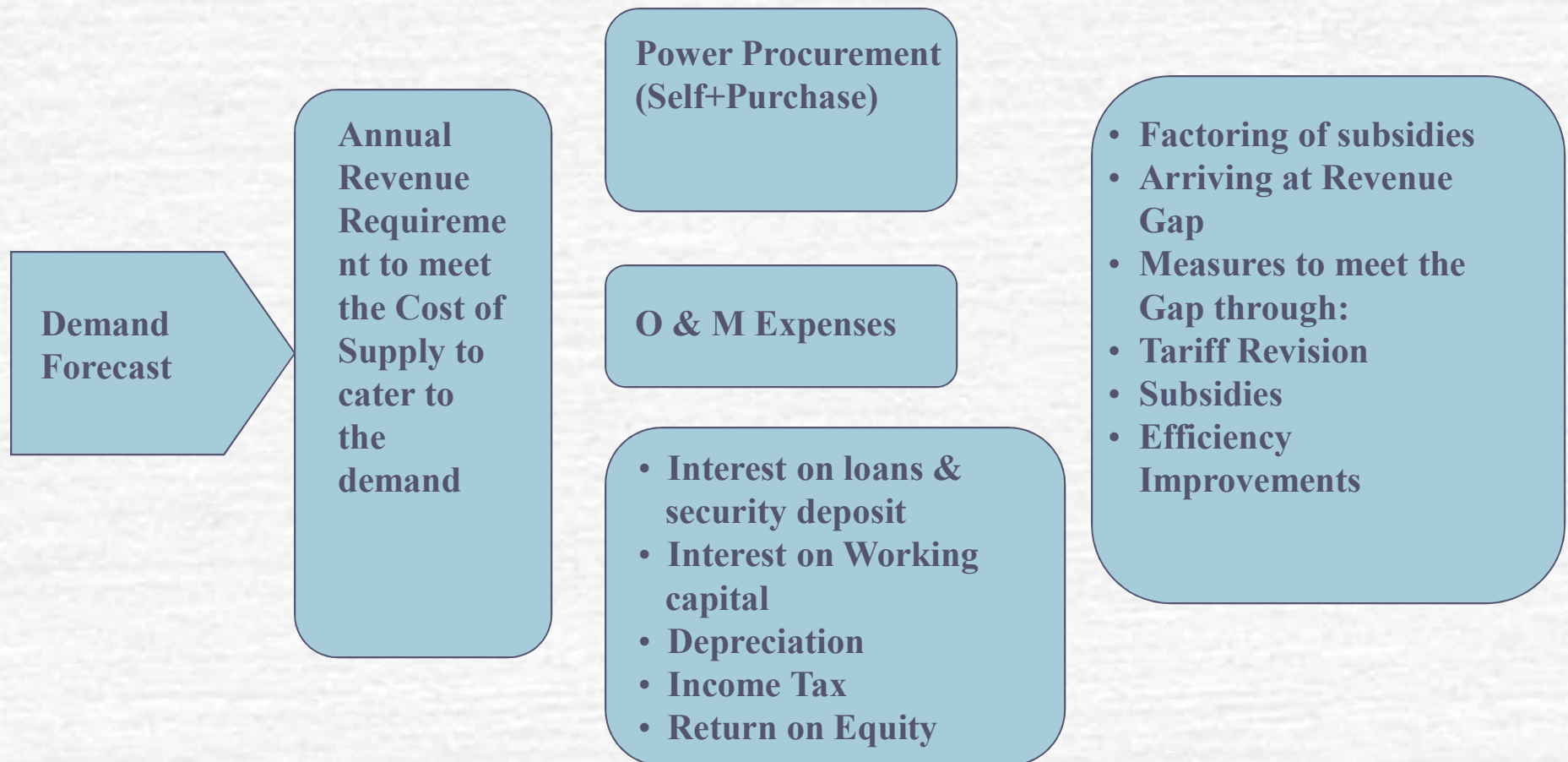




COMPONENTS OF REVENUE REQUIREMENT

A typical Tariff Application of Discom has to include



The petition would also include performance review of the previous year and truing up of the prior year for which audited accounts are available

