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PART—IV

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GOVERNMENT OF THE NATIONAL CAPITAL TERRITORY OF DELHI

राजस्व विभाग

अधिसूचना

दिल्ली, 30 मई, 2007

Generation Tariff Regulation

DELHI ELECTRICITY REGULATORY COMMISSION

MAY, 2007

(TO BE PUBLISHED IN DELHI GAZETTE EXTRAORDINARY PART IV)
GOVERNMENT OF NATIONAL CAPITAL TERRITORY OF DELHI

DELHI ELECTRICITY REGULATORY COMMISSION
Viniyamak Bhavan, C-Block, Shivalik, Malviya Nagar, New Delhi-110017

NOTIFICATION

Delhi, the May, 2007

No. F.3 (130-A)/Tariff/ DERC/2006-07/ In exercise of powers vested under sub-sections (zd), (ze) and (zf) of Section 181 (2) read with Sections 61, 62 and 86 of the Electricity Act 2003 (36 of 2003) and all powers enabling it in that behalf, the Delhi Electricity Regulatory Commission hereby makes the following Regulations for specifying the terms and conditions of tariff namely:

A1: SHORT TITLE, COMMENCEMENT AND EXTENT

1.1 These Regulations shall be called the Delhi Electricity Regulatory Commission (Terms and Conditions for Determination of Generation Tariff) Regulations, 2007.

1.2 These Regulations shall come into force from the date of their publication in the Delhi Gazette.

1.3 These Regulations shall extend to the whole of National Capital Territory of Delhi.

A2: DEFINITIONS AND INTERPRETATION

2.1 In these Regulations, unless the context otherwise requires-

(a) "**Act**" means the Electricity Act, 2003 (36 of 2003), including amendments thereto;

(b) "**Applicant**" means a Generating Company who has made an application for determination of tariff or an application for annual performance review in accordance with the Act and these Regulations and includes a Generating Company whose tariff is the subject of a review by the Commission either suo motu or on a petition filed by any interested or affected person or as part of an annual performance review;

(c) "**Auxiliary Energy Consumption**" or 'AUX' in relation to a period means the quantum of energy consumed by auxiliary equipment of the generating station and transformer losses within the generating station, and shall be expressed as a percentage of the sum of gross energy generated at the generator terminals of all the Units of the generating station;

(d) "**Availability**" in relation to a thermal generating station for any period means the average of the daily average declared capacities (DCs) for all the days during that period expressed as a percentage of the Installed Capacity of the generating station minus normative auxiliary consumption in MW, and shall be computed in accordance with the following formula:

Availability = 10000 x Σ DCi / {N x IC x (100-AUXn)} %

Where:

IC = Installed Capacity of the generating station in MW,

DCi = Average Declared Capacity for the i^{th} day of the period in MW,

N = Number of days during the period,

AUXn = Normative Auxiliary Energy Consumption as a percentage of gross generation, and

Σ = Summation from i = 1 to N;

(e) "**Bank Rate**" shall mean the rate at which Reserve Bank of India lends to commercial banks as specified in monetary policy on April 1, of the relevant year;

(f) "**Base Year**" means the Financial Year immediately preceding the first year of the Control Period, and used for the purposes of these Regulations;

(g) "**Beneficiary**" in relation to a generating station means the person buying power generated at such a generating station on payment of Annual Fixed Charges;

(h) "**Block**" in relation to a combined cycle thermal generating station includes combustion turbine – generator(s), associated waste heat recovery boiler(s), connected steam turbine – generator and auxiliaries;

(i) "**CERC**" means the Central Electricity Regulatory Commission;

(j) "**Commission**" means the Delhi Electricity Regulatory Commission;

(k) "**Conduct of Business Regulations**" means the Delhi Electricity Regulatory Commission Comprehensive (Conduct of Business) Regulations, 2001, as amended from time to time;

(l) "**Control Period**" means a multi-year period fixed by the Commission, from the date of issue of the Multi Year Tariff Order till 31st March 2011;

(m) "**Cut off Date**" in relation to a Generating Station, means the date of first Financial Year closing after one year of the Date of Commercial Operation of the generating station;

(n) "**Date of Commercial Operation**" or 'COD':

(i) in relation to a Unit means the date declared by the generator after demonstrating the Maximum Continuous Rating (MCR) or Installed Capacity (IC) through a successful trial run after notice to the Beneficiaries;

(ii) in relation to the generating station means the Date of Commercial Operation of the last Unit or Block of the generating station in accordance with the clause (i) above;

