	10.92	10.92	2.79
Total	2489	408.25	34.72	77.66	520.63	2.09
NTPC						
Anta	728	28.53	0.04	180.42	208.99	2.87
Auriya	1530	59.93	0.00	413.92	473.85	3.10
Dadri Thermal	642	37.33	3.14	179.27	219.74	3.42
Dadri Gas	1782	71.81	0.00	531.78	603.58	3.39
Dadri EXT.	666	0.00	0.00	223.03	223.03	3.35
Rihand-I	2771	164.27	10.26	371.42	545.95	1.97
Rihand-II	2367	198.38	14.25	331.06	543.70	2.30
Singrauli	5533	170.28	16.78	559.71	746.77	1.35
Tanda	2986	195.84	5.91	965.47	1167.22	3.91
Unchahar I	1951	115.10	4.50	305.80	425.40	2.18
Unchahar II	1032	73.40	6.51	173.22	253.13	2.45
Unchahar-III	479	58.42	1.46	79.59	139.47	2.91
Farakka TPS	342	18.62	0.25	67.60	86.48	2.53
Kahalgaon St-I	724	47.40	1.01	139.04	187.44	2.59
Talchar	83	2.65	0.10	10.68	13.43	1.61
Kahalgaon Ph-II ST-II	1127	0.88	0.00	205.64	206.53	1.83
Total	24743	1242.85	64.21	4737.64	6044.70	2.44
NPCIL						
NAPP	300	0.00	0.00	57.46	57	1.92
RAPP	477	0.00	0.00	132.61	133	2.78
Total	777	0.00	0.00	190.06	190	2.45
IPP/JV/Bilateral/ Others						
NATHPAJHAKRI HPS	1244	243.25	33.93	109.61	387	3.11
CO-GEN	1678	0.00	0.00	547.16	547	3.26
TALA POWER	184	0.00	0.00	33.86	34	1.84
VISHNUPRAYAG	1774	259.12	30.55	169.35	459	2.59
TEHRI STAGE-I	1241	258.73	29.93	310.25	599	4.83
Rosa Power Project	613	0.00	0.00	183.81	184	3.00
Bilateral	1100	0.00	0.00	847	847	7.70
Others	642	0.00	0.00	408	408	6.35
TOTAL	57800	4521	206	10455	15181	2.63
PGCIL charges	27448				604	0.22
Grand Total					15785	2.73

Table 4-3: Power Purchase Summary - Actual FY 2007 to FY 2009 & Proposed FY 2010.

Name of Power Station/Organisation	2006-07 Actual	2007-08 Actual	2008-09 Actual	2009-10 Proposed
Power Procurement(MU)				
UPJVNL	1,393	890	1,058	912
UPRVUNL	18,916	18,600	19,628	20,401
NPCIL(NAPP & RAPP)	691	506	544	777
NTPC	22,492	24,440	24,191	24,743
NHPC	1,956	2,412	2,471	2,489
Nathpa Jhakri HPS	990	1,122	1,111	1,244
Cogeneration and Biomass	846	1,812	1,581	1,678
VishnuPrayag	837	1,625	1,767	1,774
Tehri St.-I	314	1,026	1,237	1,241
Tala Power	37	141	168	184
Others/PTC	477	254	1,760	1,100
UI	2,069	2,018	760	642
Kanauria chemicals(CPP)	83	154	97	
Rosa Power Project				613
WR		0.91	1	
Total Power Procurement (MU)	51,101	55,002	56,375	57,800
Power Procurement Cost (Rs. Crs.)				
UPJVNL	75	33	110	100
UPRVUNL	3441	3221	4422	4862
NPCIL(NAPP & RAPP)	162	122	134	190
NTPC	4542	4860	5119	6045
NHPC	375	494	489	521
Nathpa Jhakri HPS	293	287	356	387
Cogeneration and Biomass	209	515	490	547
VishnuPrayag	180	364	463	459
Tehri St.-I	118	456	627	599
Tala Power	7	26	31	34
Others/PTC	258	154	1250	847
UI	821	837	526	408
Kanauria chemicals(CPP)	19	33	18	
Rosa Power Project				184
WR		0.37	1	
PGCIL Charges	325	419	524	604
Payment to UPJVNL against UPERC Order dt.10.10.08				10
Total Power Procurement cost (Rs. crs.)	10826	11824	14560	15795
Power Procurement Cost (Rs./kWh)				
UPJVNL	0.54	0.37	1.04	1.10
UPRVUNL	1.82	1.73	2.25	2.38
NPCIL(NAPP & RAPP)	2.35	2.41	2.46	2.45
NTPC	2.02	1.99	2.12	2.44
NHPC	1.92	2.05	1.98	2.09
Nathpa Jhakri HPS	2.96	2.56	3.20	3.11
Cogeneration and Biomass	2.48	2.84	3.10	3.26
VishnuPrayag	2.15	2.24	2.62	2.59
Tehri St.-I	3.75	4.45	5.07	4.83
Tala Power	1.88	1.84	1.85	1.84
Others/PTC	5.41	6.07	7.10	7.70
UI	3.97	4.15	6.92	6.35
Kanauria chemicals(CPP)	2.33	2.12		
WR		4.07		
PGCIL Charges	0.12	0.12	0.18	0.22
Avg. Power Procurement Cost (Rs./kWh)	2.12	2.15	2.58	2.73

Note:1. The energy from ER(Farakka, Kahalgaon St.I&II and Talchar has been included in NTPC.

2. The PGCIL charges @Rs0.21/kWh has been levied on energy procured from NTPC,NPCIL,NHPC,SJVNL,TEHRI,TALA and OTHERS (Total:27,448MU)

As can be seen above, power purchase cost is projected to be Rs.15795 Cr in FY10, which is in line with the current trended cost. Although a significant part of this increase over the past years may be attributed to the loss assumptions used, both load growth and higher-than-usual price escalation in oil and coal have more of an influence on this price increase.

4.2.2 Power Procurement cost from UPPCL by DisCom:

The distribution tariff Regulation issued by Hon'ble commission state that the total power purchase cost for distribution licensee's requirement for sale to its consumers shall be estimated on the basis of merit order principle. In the absence of allocation of PPAs to DisComs by GOUP, as on date UPPCL is carrying out the function of power procurement and bulk supply to DisComs. As a result cost of power purchase by the distribution companies from UPPCL would be calculated through bulk supply tariff (BST). The BST has been determined under the principle that all DisComs would have paid the same average price in FY10. Power purchase costs by DisCom as described above, are summarized below:

Table 4-4: Power Purchase Costs AGRA DisCom

Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
Energy Procured	14,246	14,409	15,475
Bulk Supply Tariff (Rs/kWh)	2.30	2.76	2.91
Power Procurement Cost from UPPCL	3271.02	3975.06	4497.68

Table 4-5: Power Purchase Costs by Consolidated DisCom

Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
Energy Procured	51,493	52,779	54,345
Bulk Supply Tariff (Rs/kWh)	2.30	2.76	2.91
Power Procurement Cost from UPPCL	11,823.66	14,560.00	15,795.00

4.3 Transmission & SLDC charges:

4.3.1 Inter state Transmission Charges:

The inter state transmission charges payable by the petitioner to PGCIL has been projected to Rs 524 cr for FY 2008-09 and Rs 604 cr for FY2009-10. These charges have been incorporated in Power Procurement Cost. The petitioner submits that while considering power procurement to meet the State requirement, losses external to its system, i.e. in the Northern Region PGCIL system need to be accounted for. The availability of power for the petitioner (i.e. at UPPCL system boundary) from various sources gets reduced to the extent of these losses and the petitioner has accordingly incorporated them while drawing up the energy balance and merit order dispatch for meeting the State requirement.

4.3.2 Intra State Transmission Charges:

The intra state Transmission charges for current year payable by Petitioners are on the basis of actual energy received & the uniform charges are to be paid by all the four Distribution Licensees. Actual energy delivered to Distribution Licensee & corresponding Transmission charges are to be provided by the transmission Licensee. Accordingly Licensee has estimated Cost of intra state Transmission charges for ensuing year as well as for the current year in the tables given below. The Transmission licensee is also performing the function of SLDC, as such SLDC cost is embedded in the transmission charges.