Shift from annual tariff determination to multi year tariff

Debt Equity Ratio

- Debt equity ratio is 70:30
- Where equity is more than 30% the amount of equity for the purpose of tariff shall be 30% and the balance considered as loan
- When equity is less than 30%, actual equity is considered
- In case of retirement or replacement of assets, the equity capital approved as mentioned above, shall be reduced to the extent of 30% (or actual if less than 30%) of the original cost of the retired or replaced asset

Capital Cost & Capital Structure

- ☞ Capital cost is expenditure incurred or projected to be incurred including
 - Interest during construction and financing charges
 - Forex variations on the loan during construction upto commercial operation of project
 - Capitalized initial spares subject to ceiling rates
- ☞ Capital expenditure will undergo a prudency check by ERC
- ☞ Replacement of assets, R&M, extension of life will be treated as follows:
 - Net value of replaced assets = $OCFA - AD - CC$ where
 - OCFA – Original capital cost of replaced assets
 - AD – accumulated depreciation pertaining to replaced assets
 - CC – Total consumer contribution pertaining to the replaced asset

Capitalization of Spares

- The capital cost may include capitalised initial spares:
 - upto 2.5% of original capital cost in case of coal based/lignite fired generating stations;
 - upto 4.0% of original capital cost in case of gas turbine/combined cycle generating stations;
 - upto 1.5% of original capital cost in case of hydro-generating stations; and
 - upto 1.5% of original capital cost in case of Transmission Licensee and Distribution Licensee.

Additional Capitalisation Allowed

- Additional capitalisation is allowed on account of:
 - Undischarged liabilities within the original scope of work;
 - On works within the original scope of work, deferred for execution
 - To meet award of arbitration and compliance of final and unappealable order or decree of a court arising out of original scope of works;
 - On account of change in law;
 - On procurement of initial spares included in the original project costs subject to the ceiling norm laid down in Regulations;
 - Any additional works/services, which have become necessary for efficient and successful operation of a generating station or a transmission system or a distribution system but not included in the original capital cost:
- Provided that original scope of work is submitted in the Business Line

Consumer Contribution, Deposit & Grant

- Works after obtaining a part or all of the funds from the users in the context of deposit works;
- Capital works undertaken by utilising grants received from the State and Central Governments, including funds under RGGVY, APDRP, etc;
- Any other grant of similar nature and such amount received without any obligation to return the same and with no interest costs attached to such subvention

Return on Equity

- Return on equity shall be computed on the paid up equity capital - the rate of 14% for Generating Companies, including hydro generation stations above 25 MW, Transmission Licensee, and Distribution Licensee:
- Provided that for Genco, Tranco, and Discoms, ROE shall be allowed on the amount of allowed equity capital for the assets put to use at the commencement of each financial year and on 50% of equity capital portion of the allowable capital cost for the investments put to use during the financial year:
- For the purpose of truing up for the utilities, ROE shall be allowed on pro-rata basis based on documentary evidence provided for the assets put to use during the year.
- The premium raised by the utilities while issuing share capital and investment of internal resources created out of free reserve, if any, shall also be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilised for meeting capital expenditure.
- Equity invested in foreign currency shall be converted to rupee currency based on the exchange rate prevailing on the date(s) it is subscribed.

Return on investment: RoE vs ROCE

- The cost of service of regulated utilities includes return on investment i.e. return on equity and cost of debt.
- The ROI is determined based on the rate base and rate of return. The Debt: Equity ratio has been in the range of 50:50 to 80:20. The debt: equity ratio and return on capital are influenced by various financial factors. There are two options available for return on investment namely-
 - Return on Capital Employed (ROCE) ;and
 - Return on Equity (ROE) with pass through of cost of debt.