(o) "**Declared Capacity**" or 'DC' means the capability of the generating station to deliver ex-bus electricity in MW declared by such generating station in relation to any period of the day or whole of the day, duly taking into account the availability of fuel;

Note: In case of a gas turbine generating station or a combined cycle generating station, the generating station shall declare the capacity for Units and modules on gas fuel and liquid fuel separately, and these shall be scheduled separately. Total Declared Capacity and total Scheduled Generation for the generating station shall be the sum of the Declared Capacity and Scheduled Generation for gas fuel and liquid fuel. The computation of Availability and Plant Load Factor shall be based on the above referred Declared Capacity and Scheduled Generation respectively;

(p) "**Financial Year**" means a period commencing on 1st April of a calendar year and ending on 31st March of the subsequent calendar year;

(q) "**Gross Calorific Value**" or 'GCV' in relation to a thermal power generating station means the heat produced in kCal by complete combustion of one kilogram of solid fuel or one litre of liquid fuel or one standard cubic meter of gaseous fuel, as the case may be;

(r) "**Gross Station Heat Rate**" or 'SHR' means the heat energy input in kCal required to generate one kWh of electrical energy at generator terminals;

(s) "**Infirm Power**" means electricity generated prior to commercial operation of the Unit of a generating station;

(t) "**Installed Capacity**" or 'IC' means the summation of the name plate capacities of all the Units of the generating station or the capacity of the generating station (reckoned at the generator terminals);

(u) "**Maximum Continuous Rating**" or `MCR' in relation to a Unit of the thermal power generating station means the maximum continuous output at the generator terminals, guaranteed by the manufacturer at rated parameters, and in relation to a Unit or Block of a combined cycle thermal power generating station means the maximum continuous output at the generator terminals, guaranteed by the manufacturer with water/steam injection (if applicable) and corrected to 50 Hz grid frequency and specified site conditions;

(v) "**Plant Load Factor**" or 'PLF' for a given period, means the total sent out energy corresponding to Scheduled Generation during the period, expressed as a percentage of sent out energy corresponding to Installed Capacity in that period and shall be computed in accordance with the following formula:

$$\mathbf{PLF = 10000 \times \Sigma\, SGi / \{N \times IC \times (100\text{-}AUXn)\}\ \%}$$

Where:

IC = Installed Capacity of the generating station in MW,

SGi = Scheduled Generation in MW for the i^{th} time block of the period,

N = Number of time blocks during the period,

AUXn = Normative Auxiliary Energy Consumption as a percentage of gross generation, and

Σ = Summation from i = 1 to N;

(w) "**Project**" means a generating station;

(x) "**State Load Dispatch Centre**" or 'SLDC' means the centre established by the State Government for purposes of exercising the powers and discharging the functions under Section 31 of the Act;

(y) "**Scheduled Generation**" or 'SG' at any time or for any period or time block means schedule of generation in MW ex-bus given by the State Load Despatch Centre;

Note: For the gas turbine generating station or a combined cycle generating station if:

the average frequency for any time block, is below 49.52 Hz but not below 49.02 Hz and the Scheduled Generation is more than 98.5% of the Declared Capacity, the Scheduled Generation shall be deemed to have been reduced to 98.5% of the Declared Capacity, and

if the average frequency for any time block is below 49.02 Hz and the Scheduled Generation is more than 96.5% of the Declared Capacity, the Scheduled Generation shall be deemed to have been reduced to 96.5% of the Declared Capacity;

(z) "**State**" means the National Capital Territory of Delhi;

(aa) "**Unit**" in relation to a thermal power generating station means steam generator, turbine-generator and auxiliaries, or in relation to a combined cycle thermal power generating station, means turbine-generator and auxiliaries.

2.2 Words and expressions used respectively and not defined in these Regulations but defined in the Act shall have the meanings respectively assigned to them in the Act.

2.3 All proceedings under these Regulations shall be governed by the Conduct of Business Regulations.

A3: SCOPE OF REGULATIONS AND EXTENT OF APPLICATION

3.1 These Regulations shall apply in all cases of determination of generation tariff under Section 62 of the Act, for supply of electricity to a distribution licensee by existing generating stations, but shall not apply where tariff has been determined through transparent process of bidding in accordance with the guidelines issued by the Central Government as per the provisions of Section 63 of the Act.

3.2 Subject to the provisions of the Act, Rules and Policies, any new generating station which comes up in future and proposes to supply electricity to a distribution licensee of the State shall be subjected to the norms prescribed under these Regulations by the Commission, unless it proposes to supply electricity through bidding in accordance with the guidelines issued by the Central Government as per provisions of Section 63 of the Act.