Table 4-6: Transmission Charges AGRA DisCom:

Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
Energy Procured	14,246	14,409	15,475
Transmission Tariff (Rs/kWh)	0.20	0.22	0.24
Transmission Cost (Rs. Cr)	287.29	310.68	375.85

Table 4-7: Transmission Charges Consolidated DisCom

Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
Energy Procured(MU)	51,493	52,779	54,345
Transmission Tariff (Rs/kWh)	0.20	0.22	0.24
Transmission Cost (Rs. Cr)	1,038.47	1,137.96	1,319.90

4.4 Operation & Maintenance Expenses

Operation & maintenance expenses comprise Employee costs, Administrative & General Expenses and Repair & Maintenance expenses. The regulation 4.3 of the Distribution Tariff Regulation issued by the Commission stipulates:

- 1- *The O&M expenses comprise of employee cost, repairs & maintenance(R&M) cost and administrative & general (A&G) cost. The O&M expenses for the base year shall be calculated on the basis of historical/audited costs and past trend during the preceding five years. However, any abnormal variation during the preceding five years shall be excluded. For determination of the O&M expenses of the year under consideration, the O & M expenses of the base year shall be escalated at inflation rates notified by the Central Government for different years. The inflation rate for above purpose shall be the weighted average of Wholesale Price Index and Consumer Price Index in the ratio*

of 60:40. Base year, for these regulations means, the first year of tariff determination under these regulations

- 2- Where such data for the preceding five years is not available the Commission may fix O&M expenses for the base year as certain percentage of the capital cost.*
- 3- Incremental O&M expenses for the ensuing financial year shall be 2.5% of capital addition during the current year. O&M charges for the ensuing financial year shall be sum of incremental O&M expenses so*
- 4- worked out and O&M charges of current year escalated on the basis of predetermined indices as indicated in regulation 4.3 (1)..”*

However in last tariff order Commission was of the opinion that a suitable norm for allowance of O&M expenses could be adopted only after undertaking a thorough study of the O&M expenditure based on the past performances, and the cost drivers of the same, through a separate process. This study also has to be backed by audited information for the past which needs to be made available by the licensees. Only then the true picture if the trend in the O&M expenses may emerge. Till any such norm for O&M expenditure is determined, the Commission emphasised considering the individual elements of O&M expenditure.

As stated above, in the absence O&M norms petitioner has estimated individual components of O&M expenses based on methodology described in following section:

4.4.1 Employee costs:

The projection of employee costs involves a detailed examination of the various components of salary such as basic pay and dearness allowance for the various grades of employees. It would also involve an understanding of the extent of retirements as well as the manpower additions planned. Considering above Petitioner has estimated employee cost for FY2009-10 based on un-audited data of FY2007-08 and data available for FY2008-09 to date. Here it is also to mention that in FY 2009-10 petitioners have taken impact of increase due to implementation of sixth pay commission. The employee cost for Consolidated DisCom and AGRA DisCom are computed in following table:

Table 4-8: Details of Employee Cost- AGRA DisCom

Details (Rs. Cr)	FY 2007-08	FY 2008-09	FY 2009-10
	Unaudited	Projection	Projection
Basic Salaries	82.83	86.14	145.58
Overtime			
Dearness Allowance	32.28	45.01	36.40
Other allowances	5.98	6.89	11.65
Bonus / Ex-gratia	1.52	2.18	3.03
Medical expenses re-imbursement	0.84	0.93	1.03
Leave travel assistance	0.06	0.01	0.01
Interim Relief/ Other/arrear of Pay commission	0.96	-	-
Earned leave encashment	4.34	1.91	2.65
Leave Salary contribution	-		
Payment under workmen's compensation Act	0.26	0.17	0.29
Staff welfare expenses	0.12	0.13	0.22
Employers Contribution for Pension & Gratuity	18.78	25.02	34.72
Employee Costs (before charge to capital)	147.99	168.41	235.58
Less expenses capitalized	49.66	25.26	35.34
Net employee cost	98.32	143.14	200.25

Table 4-9: Details of Employee Cost: Consolidated DisCom

Details (Rs. Cr)	FY 2007-08	FY 2008-09	FY 2009-10
	Unaudited	Estimated	Projected
Basic Salaries	412.78	457.10	772.50
Overtime	-	-	-
Dearness Allowance	194.08	238.83	193.12
Other allowances	33.24	36.57	61.80
Bonus / Ex-gratia	(0.82)	11.59	16.09
Medical expenses re-imbursement	9.37	10.38	11.50
Leave travel assistance	0.16	0.05	0.08
Interim Relief/ Other	4.29	-	-
Earned leave encashment	26.08	10.15	14.08
Payment under workmen's compensation Act	0.85	0.91	1.54
Staff welfare expenses	2.78	3.26	5.51
Employers Contribution for Pension & Gratuity	95.52	132.78	184.24
Employee Costs (before charge to capital)	778.34	901.63	1,260.47
Less expenses capitalized	176.19	135.24	189.07
Net employee cost	602.15	766.39	1,071.40

As mentioned above evolution of sub account of employee cost has been forecasted from base figure of FY2007-08 balance sheet and actual figure available for FY2008-09 till date. While projecting the expenses for ensuing year, petitioner has endeavoured to control the employee expenses but cost has increased due to impact of pay commission factor which is totally beyond the control of the petitioner. Various sub account are estimated as follows:

- Basic salary: The petitioner would like to submit that the projected growth in basic salaries in FY2008-09 due to mainly time bound increment and annual increase in pay. The annual increase depends on the pay scale of an employee and such increase is mandatory for employees. Therefore petitioner has estimated basic salaries for FY2008-09 as per actual cost incurred on this account till date & for FY2009-10 basic salaries has been projected to increase by 69% from FY2008-09 cost due to implementation of sixth pay commission recommendation.
- Dearness Allowance (DA) is estimated to be 52.25 % (47% for 3 month & 54% for 9 month) for FY2008-09 and for FY2009-10 DA has been projected 25%.
- Other allowance has been forecast to be 8% of basic salary.
- Likewise, Medical Expenses have been forecast to increase by inflation index per year from FY07, taking 3% as contingency.
- Pension and Gratuity have been calculated at 16.7% and 2.38% (i.e., 19.08%) of Basic Salary and Dearness Allowance.
- Leave travel Assistance & compensation is assumed to be .01% & 0.2% of Basic Pay respectively.
- Staff welfare ex. Is assumed to in same ratio as actually incurred in FY09.
- Employee Expenses Capitalized has been calculated as 15% of total Employee Costs, which is in line with the policy adopted by the commission in its last tariff order.

4.4.2 Administration and General (A&G) Expenses:

These expenses are incurred by the petitioner for meeting the day-to-day expenses relating to the administration of its offices, insurance, communication, professional charges, audit fees, advertisement expenses, freight etc. All these expenses are directly affected by inflation .Therefore A&G expenses have been projected considering the impact of inflation and need for addition of more substation and offices. Forecast A&G expenses for the consolidated DisComs and for AGRA DisCom are summarized below in Tables 4-17 and 4-18 respectively, beginning with the figures from the un-audited statements of FY08.

- As a reflection of the continuing commitment of the Petitioner to keep costs under control, almost all A&G Expenses have been escalated by inflation index per year across the board to only offset the effect of inflation.
- In addition to above regulatory expenses Rs 10 lacs application fees and 0.05% of revenue license fees has been added in A&G expenses in FY2008-09 & FY2009-10

which is Rs 1.63 & 1.73 crs respectively for AGRA DisCom and Rs 6.13 cr & 6.54 cr for Consolidated DisCom.

- Billing & collection expenses also include expenses related to information technology. Billing & collection expenses relate to expenses incurred due to out sourcing of billing work, use of hand held machines and GIS mapping of consumers. Further petitioner is planning to use various information technology (IT) initiatives such as implementation of software solution, networking (Both local area network & wide area network), retail billing solution, Energy billing System, Energy accounting system etc, to drive operational efficiency improvement. Therefore an additional amount of Rs 1.25 cr has been added under this head each in FY2008-09 and FY2009-10 for AGRA DisCom.
- Capitalized A&G expanses are assumed to be 15 % of A&G cost This is consistent with the approach adopted by the Commission in its current Tariff Order.
- The petitioner has taken several steps for enhancing customer care, system augmentation and computerization for better process management .It has also taken steps to increase communication network with the field units/ persons so as to reduce the down time for restoration of supply and better data management.