Return on investment: RoE vs ROCE – 2

- ✓ In view of lack of benchmarking for Debt-Equity mix and volatility with respect to interest rate and debt market in India, Return on Equity (ROE) approach was accepted during previous tariff period 2009-14
- ✓ CERC debated the issue for the current control period as well
- ✓ The rate of return needs to be linked with weighted average of capital cost by benchmarking debt and equity in ROCE approach.
- ✓ In ROCE method, rate base will be the total capital employed, which represents investments made by the utility on which return is calculated and provided in the tariff.

Return on investment: RoE vs ROCE - 3

- By and large all stakeholders before CERC suggested the continuation of the RoE

Interest & Finance Charges

- The loans arrived at shall be considered as gross normative loan for calculation of interest on loan:
- Provided that interest and finance charges on capital works in progress shall be excluded:
- Provided further that in case of retirement or replacement of assets, the loan capital approved as mentioned above, shall be reduced to the extent of outstanding loan component of the original cost of the retired or replaced assets, based on documentary evidence.
- The repayment for the year during the tariff period from FY 2011-12 to FY 2015-16 (Control period) shall be deemed to be equal to the depreciation allowed for that year.

Interest & Finance Charges (2)

- The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the Generating Company or the Transmission Licensee or the Distribution Licensee:
- Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:
- The above interest computation shall exclude interest on loan amount, normative or otherwise, to the extent of capital cost funded by Consumer Contribution, Grants or Deposit Works carried out by Transmission Licensee or Distribution Licensee or Generating Company, as the case may be.
- The utilities shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the utilities in the ratio of 2:1.
- Interest shall be allowed on the amount as security deposit held in cash from Transmission System Users, Distribution System Users and Retail consumers at the Bank Rate as on 1st April of the financial year in which the Petition is filed

Depreciation

- ✓ The approved original cost of the project/fixed assets shall be the value base for calculation of depreciation;
- ✓ Depreciation shall be computed annually based on the straight line method at the rates specified by ERC
- ✓ The remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the assets:
- ✓ Specifies that the utilities formed as part of transfer scheme shall be charged as per rates specified in these Regulations for a period of 12 years from the date of the Transfer Scheme, and thereafter depreciation will be spread over the balance useful life of the assets:
- ✓ The salvage value of the asset shall be considered at 10 per cent of the allowable capital cost and depreciation shall be allowed upto a maximum of 90 per cent of the allowable capital cost of the asset:

Depreciation (2)

- ✓ Provided that in the case of hydro generating station, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government.
- ✓ Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.
- ✓ In case of the existing projects, the balance depreciable value as on April 1, 2011, shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto March 31, 2011, from the gross value of the assets.
- ✓ In case of projected commercial operation of the asset for part of the year, depreciation shall be calculated based on the average of opening and closing value of asset, approved by the Commission:
- ✓ Provided that depreciation will be re-calculated during truing-up for assets capitalised at the time of Truing Up of each year of the Control Period, based on documentary evidence of asset capitalised by the applicant, subject to the prudence check of the Commission, such that the depreciation is calculated proportionately from the date of capitalisation.

Operational and Maintenance expenses of thermal generating stations

Existing Generating Stations:

- Average actual O&M expenses for the three year ending 31st March, 2010. Subject to prudence check by the Commission.
- This is considered for the ending 31st March, 2009 and shall be escalated at 4% to arrive at O&M expenses for FY 2011-12 and
- Each subsequent year the expenses shall be escalated at 5.72% to arrive at O&M expenses for each year of the control period.