Table 4-10: A &G Expenses: AGRA DisComs

Details (Rs.Cr)	FY 2007-08	FY 2008-09	FY 2009-10
	Unaudited	Projection	Projection
Rent, Rates & Taxes	0.16	0.17	0.18
Insurance	0.32	0.35	0.37
Telephone, Postage & Telegrams, Telex charges	2.37	2.55	2.74
Legal charges	0.81	0.87	0.94
Audit fees	0.03	0.04	0.04
Consultancy charges	0.06	0.06	0.07
Technical fees and professional charges	-	-	-
Conveyance and traveling	1.25	1.34	1.45
Regulatory expenses	-	1.63	1.73
Electricity Charges	11.56	12.43	13.37
Other expenses	5.84	3.32	3.57
Billings and Collection Expenses	9.34	11.30	12.06
Total	31.73	34.05	36.51
Capitalized	7.59	5.11	5.48
Net	24.14	28.94	31.03

Table 4-11: A&G Expenses: Consolidated DisComs:

Details (Rs. Cr)	FY 2007-08	FY 2008-09	FY 2009-10
	Unaudited	Estimated	Projected
Rent, Rates & Taxes	1.19	1.28	1.38
Insurance	0.91	0.97	1.05
Telephone, Postage & Telegrams, Telex charges	7.15	7.69	8.27
Legal charges	2.72	2.92	3.14
Audit fees	0.04	0.05	0.05
Consultancy charges	0.21	0.23	0.25
Technical fees and professional charges	0.01	0.01	0.01
Conveyance and traveling	8.02	8.63	9.29
Regulatory expenses	-	6.13	6.54
Electricity Charges	43.07	46.33	49.84
Other expenses	8.08	11.62	12.50
Billings and Collection Expenses	28.11	35.24	37.53
Total	99.52	121.10	129.83
Capitalized	24.65	18.17	19.47
Net	74.87	102.94	110.36

4.4.3 Gross Fixed Assets (GFA) Balances and Capital Formation Assumptions:

The estimated numbers of ARR component are dependent on FY10 opening balance of GFA, one of which is R&M. It is therefore appropriate at this point to provide FY10 GFA estimates, as well as estimates for other fixed asset accounts. The assumptions used for projecting GFA and CWIP are as follows:

- The opening GFA and CWIP for AGRA DisCom for FY 2008-09 have been taken as per the closing figures provisional annual accounts of FY 2007-08.
- 40% the opening CWIP and 40% of investment made during the year, expenses capitalised & interest capitalised (40% of total investment) has been assumed to get capitalised during the year.
- Investment through “deposit work “has not been taken for capital formation as per policy adopted by commission in its last tariff Order. Thus investment in capital formation shown in table 4.15&4.16 don't include work funded through deposit work.

Table 4-12&4-13 shows Licensee's investment plan for FY09 and FY10 along with the proposed funding of each component of the investment plan. The detail of activities carried out in each scheme has already been explained in section 2.4.5

- Under the RGGYY programme petitioner has proposed investment of Rs 30.02 cr in FY2008-09 & Rs 58.48 cr in FY2009-10. In the last tariff order Commission has assumed only 10% as equity and rest amount treated as grant as envisaged in central

government scheme for RGGYY where as Go UP provided entire amount as equity. Here again it is to submit that under this scheme Go UP provide entire fund required for RGGYY programme in the form of equity so it is requested that entire fund under RGGYY be treated as equity fund for investment.

Table 4-12: Investment Plan: AGRA DisCom:

DISTRIBUTION INVESTMENT PLAN	FY2008-09				
	Agra				
Rs cr	Loan	Grant	Deposit	Equity	Total
RGGYY				30.02	30.02
PTW				63.69	63.69
Replacement of Poles				7.28	7.28
Replacement of Conductors				7.00	7.00
Replacement of Old Switchgears				23.40	23.40
Laying of ABC	30.86			39.45	70.31
Bifurcation of feeders				30.21	30.21
Installation of 1-phase meters				10.81	10.81
Installation of 3-phase meters				4.00	4.00
Augmentation of Distribution System				81.70	81.70
Metering of Distribuion Transformers				56.47	56.47
Information Technology				6.50	6.50
Equity for Shell Companies				-	-
Ambedkar Gram Sabha				108.08	108.08
GoUP Equity for Distribution Works				287.62	287.62
APDRP	29.92			-	29.92
				-	-
Others					-
Deposit Works			56.80		56.80
					-
Grand Total	60.78	-	56.80	756.24	873.81

Table 4-13: Investment Plan: AGRA DisCom:

DISTRIBUTION INVESTMENT PLAN	FY2009-10				
	Agra				
Rs cr	Loan	Grant	Deposit	Equity	Total
RGGYY				58.48	58.48
PTW				37.40	37.40
Replacement of Poles				8.29	8.29
Replacement of Conductors				7.70	7.70
Replacement of Old Switchgears				14.30	14.30
Laying of ABC	58.52			127.29	185.81
Bifurcation of feeders	23.94			37.90	61.84
Installation of 1-phase meters				37.85	37.85
Installation of 3-phase meters				0.28	0.28
Augmentation of Distribution System				199.12	199.12
Metering of Distribuion Transformers				-	-
Information Technology				26.01	26.01
Equity for Shell Companies				-	-
Ambedkar Gram Sabha				105.11	105.11
GoUP Equity for Distribution Works				-	-
APDRP	22.00			-	22.00
					-
Others					-
Deposit Works			85.73		85.73
					-
Grand Total	104.46	-	85.73	659.73	849.92

Table 4-14: Capital Formation during FY 09: AGRA DisCom

Rs crore	Balance 31-Mar-08	Invest- ments	Cap interest	Cap expenses	To GFA	Depreciation	Balance 31-Mar-09
	(1)		(2)	(3)	(4)	(5)	
Gross Fixed Assets	2,170.89				506.70		2,677.60
Accumulated Depreciation	1,198.77					190.06	1,388.83
Work in Progress	392.22	817.01	27.15	30.37	(506.70)		760.05

Table 4-15: Capital Formation during FY 10: AGRA DisCom

Rs crore	Balance 31-Mar-09	Invest- ments	Cap interest	Cap expenses	To GFA	Depreciation	Balance 31-Mar-10
	(1)		(2)	(3)	(4)	(5)	
Gross Fixed Assets	2,677.60				637.22		3,314.81
Accumulated Depreciation	1,388.83					234.90	1,623.73
Work in Progress	760.05	764.19	27.99	40.81	(637.22)		955.83

- Notes:** (1) Balances as per provisional figures of FY08.
(2) Capitalized expenses are from Table 4-15 to 4-18
(3) Transfer from WIP to GFA=40% of beginning WIP+40% of total investment, capitalized Interest, Capitalized employee cost, capitalized A&G expenses
(4) Depreciation expense = 7.84% of average GFA.

4.4.4 Repair and Maintenance (R&M) Expenses

The Hon'ble commission in the last Tariff Order has approved a total R&M expenditure of Rs 265.44 crs of current year for consolidated DisComs while petitioner has estimated the total R&M expenses for current year as Rs 442 crs which is more than approved amount of the commission. This increase is mainly attributed to substantial increase in raw material and fuel cost. The metal prices have increased phenomenally as compared to past few years. This has substantially increased the cost burden to the petitioner. Moreover, the petitioner has added a number of transformers, cables, grid substation, etc for which there has been an increase in the amount of annual maintenance contracts, this has translated to a higher R&M expenses in the ensuing year for the petitioner. Further petitioner has initiated proactive preventive maintenance and capital expenditure to improve the quality of supply in its distribution area and reduction in number of overloaded transformer etc. The Forecast R&M expenses for the consolidated DisComs and for AGRA DisCom are summarized below in Tables 4-16 and 4-17 respectively, beginning with the provisional figures of FY08.

- The forecast R&M Expenses are estimated as 4.5% of the opening GFA balances for FY10, it is a slight increase over assumption as adopted by the petitioner last petition for distribution plant. It is mainly due to the facts that the distribution network in the State is currently getting inadequate maintenance thereby having an impact on the quality and quantity of supply of power. Therefore, there is a urgent need to provide

more funds for R&M activities. So, Petitioner has provided R&M expenses as 4.5% of opening GFA. It is to be noted that Repair & Maintenance Expenses have grown over a CAGR of 23.67% in last four years.

- Unfortunately due to tight financial position and heavy cash losses, system improvement and preventive maintenance are not achieved to the expected level due to frequent breakdowns and supply interruptions. Petitioner always spent money, which are urgently required for restoration of supply. In addition to these planned activities there will be some unforeseen R&M expenses, which are inevitable. The amounts, which are so worked out, are spread out proportionally among the sub-accounts. It can be seen in Table 4-16 and Table 4-17 that most R&M spending will be in the Plant & Machinery and Lines & Cable Network.

Table 4-16: R&M Expenses: Consolidated DisCom

Details (Rs.Cr)	FY 2007-08 Unaudited	FY 2008-09 Estimated	FY 2009-10 Projected
Plant & Machinery	150.06	189.58	235.52
Building	6.73	8.21	10.24
Civil works	0.06	0.08	0.11
Other Expenses	0.02	0.02	0.02
Lines, Cable Network, etc	173.78	230.84	283.84
Vehicles	8.18	12.30	14.75
Furniture & Fixtures	0.07	0.09	0.11
Office equipment	0.85	0.96	1.17
Total	339.75	442.08	545.75

Table 4-17: R&M Expense: AGRA DisCom

Details (Rs.Cr)	FY 2007-08 Unaudited	FY 2008-09 Projection	FY 2009-10 Projection
Plant & Machinery	44.76	46.06	56.81
Building	0.79	0.82	1.01
Lines, Cable Network, etc	45.85	47.19	58.20
Vehicles	2.75	2.83	3.50
Furniture & Fixtures	0.02	0.02	0.03
Office equipment	0.74	0.76	0.94
Total	94.92	97.69	120.49

4.5 Depreciation expense:

Commission in its Distribution Tariff regulation has specified methodology for computing depreciation. Commission allowed depreciation in its last tariff order on the basis of assessed weighted average depreciation rate and methodology specified in the regulation. Petitioner has used same methodology for computing depreciation in this ARR.

- Weighted average depreciation rate of 7.84% has been used.
- The depreciation has been charged for the entire year on the opening GFA and pro-rata basis for the assets capitalized during the year.
- Opening GFA for FY2009 has been taken from provisional balance sheet of FY2007-08.
- Opening GFA for FY2009-10 and assets capitalized has already been dealt in section 4.1.9.

Accordingly depreciation expense has been computed Rs 190.06 crs and Rs234.90 Crs for AGRA DisCom and Rs 860.51Crs & Rs1071.21 Crs for Consolidated DisCom for FY09& FY10 respectively.

4.6 Provision for Bad and Doubtful Debts

Provisions have been made for bad and doubtful debts at 2% of revenue receivables in line with the section 4.4 of UPERC (Terms and Conditions for Determination of Distribution Tariff) Regulations-2006 issued on 6th October 2006. Accordingly the Bad and Doubtful Debts have been estimated as 2% of the revenue receivable. In the last Tariff Order Commission disallowed this component due to absence of any clear-cut policy. It is further submitted that provision for bad & doubtful debts are accepted accounting principle even in sector like Banking the provisioning of un-collectible dues are considered as a normal commercial practice.

Despite the Commission's views on this component of ARR, It is humbly submitted to the Hon'ble Commission that annual provisioning towards bad and doubtful debts is an accepted method of accounting and also recognised by other State Electricity Regulatory Commissions. The amount, if any, written off towards bad debts is only adjusted against the accumulated provisions in the books, irrespective of the actual amount of bad debts during any particular year. Therefore petitioner maintains that this is a legitimate ARR component. As such petitioner has made provisions for bad debts of Rs 149.37Cr. for Consolidated DisCom & Rs 47.94 Cr for AGRA DisCom for ensuing year. The forecast Provision for Bad and Doubtful Debts for the Consolidated DisComs and AGRA DisCom are summarized below in Tables 4-18 and 4-19 respectively.

Table 4-18: Provision for Bad and Doubtful Debts: Consolidated DisCom.

Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
Revenue Receivable	6,275.90	6,917.14	7,468.60
Percentage of debt Allowed	1%	2%	2%
Provision of Bad debts	66.09	138.34	149.37

Table 4-19: Provision for Bad and Doubtful Debts: AGRA DisCom

Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
Revenue Receivable	1,830.10	2,135.94	2,397.06
Percentage of debt Allowed	1%	2%	2%
Provision of Bad debts	18.56	42.72	47.94

4.7 Interest and Financing Costs:

The interest and finance cost for FY 09 are based on current schedule of long-term debt repayment and new debt requirements for capital investment plan & working capital requirement.

The forecast Provision for Interest and Financing Costs of AGRA DisCom are summarized as under beginning with the FY08 provisional figures.

- Interest & financing cost include interest on working capital requirement. Here petitioner would like to submit that working capital requirement of the licensee is more than what commission allowed in its last tariff order based on normative value. It is mainly due to the fact that petitioner is facing severe cash crunch as there is vast difference between revenue assessment of petitioner & commission's projection and petitioner find it difficult to meet out even its power purchase obligation from its revenue assessment. Therefore it is humbly requested to kindly allow working capital requirement as requested.

Table 4-20: Projected Interest & Finance Cost AGRA DisCom

S No.	Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
1	Gross Interest & Financing Cost	150.10	297.51	354.34
3	Discount to Consumers	0.20	0.23	0.25
	Total	150.30	297.74	354.59
	Less: Interest Capitalised	21.86	27.15	27.99
	Net Interest & Finance Cost	128.44	270.59	326.60

Table 4-21: Projected Interest & Finance Cost Consolidated DisCom

S No.	Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
1	Gross Interest & Financing Cost	588.89	1,136.45	1,296.74
2	Discount to Consumers	11.38	14.14	14.87
	Total	600.27	1,150.58	1,311.61
	Less: Interest Capitalised	59.90	85.03	90.01
	Net Interest & Finance Cost	540.37	1,065.55	1,221.60

4.7.1 Interest on Consumer security deposit:

Section 47(4) of electricity Act 2003 states that “*the distribution licensee shall pay interest equivalent to the bank rate or more, as may be specified by the concerned State Commission, on the security referred to in sub- section (1) and refund such security on the request of the person who gave such security*”.

The Hon'ble commission in last Tariff order allowed interest to consumer on security deposit on opening balance of security deposit at the beginning of the year at prevailing bank rate of 6% as notified by RBI. In this petition interest on security deposit has been computed on same manner. Computation of the same given below:

Table 4-22: Consumer security Deposit AGRA DisCom

S No.	Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
1	Opening Balance of Security Deposit	135.61	154.91	176.80
2	Addition During the Year	19.29	21.89	13.07
3	Closing Balance of security Deposit	154.91	176.80	189.87
4	Rate of Interest		6%	6%
5	Interest Payable on Security Deposit	20.14	10.61	11.39

Table 4-23: Consumer security Deposit Consolidated DisCom

S No.	Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
1	Opening Balance of Security Deposit	903.41	1,004.52	1,174.48
2	Addition During the Year	101.11	169.95	64.09
3	Closing Balance of security Deposit	1,004.52	1,174.48	1,238.57
4	Rate of Interest		6%	6%
5	Interest Payable on Security Deposit	67.94	70.47	74.31

4.8 Other Income:

Other income includes non tariff income such as interest on loans and advances to employee, income from fixed rate investment deposits, interest on loans and advances to licensees and other miscellaneous income from retail sources and revenue support from the Go UP, excluding DPS. Summary of other income is given below beginning with figure from balance sheet of FY2007-08. The amount has been forecasted to grow at the rate of inflation index from base figure of FY2007-08 to arrive at figure for FY2008-09& FY2009-10. The Go UP is likely to provide a subsidy of Rs 1,832 Cr in FY10 to partially cover the revenue shortfalls arising from below CoS tariffs for the Rural Domestic and PTW categories. A portion of these amounts allocated to AGRA DisCom, based on number of PTW and Rural Domestic consumers is Rs369.32 Cr.

Table 4-24: Other Income: (Consolidated DisCom)

Details (Rs.Cr)	FY 2007-08 Unaudited	FY 2008-09 Estimated	FY 2009-10 Projected
Other income from Retail Sources	117.48	126.38	135.94
Non Tariff Income	32.41	34.87	37.51
Sub Total	149.90	161.25	173.45
GoUP Subsidy - Rural Domestic and PTW	1,821.80	1,531.80	1,832.00
Sub Total	1,821.80	1,531.80	1,832.00
Total	1,971.70	1,693.05	2,005.45

Table 4-25: Other Income: (AGRA DisCom)

Details (Rs.Cr)	FY 2007-08 Unaudited	FY 2008-09 Projection	FY 2009-10 Projection
Other income from Retail Sources	31.80	34.20	36.79
Non Tariff Income	6.69	7.19	7.74
Sub Total	38.48	41.40	44.53
GoUP Subsidy - Rural Domestic and PTW	295.09	303.80	369.32
Sub Total	295.09	303.80	369.32
Total	333.57	345.20	413.85

4.9 Reasonable return/ Return on Equity:

Under provisions of the Regulations licensees are permitted a return on equity @ 16% which is worked out as under:-

- For equity base calculation debt equity ratio shall be 70:30.
- Where equity employed is more than 30%, the amount of equity for the purpose of tariff shall be limited to 30%.