New Generating Stations

(Rs.Lakhs)

Financial Year (FY)	Coal Based Station	Lignite Based station	Gas Based Station
2011-12	14.53	21.63	16.54
2012-13	15.36	22.87	17.49
2013-14	16.24	24.18	18.49
2014-15	17.17	25.56	19.55
2015-16	18.15	27.02	20.67

Existing Transmission Licensees

(Rs.Lakhs)

Particulars	2011-12	2012-13	2013-14	2014-15	2015-16
O&M Expenses/Bay	5.76	6.09	6.44	6.81	7.19
O&M Expenses / ckt. km.	0.49	0.52	0.55	0.58	0.61

For the new transmission licensees, the year-wise O&M expenses shall be determined on case to case basis

Distribution Business

- O&M expenses shall be derived on the basis of the average of actual O&M expenses for the three (3) year ending 31st March, 2010.
- This is considered for the year ending 31st March, 2009 and escalated at 4% to arrive at O&M expenses for FY 2011-12.
- O&M expenses for each subsequent year is determined by escalating the base expenses of FY 2011-12 at the 5.72% to arrive O&M expenses for each year of the control period.

Interest on Working Capital

- Working capital is defined separately for:
 - Generation
 - Coal/ lignite/ oil fired plants
 - Gas Turbine/ combined cycle plants
 - Hydro plants
 - Transmission
 - Distribution Wires Business
 - Retail Supply Business
- Interest on working capital shall be allowed at a rate equal to the State Bank Advance Rate (SBAR) as on 1st April of the financial year in which the Petition is filed.

Interest on Working Capital – for Coal/ oil/ lignite based plants

Working capital shall cover:

- Cost of coal or lignite for one (1) month for pit-head generating stations and one and a half (1½) months for non-pit-head generating stations, corresponding to target availability; plus
- Cost of oil for one (1) month corresponding to target availability; plus
- Cost of secondary fuel oil for two (2) months corresponding to target availability; plus
- Operation and Maintenance expenses for one (1) month; plus
- Maintenance spares at one (1) per cent of the historical cost escalated at 6% from the date of commercial operation; plus
- Receivables for sale of electricity equivalent to one (1) month of the sum of annual fixed charges and energy charges calculated on target availability:
- In case of own generating stations, no amount shall be allowed towards receivables, to the extent of supply of power by the Generation Business to the Retail Supply Business

Interest on Working Capital – Gas based Generation / combined cycle plants

- ✓ Fuel cost for one (1) month corresponding to target availability factor, duly taking into account the mode of operation of the generating station on gas fuel and /or liquid fuel; plus
- ✓ Liquid fuel stock for fifteen (15) days corresponding to target availability; plus
- ✓ Operation and maintenance expenses for one (1) month; plus
- ✓ Maintenance spares at one (1) per cent of the historical cost escalated at 6% from the date of commercial operation; plus
- ✓ Receivables equivalent to one (1) month of capacity charge and energy charge for sale of electricity equivalent calculated on normative plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel:
- ✓ In case of own generating stations, no amount shall be allowed towards receivables, to the extent of supply of power by the Generation Business to the Retail Supply Business

Interest on Working Capital – Hydro Plants

- Operation and maintenance expenses for one (1) month;
- Maintenance spares at one (1) per cent of the historical cost escalated at 6% from the date of commercial operation; and
- Receivables equivalent to one (1) month of fixed cost:
- Provided that in case of own generating stations, no amount shall be allowed towards receivables, to the extent of supply of power by the Generation Business to the Retail Supply Business, in the computation of working capital in accordance with these Regulations.

Interest on Working Capital – Transmission

- Operation and maintenance expenses for one month; plus
- Maintenance spares at one (1) per cent of the historical cost escalated at 6% from the date of commercial operation; plus
- Receivables equivalent to one (1) month of transmission charges calculated on target availability level;
- minus
- Amount, if any, held as security deposits except the security deposits held in the form of Bank Guarantee from Transmission System Users.

Interest on Working Capital – Distribution Wires Business

- Operation and maintenance expenses for one month; plus
- Maintenance spares at one (1) per cent of the historical cost escalated at 6% from the date of commercial operation; plus
- Receivables equivalent to one (1) month of the expected revenue from charges for use of Distribution Wires at the prevailing tariffs;
- minus
- Amount, if any, held as security deposits under clause (b) of sub-section (1) of Section 47 of the Act from Distribution System Users except the security deposits held in the form of Bank Guarantees.