- Equity amount more than 30% shall be considered as loan.
- Provided that in case that actual equity employed is less than 30%, actual debt and equity shall be considered for determination of tariff.

In the ARR submission for FY2008-09, petitioner requested a zero return with the pretext that it will further increase the gap and put extra burdens on the consumers. Same conditions are still prevailing. Thus petitioner preferred not to ask for the same. Moreover to bridge revenue shortfall petitioner has to ask for more Go UP subsidy and have to resort to short term loan from market in addition to different measure initiated for productivity improvement. In such a condition when licensee is already burdened with high interest cost due to short term loan to bridge revenue gap, it is unjustified to further widen gap by asking return.

4.10 Contribution to contingency reserve:

The contingency reserve creation permitted in the Regulation is up to 0.5% of opening gross fixed assets to be included in the ARR requirement of the petitioner. Accordingly petitioner has estimated contingency reserve to the tune of Rs10.85 Cr & Rs 13.39 Cr for current year & ensuing year summarized in Table 4-26 for AGRA DisCom.

Table 4-26: Contingency Reserve: AGRA DisCom

Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
Opening balance of GFA	1959.50	2170.89	2677.60
Contribution	0.50%	0.50%	0.50%
Contribution to contingency reserve	9.80	10.85	13.39

Table 4-27: Contingency Reserve Consolidated DisCom

Particulars (Rs Cr.)	FY2007-08	FY2008-09	FY2009-10
Opening balance of GFA	8,857.63	9,824.03	12,127.77
Contribution	0.50%	0.50%	0.50%
Contribution to contingency reserve	44.29	49.12	60.64

Regulation requires that contingency reserve shall be invested in Govt. securities. As there is a big revenue gap between ARR and revenue forecast, as such this component will only enhance the Gap and create extra burden on the consumers so for present ARR Licensee is not claiming this component.

4.10.1 Special Appropriations:

- ✓ **OTS Waiver:** As per clause 12 of tariff order FY2006-07 & clause 10 of tariff order FY2008-09, petitioner was allowed to launch surcharge waiver scheme (One Time Settlement Scheme) for recovery of blocked arrear and impact of such waiver were allowed to pass through in ARR for ensuing year. Petitioner has launched two one time settlement schemes as per provision of the Tariff Order and further approval of the commission in order to recover blocked arrear by providing rebate in surcharge. Detail of two schemes with surcharge waiver amount are given in following table:

Table 4-28: Scheme between 10.12.2007 to 31.01.08 (All amount in Lacs)

SrNo	Name of Zone	Registration Nos	Registration Amount	Amount before correction	Amount after correction	S/C (Rebate Amount)	Amount Deposited
1	2	3	4	5	6	7	8
1	Varanasi	14258	142.58	2293.69	1440.60	691.25	1440.60
2	Azamgarh	4447	44.47	579.43	405.45	157.27	273.30
3	Gorakhpur	14792	147.62	1819.22	1728.98	512.75	1216.23
4	Allahabad	6796	67.96	1033.23	834.59	134.34	615.68
	PoVVNL	40293	402.63	5725.57	4409.62	1495.61	3545.81
5	Lucknow	6705	67.05	789.26	607.61	192.48	530.48
6	Faizabad	9720	97.20	924.74	651.37	237.11	422.44
7	Bareilly	3083	30.83	455.56	341.34	114.22	312.23
	MVVNL	19508	195.08	2169.56	1600.32	543.81	1265.15
8	Meerut	7793	77.93	1480.23	898.32	338.81	693.18
9	Saharanpur	8981	89.81	1144.96	961.10	269.43	807.76
10	Moradabad	8523	85.23	1180.61	691.47	278.63	535.35
11	Noida	1680	16.80	448.28	351.04	70.47	280.57
	PVVNL	26977	269.77	4254.08	2901.93	957.34	2316.86
12	Agra	20718	207.18	4794.18	3474.32	1319.86	3073.02
13	Kanpur	8481	84.81	1262.17	948.72	313.45	889.71
14	Jhansi	850	8.50	124.97	90.11	34.86	67.65
	DVVNL	30049	300.49	6181.32	4513.15	1668.17	4030.38
		116827	1167.97	18330.53	13425.02	4664.93	11158.20

Table 4-29: Scheme between 09.06.2008 to 31.07.08 (All amount in Lacs)

SrNo	Name of Zone	Registration Nos	Registration Amount	Amount before correction	Amount after correction	S/C (Rebate Amount)	Amount Deposited
1	2	3	4	5	6	7	8
1	Varanasi	1168.00	11.68	200.26	152.52	19.88	125.96
2	Azamgarh	4447.00	44.47	579.43	405.45	157.27	273.30
3	Gorakhpur	1769.00	17.69	213.03	204.11	32.11	172.00
4	Allahabad	1306.00	13.06	190.84	137.28	17.89	126.78
	PoVVNL	8690.00	86.90	1183.56	899.36	227.15	698.04
5	Lucknow	1255.00	12.55	152.83	127.28	24.61	112.09
6	Faizabad	2160.00	21.60	237.36	165.19	39.90	121.23
7	Bareilly	430.00	4.30	53.15	43.66	9.38	40.62
	MVVNL	3845.00	38.45	443.34	336.13	73.89	273.94
8	Meerut	4631.00	46.31	708.98	581.10	96.69	505.57
9	Saharanpur	1912.00	19.12	231.90	227.75	31.88	200.02
10	Moradabad	1811.00	18.11	26.49	209.83	40.65	164.65
11	Noida	1358.00	13.58	265.45	191.16	28.36	155.92
	PVVNL	9712.00	97.12	1232.82	1209.84	197.58	1026.16
12	Agra	3985.00	39.85	1092.02	946.15	205.67	740.48
13	Kanpur	1721.00	17.21	220.99	201.38	33.30	174.92
14	Jhansi	588.00	5.88	123.65	123.65	43.28	80.37
	DVVNL	6294.00	62.94	1436.66	1271.18	282.25	995.77
		28541.00	285.41	4296.38	3716.51	780.87	2993.91

As described above DisCom wise OTS waiver amounts has been provided in following table:

Table 4-30: OTS waiver amount (Rs Cr)

OTS Scheme			
Discom/Period	10.12.2007 to 31.01.08	09.06.2008 to 31.07.2008	Total
Agra	16.68	2.82	19.50
Lucknow	5.44	0.74	6.18
Meerut	9.57	1.98	11.55
Varanasi	14.96	2.27	17.23
Total	46.65	7.81	54.46

✓ **Power Purchase Arrear for FY2008-09:**

As per clause 6.9 of The Term & condition of Distribution Tariff regulation provides for recovery of changes in fuel cost through Tariff .In the FY2008-09 UPPCL purchased Power from various sources at an average rate of Rs2.58/unit against Rs 2.35/unit approved by the commission in its last tariff order. In FY2008-09 UPPCL purchased total 56375mu at the cost of Rs 14560 cr on behalf of DisComs where as for FY2008-09 commission approved power purchase of 58328 MU at the cost of Rs 13686.11 cr. Therefore on account of increase in per unit average power purchase cost petitioner incurred on consolidated basis extra burden of Rs 1332.14 cr which need to be recovered in this ARR as this extra cost is totally beyond the control of the petitioner. Detail provided in following table:

Table 4-31: Power purchase arrear for FY2008-09:

Particulars	Unit	FY2008-09	
		Approved	Actual
Power Purchase cost	Rs Cr	13686.11	14,560.00
Units	MU	58328	56375
Cost per unit	Rs/unit	2.35	2.58
Difference in per unit cost	Rs/unit		0.24
Extra Power Purchase Cost	Rs Cr		1,332.14

DisCom wise Detail provided in following table:

Table 4-32: Power Purchase arrear for DisComs

DisCom	Rs Cr
MEERUT	434.47
AGRA	363.69
LUCKNOW	226.10
VARANASI	307.88
Total	1,332.14

4.11 Consolidated Retail & Wheeling Business ARR Summary:

The FY10 Consolidated Retail & Wheeling Business ARR along with revenue gap for ensuing year at current tariff is summarized below in Table 4-33 & Table 4-34 for both Consolidated DisCom and AGRA DisCom.

Table 4-33: Annual Revenue Requirement FY 2009-10: Consolidated DisCom:

Details (Rs.Crore)	FY 2007-08 Unaudited	FY 2008-09 Estimated	FY 2009-10 Projected
Power Purchase(MU)	55002	56375	57800
Units Sold(MU)	37097	40258	42214
Power Purchase Cost	11824	14560	15795
Transmission Charges	1038	1138	1320
Power Procurement Cost from UPPCL	12862	15698	17115
Employee Costs (net of capitalization)	602	766	1071
A&G Costs	75	103	110
Repair & Maintenance Expense	340	442	546
Interest & Finance Charges	608	1136	1296
Provision for Bad and Doubtful Debts	66	138	149
Depreciation	646	861	1071
Contingency Reserve	0	0	0
Return on Equity	0	0	0
OTS Waiver	0	0	54
Power Procurement Arrears	0	0	1332
Total Expenses	15199	19144	22745
Less Other Income	-150	-161	-173
Less GoUP Subsidy	-1822	-1532	-1832
Net Annual Revenue Requirement	13228	17451	20740
Revenue from Existing Tariffs	9957	11454	12271
Remaining Gap	3271	5997	8469

Table 4-34: Annual Revenue Requirement FY 2009-10: AGRA DisCom:

Details (Rs.Crore)	FY 2007-08 Unaudited	FY 2008-09 Projection	FY 2009-10 Projection
Power Purchase Cost	3271	3975	4498
Transmission Charges	287	311	376
Power Procurement Cost from UPPCL	3558	4286	4874
Employee Costs (net of capitalization)	98	143	200
A&G Costs	24	29	31
Repair & Maintenance Expense	95	98	120
Interest & Finance Charges	149	281	338
Provision for Bad and Doubtful Debts	19	43	48
Depreciation	154	190	235
Contingency Reserve	0	0	0
Return on Equity	0	0	0
OTS Waiver	0	0	20
Power Procurement Arrears			364
Total Expenses	4097	5069	6229
Less Other Income	(38)	(41)	(45)
Less GoUP Subsidy	(295)	(304)	(369)
Total Annual Revenue Requirement	3764	4724	5815
Revenue from Existing Tariffs	2692	3058	3264
Remaining Gap	1072	1666	2552

4.12 Wheeling and Retail Supply:

Clause 2.1(2) & (3) of the Term & conditions for determination OF Distribution Regulations provide that ARR/Tariff filing by the Distribution Licensee shall separately indicate Aggregate Revenue Requirement (ARR) for Wheeling function and Retail Supply function embedded in the distribution function. Till such time complete segregation of accounts between Wheeling and Retail Supply Business takes place, ARR proposals for Wheeling and Retail Supply Business shall be prepared based on an allocation statement to the best judgment of the distribution licensee.

Here it is to submit that still complete segregation of account between Wheeling and retail supply has not taken place, therefore petitioner has adopted the basis of allocation of the expenses in line with the methodology used by commission in its last Tariff Order.

Allocation of Consolidated ARR into wheeling & retail supply for FY2009-10 has been estimated into following table:

Table 4-35: Wheeling & Retail supply ARR

Particulars (Rs.Crore)	Allocation %		Allocation FY2009-10		
	Wheeling	Supply	Wheeling	Supply	Total
Power Purchase expenses(Incl PGCIL charges)	0.0%	100.0%	-	15,795.00	15,795.00
Transmission charges	0.0%	100.0%	-	1,319.90	1,319.90
Employee cost	60.0%	40.0%	756.28	504.19	1,260.47
A&G expenses	40.0%	60.0%	51.94	77.90	129.84
R&M expenses	90.0%	10.0%	491.17	54.57	545.75
Interest charges	90.0%	10.0%	1,247.33	138.59	1,385.92
Depreciation	90.0%	10.0%	964.09	107.12	1,071.21
Gross Expenditure			3,510.81	17,997.27	21,508.08
Expenses capitalisation					
<i>Employee cost capitalised</i>	60.0%	40.0%	113.44	75.63	189.07
<i>Interest capitalised</i>	90.0%	10.0%	81.01	9.00	90.01
<i>A&G expenses capitalised</i>	40.0%	60.0%	7.79	11.69	19.48
Net expenditure			3,308.57	17,900.96	21,209.53
Special appropriation					
<i>Provision for Bad & doubtful debts</i>	0.0%	100.0%	-	149.38	149.38
<i>Provision for contingency reserve</i>	0.0%	100.0%	-	-	-
<i>Prior period Adjustment</i>	0.0%	100.0%	-	1,386.60	1,386.60
Total net expenditure with provision					-
add: Reasonable Return/Return on Equity	90.0%	10.0%	-	-	-
Less: Non Tariff Income	0.0%	100.0%	-	(173.45)	(173.45)
Annual Revenue Requirement(ARR)			3,308.57	19,263.49	22,572.06

5 Bulk Supply Tariff:

Based on the approach adopted by commission in last tariff order, petitioner has computed Bulk supply tariff applicable to all DisComs including KesCo based on only Power Purchase cost and sale to DisComs as under for FY2009-10.

5.1 Derivation of Bulk Supply Tariff:

The Bulk supply Tariff has been derived as under, and shall be applicable to All DisComs, for power acquisition from UPPCL which is a bulk purchaser.

Table 5-1: Bulk Supply Tariff for FY (2009-10):

Details (Rs.Crore)	FY 2008-09 Estimated	FY 2009-10 Proposed
Power Purchase Expenses	14560	15795
Sales to DisComs (MU)	52779	54345
Bulk Supply Tariff (Rs/kWh)	2.76	2.91

5.2 UPPCL interest & Finance charges:

Further bills of Rs 917.37 Cr in addition to the bills raised as per tariff order for FY2008-09 has been raised on the DisComs for FY2008-09 in proportion to the energy delivered to them to settle the burden of interest and finance charger on the working capital loans raised by UPPCL to meet the power purchase obligations. This has been done to settle the burden as per the internal mechanism between UPPCL and the DisComs in line with the directives issued by UPERC under clause 5.13. 7.4 of the Tariff Order dt. 15.04.2008.

5.3 Bulk supply Tariff chargeable from DisComs by UPPCL for FY 2008-09:

A comparison of the bulk supply tariff approved by the Commission in Para 5.24.5 in its tariff order for UPPCL for financial year 2008-09 against the actual for the same is given in table below:-

Particulars	Tariff Order 2008-09	Actual for FY 2008-09
Power Purchase Expenses incl PGCIL charges (Rs crores)	13686	14560
Sales to DisComs (MU)	55411	52779
Bulk Supply Tariff (Rs/kWh)	2.470	2.760

As is evident from the table above, there was a major escalation in power purchase cost from the estimated levels based on the billed cost. As a result there was a huge difference between the approved PP cost and the actual billed PP Cost

Para 2.1.5 of UPERC Distribution Tariff Regulations state:

*Uncontrollable costs shall include (but not limited to) fuel cost, increase in interest rates, increase in cost on account of inflation, taxes & cess, **variation in power purchase unit costs** including on account of hydrothermal mix in case of adverse natural events.*

All non-controllable costs as checked by the Commission with due diligence and prudence shall be allowed as pass-through while determining the ARR of the distribution licensee”

The Petitioner humbly submits to the Hon’ble Commission that such variation in power purchase cost for FY 2008-09 may be allowed to be recovered by UPPCL from distribution companies by way of approval of variation in bulk supply tariff and such variation may be allowed as pass through and added to the Annual Revenue Requirement of DisComs

6 Tariff Design:

6.1 Wheeling charges from Open Access Consumers:-

Tariff for wheeling of electricity has been computed on the basis of costs allocated to the wheeling business as per the allocation statement and the projected electricity units to be wheeled through network in the ensuing tariff period. In addition to this, surcharge as decided by UPERC will be levied in case to case, or otherwise. This is a simple postage stamp method. Wheeling charges are summarized as under for Consolidated DisCom in Table 6-1 .This wheeling charge will be same for all DisComs.