Interest on Working Capital – Retail Supply of Electricity

- Operation and maintenance expenses for one month; plus
- Maintenance spares at one (1) per cent of the historical cost escalated at 6% from the date of commercial operation; plus
- Receivables equivalent to one (1) month of the expected revenue from sale of electricity at the prevailing tariffs;
- minus
- Amount, if any, held as security deposits except security deposits held in the form of Bank guarantee;
- Interest shall be allowed at a rate equal to the State Bank of India Advance rate (SBAR) as on 1st April of the financial year in which petition is filed.

Non-Tariff Income

- Indicative List of various heads to be considered for Non-Tariff Income shall be as under:
 - Income from rent of land or buildings;
 - Income from sale of scrap;
 - Income from statutory investments;
 - Income from sale of Ash/rejected coal;
 - Interest on delayed or deferred payment on bills;
 - Interest on advances to suppliers/contractors;
 - Rental from staff quarters;
 - Rental from contractors;
 - Income from hire charges from contractors and others;
 - Income from advertisements, etc.:
- Provided that the interest earned from investments made out of Return on Equity corresponding to the regulated business of the Generating Company shall not be included in Non-Tariff Income.

Norms of Operation: Generation

- Norms are specified for:
 - Plant Availability – 85% for full fixed cost recovery
 - Gross station Heat rate – Existing and new stations
 - Secondary Fuel oil consumption - Existing and new stations
 - Coal-based generating stations: 1.00 ml/kWh;
 - Lignite-Fired generating stations except stations based on CFBC technology: 2.00 ml/kWh;
 - Lignite-Fired generating stations based on CFBC technology: 1.25 ml/kWh;
 - Trajectory determined separately for GSECL stations
 - Auxiliary Energy consumption - Existing and new stations
 - Transit and Handling losses of coal
 - O&M expenses
 - Norms for Hydro stations
 - Norms specified are ceiling norms

Norms of Operations: transmission

The target availability for full recovery of annual transmission charges

(a)	AC system	98%
(b)	HVDC bi-pole links	92%
(c)	HVDC back to back station	95%

- Recovery of annual transmission charges below the level of target availability shall be on a priori basis.
- At zero availability no transmission charges are payable.

Distribution—Norms for Wires Availability

- The target Wires Availability for full recovery of Return on Equity for Wires Business shall be as under:
 - Rural Areas 90 percent;
 - Towns and cities 95 percent;
- Provided that the Commission may stipulate a trajectory for achieving the target Availability for Wires Business of the Distribution licensee as part of the Order on the Business Plan filed by the Distribution Licensee
- Provided further that for every 1 percent under-achievement in Wires Availability vis-a-vis target availability, Rate of Return on Equity shall be reduced by 0.1%:
- Provided further that for every 1 percent over-achievement in Wires Availability vis-a-vis target availability, Rate of Return on Equity shall be increased by 0.1%.

Wheeling charges of the Distribution Licensee

- Wheeling charges of distribution license shall be determined by the Commission on the basis of segregated accounts of Distribution Wires Business.
- Where the Distribution licensee is not able to submit audited and certified separate accounts for distribution wires business and retail supply business, the following allocation matrix shall be applicable.

Approval of Expenses under MYT Regime

- All expenses are freezed for the three or five years during the control period. All expenses other than power purchase and taxes are controllable items.
- Increase in power purchase costs is allowed to be recovered under power purchase cost adjustment.
- Any other variation is approved ARR to be claimed in the 'True up'.
- The tariffs are determined for the first year of the control period, if the control period is 2011-12 to 2015-16. The tariffs are determined for 2011-12 and every subsequent year.
- Truing up for 2011-12 is done on filing of petition for balance four years of control period. Surplus / deficit carried over.