Table 6-1: Wheeling Tariff: Consolidated DisCom:

Detail	Units	FY2009-10
Net Distribution Wheeling Function ARR	Rs Cr	3,308.57
Retail Sale by licensees	MU	42,213.60
Wheeling Charges	Rs/kWh	0.78

6.2 Retail Tariff Design:

It is proposed that the required increase in tariffs be applied so that the subsidy gap should be closed and heavily cross-subsidized customers should bear a proportionately higher share of any required tariff increases. Also, it should be noted that among metered customers, both rural and urban Domestic have what could be called extremely low revenue to cost ratios, as determined by the cost of service. The ratio for rural Domestic is a little lower than for urban Domestic because the hours of supply are limited in rural areas and therefore, the relative proportion of allocated demand related costs is lower. However, this situation is changing as supply hours to rural areas have increased and will continue to increase in the future.

The proposed Tariff changes are summarised in the following **Table 6-2:-**

Table 6-2: Proposed Rate Schedule: ARR FY 2009-10

Supply Type	CONSUMER CATEGORY	PROPOSED TARIFF ARR FY 2009-10	
LMV-1	DOMESTIC LIGHT, FAN & POWER:	Proposed Tariff	
	(a) Consumers getting supply as per "Rural Schedule":		
	(i) Un-Metered:		
	Fixed Charge:	Rs.125/Connection/month	
	(ii) Metered:		
	Fixed Charge:	Rs.15 /kW/month	
	Energy Charge:	Rs.1.00 /kWh	
	(b) Supply at single point for bulk loads:		
	Fixed Charge	Rs.35.00/kW/month	
	Energy Charge	Rs.2.80 /kWh	
	(c) Other Metered Domestic Consumers:		
	1. Life Line Consumers: For consumers with contracted load of 100 kW and Energy consumption upto 100 kWh/Month & above 100 kWh upto 150 kwh/month		
	Fixed Charge		
	(for 0 to 100 & above 100 upto 150 Units)	Rs.50 /kW/month	
	Energy Charge		
	Upto 100 Units/month	Rs.2.10 /kWh	
	Above 100 & upto 150 Units/month	Rs.4.00 /kWh	
	2. Others:(Urban Metered)		
	Fixed Charge	Rs.75 /kW/month	
	Linked with Supply Hours	Area under average daily Supply Hours of less than 18	Area under average daily Supply Hours of more than 18
	Energy Charge		
	Upto 200 Units/month	Rs.4.00 /kWh	Rs.4.25 /kWh
	Above 200 Units/month	Rs.4.75 /kWh	Rs.5.00 /kWh
LMV-2	NON-DOMESTIC LIGHT, FAN & POWER:	Proposed Tariff	
	(a) Consumers getting supply as per "Rural Schedule"		
	(i) Un-Metered		
	Fixed Charge	Rs.200/Connection/month	
	(ii) Metered		
	Fixed Charge	Rs.50 /kW/month	
	Energy Charge	Rs.1.90 /kWh	
	(b) Private Advertising/Sign Post/Sign Board/Glow Signs/Flex:		
	(i) Metered		
	Fixed Charge	Nil	
	Energy Charge	Rs.10 /kWh	
	Minimum Charge	Rs.1000 /kW/month	
	(c) Other Metered Consumers: (For All Loads)		
	Fixed Charge	Rs. 125 /kW/month	
	Linked with Supply Hours	Area under average daily Supply Hours of less than 18	Area under average daily Supply Hours of more than 18
	Energy Charge	Rs. 5.25/kWh	Rs. 5.50/kWh
	Minimum Charge	Rs. 400 /kW/month	
LMV-3	PUBLIC LAMPS:	Proposed Tariff	
	(i) Un-Metered Supply:(Billed on total Connected Load of individual points)		
	Gram Pachayat	Rs.1200 /kW or part thereof/ month	
	Nagar Palika and Nagar Panchayat	Rs.1400 /kW or part thereof / month	
	Nagar Nigam	Rs.1800 /kW or part thereof /month	
	(ii) Metered Supply:(Billed on the basis of MRI downloads at metering points)		
	Fixed Charge		
	Gram Pachayat	Rs. 125.00 /kW/month	
	Nagar Palika and Nagar Panchayat	Rs. 150.00 /kW/month	
	Nagar Nigam	Rs. 200.00 /kW/month	
	Energy Charge		
	Gram Pachayat	Rs. 4.0 /kWh	
	Nagar Palika and Nagar Panchayat	Rs. 4.50 /kWh	
	Nagar Nigam	Rs. 4.90 /kWh	

Proposed Rate Schedule: ARR FY 2009-10

Supply Type	CONSUMER CATEGORY	PROPOSED TARIFF ARR FY 2009-10
LMV-4	LIGHT, FAN & POWER FOR PUBLIC & PRIVATE INSTITUTION:	Proposed Tariff
	4 (a) For Public Institutions: (For all Loads)	
	Fixed Charge	Rs.100.00 /kW/month
	Energy Charge	Rs.5.00 /kWh/month
	Minimum Charge	Nil
	For Private Institutions:(For all Loads)	
	4 (b) Fixed Charge	Rs. 110.00 /kW/month
	Energy Charge	Rs.5.50 /kWh
	Minimum Charge	Nil
LMV-5	SMALL POWER FOR PTW/ PUMPING SETS FOR IRRIGATION PURPOSES:	Proposed Tariff
	(a) Consumers getting supply as per "Rural Schedule"	
	(i) Un-Metered Supply	
	Fixed Charge	Rs.75 /BHP/month
	Maximum Lighting Load	30 Watts (2 CFL of 15W).
	(ii) Metered Supply	
	Fixed Charge	Rs.15 /BHP/month
	Energy Charge	75 paise/kWh
	Minimum Charge	Rs. 65 /BHP/month
	(b) Consumers getting supply as per "Urban Schedule (Metered Supply)"	
	Fixed Charge	Rs. 30 /BHP/month
	Energy Charge	Rs. 2.00/kWh
	Minimum Charge	Rs. 130 /BHP/month
LMV-6	SMALL AND MEDIUM POWER:	Proposed Tariff
	(a) Consumers getting supply other than "Rural Schedule"	
	Fixed Charge	Rs.125.00 /kW/month
	Energy Charge	Rs. 5.00 /kWh
	Minimum Charge	Rs. 500 /kW/month
	(b) Consumers getting supply as per "Rural Schedule"	
	Energy Charge	Consumers getting supply as per Rural Schedule shall be eligible a Rebate of 15% on "Rate of charge".
	Demand Charge	
	Minimum Charge	
LMV-7	PUBLIC WATER WORKS:	Proposed Tariff
	(a) Consumers getting supply other than "Rural Schedule"	
	Fixed Charge	Rs.90 /kW/month
	Energy Charge	Rs.4.0 /kWh
	Minimum Charges	Nil
	Rural	Nil
	Urban	Nil
	(b) Fixed Charge	Consumers getting supply as per Rural Schedule shall be eligible for a Rebate of 15% on "Rate of charge".
	Energy Charge	
LMV-8	STW, PANCHAYTI RAJ TUBE WELL & P C	Proposed Tariff
	(i) Metered	
	Fixed Charge	Rs.100 /BHP/month
	Energy Charge	Rs.4.50 /kWh
	(ii) Un-Metered	
	Fixed Charge	Rs1000 /BHP/month

Proposed Rate Schedule: ARR FY 2009-10

Supply Type	CONSUMER CATEGORY	PROPOSED TARIFF ARR FY 2009-10	
LMV-9	TEMPORARY SUPPLY:	Proposed Tariff	
	(a) Un-Metered		
	(i) Fixed Charges for Illumination/Public Address/ceremonies for loads upto 20 kW/connection plus Rs.100/kW/day for each additional kW	Rs.1500 per day	
	(ii) Fixed charges for temporary shops set-up during festivals/melas and having load up to 2 KW	Rs.150 per day	
	(b) Metered		
	Energy Charge		
	(i) Individual Residential Construction	Rs.4.00 /kWh	
	(ii) Others	Rs.6.00 /kWh	
	Minimum Charge:	Rs 150 /kW/week (part of week shall be treated as full week)	
LMV-10	DEPT. EMPLOYEES AND PENSIONERS:	Proposed Tariff	
	Un-Metered Supply		
	Category	Fixed Charge/month	Fixed Monthly Energy Charge
	Class IV employees/ Operating staff	Rs. 60.00	Rs. 70.00
	Class III employees	Rs. 60.00	Rs.100.00
	J E & equivalent posts.	Rs.120.00	Rs.200.00
	A E & equivalent posts	Rs.120.00	Rs.300.00
	E E & equivalent posts	Rs.120.00	Rs.330.00
	D.G.M & equivalent posts	Rs.300.00	Rs.400.00
	General Manager and above	Rs.300.00	Rs.480.00
	Additional Charge for using A.C (April to Sept.)	Rs.400.00 per A.C/month.	
	Additional Charge for E D	20%	
	Metered Supply	50% rebate on the rate of charge applicable to other metered consumers under LMV-I category	
HV-1	NON-INDUSTRIAL BULK LOAD	Proposed Tariff	
	Commercial Loads/Private Institutions/Non-Domestic Bulk Power with contracted Load 75 kW & above and getting supply at single point on 11 kV & above voltage level.		
	(a) Demand Charges		
	For Supply at 11 kV	Rs.200 /kVA/month	
	For Supply at 33 kV & above	Rs.180 /kVA/month	
	(b) Energy Charge		
	For Supply at 11 kV	Rs.4.75 /kVAh	
	For Supply at 33 kV & above	Rs.4.50 /kVAh	
	Public Institutions with contracted Load 75 kW & above and getting supply at single point on 11 kV & above voltage level.		
	(a) Demand Charges		
	For Supply at 11 kV	Rs.180 /kVA/month	
	For Supply at 33 kV & above	Rs.170 /kVA/month	
	(b) Energy Charge		
	For Supply at 11 kV	Rs.4.10 /kVAh	
	For Supply at 33 kV & above	Rs.4.00 /kVAh	

Proposed Rate Schedule: ARR FY 2009-10

Supply Type	CONSUMER CATEGORY	PROPOSED TARIFF ARR FY 2009-10	
HV-2	LARGE AND HEAVY POWER:	Proposed Tariff	
	(A) Urban Schedule		
	Consumers below 11 kV Supply :		
	Demand Charges (Rs /kVA/Month)	(+) 15 % over the rate for consumers connected at 11kV	
	Energy Charge (Rs / kVAh)		
	Minimum Charge (Rs / kVA /Month)		
		For Consumers at 11 kV	
	BASE RATE :For Hour Lnked Tariff		
	Demand Charges (Rs /kVA/Month)	210	
	Energy Charge (Rs / kVAh)	5.00	
	Minimum Charge (Rs / kVA /Month)	Nil	
	TOD RATES	TOD RATES	
	2200hrs-0600 hrs	(-) 7.50%	
	0600 hrs-1700 hrs	0.00	
	1700 hrs-2200hrs	(+) 15.0%	
	(B) Rural Schedule	This Schedule shall be applicable only to consumers getting supply upto 11kV as per "Rural Schedule".The consumers under this category shall be entitled to a rebate of 15 % on BASE "Rate of Charge" as given for 11kV consumers under urban schedule without TOD	
	(C) Consumers above 11 kV Voltage:		
	BASE RATE	For supply at 33 kV and up to 66 kV	For supply at 132 kV and above voltages
	Demand Charges (Rs /kVA/Month)	200.00	180.00
	Energy Charge (Rs / kVAh)	4.25	4.00
	Minimum Charge (Rs / kVA /Month)	-	-
	TOD Rates		
	2200hrs-0600 hrs	(-) 7.5%	(-) 7.5%
	0600 hrs-1700 hrs	0	0
	1700 hrs-2200hrs	(+) 15%	(+) 15%
HV-3	RAILWAY/ METRO TRACTION:	Proposed Tariff	
	(a) Demand Charge		
	For supply at & above 132 kV	Rs.180 /kVA/month	
	Below 132 kV	Rs.200 /kVA/month	
	(b) Energy Charge		
	For supply at & above 132 kV	Rs.4.50 /kVAh	
	Below 132 kV	Rs.4.75 /kVAh	
	Minimum Charge	Rs.425 /kVA/month	
HV-4	Lift Irrigation Works:	Proposed Tariff	
	(a) Demand Charge		
	For Supply at 11 kV	Rs.250 /kVA/month	
	For Supply above 11 kV & up to 66 kV	Rs.240 /kVA/month	
	For Supply above 66 kV & up to 132 kV	Rs.220 /kVA/month	
	(b) Energy Charge		
	For Supply at 11 kV	Rs.4.80 /kVAh	
	For Supply above 11 kV & up to 66 kV	Rs.4.00 /kVAh	
	For Supply above 66 kV & up to 132 kV	Rs.3.90 /kVAh	
	Minimum Charge	Rs.500 /kVA/month	
	Bulk & Extra State :	Rs 3.149/kWh	

7 Meeting the Gap:

Table 7-1: Revenue on Proposed Tariff FY 2009-10: Consolidated DisCom

Consumer Category	Assessment Revenue	Electricity Sales	Through Rate
	Rs. Cr	MU	Rs./kWh
LMV-1: Domestic Light, Fan & Power	4490	15263	2.94
(a) Consumer getting supply as per "Rural Schedule"	747	6,584	1.13
(b) Supply at Single Point for Bulk Loads	138	475	2.90
(c) Other Metered Domestic Consumers	3,590	8,162	4.40
(d) Life Line Consumers	15	42	3.55
LMV-2: Non Domestic Light, Fan & Power	1239	2875	4.31
(a)Non-Domestic(Rural)	191	921	2.08
(b)Non-Domestic (Urban Metered)	1048	1953	5.36
LMV-3: Public Lamps	270	574	4.70
LMV-4: Insitutions	633	1362	4.65
LMV-5: Private Tube Wells	534	4840	1.10
LMV 6: Small and Medium Power	1008	2209	4.56
(a): Small and Medium Power for Power Loom	201	585	3.44
(b):Small and Medium Power	806	1624	4.97
LMV-7: Public Water Works	260	822	3.16
LMV-8: State Tubewells and Pumped Canals	606	1581	3.83
LMV-9: Temporary Supply	49	53	9.19
LMV-10: Departmental Employees and Pensioners	53	385	1.38
HV-2: Large and Heavy Power	4126	7854	5.25
HV-3: Railway Traction	331	634	5.22
HV-4: Lift Irrigation Works	264	614	4.30
Sub Total	13862	39067	3.55
Bulk & Extra State	991	3146	3.15
CONSOLIDATED DisCom	14853	42214	3.52

Table 7-2: Revenue on Proposed Tariff FY 2009-10: AGRA DisCom

Consumer Category	Assessment Revenue	Electricity Sales	Through Rate
	Rs. Cr	MU	Rs./kWh
LMV-1: Domestic Light, Fan & Power	1016	3421	2.97
(a) Consumer getting supply as per "Rural Schedule"	166	1,448	1.14
(b) Supply at Single Point for Bulk Loads	7	23	3.24
(c) Other Metered Domestic Consumers	837	1,923	4.35
(d) Life Line Consumers	6	26	2.22
LMV-2: Non Domestic Light, Fan & Power	273	671	4.07
(a)Non-Domestic(Rural)	61	284	2.14
(b)Non-Domestic (Urban Metered)	212	387	5.48
LMV-3: Public Lamps	40	91	4.38
LMV-4: Insitutions	136	311	4.37
LMV-5: Private Tube Wells	167	1835	0.91
LMV 6: Small and Medium Power	267	637	4.19
(a): Small and Medium Power for Power Loom	42	164	2.55
(b):Small and Medium Power	225	472	4.76
LMV-7: Public Water Works	58	183	3.16
LMV-8: State Tubewells and Pumped Canals	191	378	5.06
LMV-9: Temporary Supply	13	16	7.95
LMV-10: Departmental Employees and Pensioners	10	130	0.78
HV-2: Large and Heavy Power	837	1599	5.24
HV-3: Railway Traction	108	204	5.30
HV-4: Lift Irrigation Works	38	84	4.49
Sub Total	3153	9560	3.30
Bulk & Extra State	874	2776	3.15
AGRA DisCom	4027	12336	3.26

Table 7-3: Existing Gap will be met through the following means:-

Details (Rs.Crore)	Agra Discom	Consolidated Discom
Additional Revenue from Tariff Increase	763	2582
Go UP additional subsidy/Loan	1789	5887

- Additional Revenue from Proposed Tariff **Rs 2582 Cr** for **FY 2009-10** on consolidated basis.
- Additional subsidy from GoUP, under consideration.
- Loan from Bank & Financial Institutions.

Prayer:

The petitioner prays that the Commission may be pleased to:

- **Admit the accompanying Annual Revenue Requirement.**
- **Approve the Annual Revenue Requirement for financial year 2009-10.**
- **Allow the petitioner to add/change / alter / modify this application at a future date.**
- **Issue any other relief, order or direction which the commission may deem fit.**