A4: DETERMINATION OF GENERATION TARIFF

4.1 Existing Generating Station:

Where the Commission has, at any time prior to the notification of these Regulations, approved a Power Purchase Agreement (PPA) or arrangement between a Generating Company and a Beneficiary, or has adopted the tariff contained therein for supply of electricity from an existing generating station then the tariff for supply of electricity by the Generating Company to the Distribution Licensee shall be in accordance with such PPA or arrangement for such period as may be so approved or adopted by the Commission, to the extent of existing Installed Capacity as contained in the PPA.

4.2 New Generating Station:

Where the generating station has been declared under commercial operation from a date after the issue of these Regulations or on or after April 1, 2007, the tariff for supply of electricity by the Generating Company shall be decided in accordance with these Regulations.

A5: GENERAL APPROACH AND GUIDING PRINCIPLES

5.1 The Commission in specifying these Regulations shall be guided by the principles contained in Sections 61 and 62 of the Act to encourage competition, efficiency, economical use of resources, good performance and optimum investments.

5.2 The Commission shall adopt Multi Year Tariff Framework for determination of tariff for each year of the Control Period.

5.3 The Multi Year Tariff framework shall be based on the following:

(a) Business Plan of the Generating Company (plant wise separately) for the entire Control Period to be submitted to the Commission for approval, prior to the start of the Control Period;

(b) Applicant’s forecast of expected tariff for sale of power for each year of the Control Period, based on reasonable assumptions of the underlying financial and operational parameters, as submitted in the Business Plan;

(c) Trajectory for specific parameters shall be stipulated by the Commission, where the performance of the Applicant is sought to be improved through incentives and disincentives;

(d) Annual review of performance shall be conducted vis-à-vis the approved forecast.

Baseline

5.4 The baseline values (operating and cost parameters) for the Control Period shall be determined by the Commission and shall be based on the approved values by the Commission, latest audited accounts, estimate of the actuals for the relevant year and other factors considered appropriate by the Commission.

5.5 The Commission shall normally not revisit the performance targets even if the targets are fixed on the basis of un-audited accounts.

Capital Investment

5.6 Subject to the provisions of Act, Rules and Policies, the Commission shall approve capital investment plan of an existing generating company for the Control Period commensurate with generation capacity growth. The investment plan shall also include corresponding capitalisation schedule and financing plan. The Commission shall review the actual capital investment at the end of each year of the Control Period. Adjustment for the actual capital investment vis-à-vis approved capital investment shall be done at the end of Control Period.

Performance Targets

5.7 The Commission shall set targets for each year of the Control Period for the items or parameters that are deemed to be "controllable" and which include

(a) Station Heat Rate;

(b) Availability;

(c) Auxiliary Energy Consumption;

(d) Secondary Fuel Oil Consumption;

(e) Operation and Maintenance Expenses;

(f) Plant Load Factor

(g) Financing Cost which includes cost of debt (interest), cost of equity (return); and

(h) Depreciation.

5.8 Any financial loss on account of underperformance on targets for parameters specified in Clause 5.7 (a) to (e) is not recoverable through tariffs. Similarly, any financial gain on account of over-performance with respect to these parameters is to the Generating Company's benefit and shall not be adjusted in tariffs.

Refund of Excess Amount

5.9 If a Generating Company recovers the charges exceeding the tariff determined by the Commission, the excess amount shall be refunded to the Beneficiary, which has paid such excess charges, along with interest for that period calculated considering existing Bank Rate.

A6: PRINCIPLES FOR DETERMINATION OF TARIFF

Capital Cost of the Project

6.1 Subject to prudence check by the Commission, the actual expenditure incurred on completion of the Project shall form the basis for determination of final tariff. The final tariff shall be determined based on the admitted capital expenditure actually incurred up to the Date of Commercial Operation of the generating station and shall include capitalised initial spares subject to following ceiling norms as a percentage of the original Project cost as on the Cut off Date:

(a) Coal-based generating stations – 2.5%;

(b) Gas Turbine/Combined Cycle generating stations – 4.0%;

Provided that where the power purchase agreement entered into between the generating company and the Beneficiaries provides a ceiling of actual expenditure, the capital expenditure shall not exceed such ceiling for determination of tariff;

Provided further that the Project cost already admitted by the Commission for the purpose of tariff fixation, shall be considered as the original Project cost.

6.2 For multi-unit Projects, the capital cost of the Project shall be broken up into stages and by distinct Units forming part of the Project. In case the stage-wise or Unit-wise break up of the capital cost of the Project is not available and in case of on-going Projects, the common facilities shall be apportioned on the basis of the Installed Capacity of the Units.

Additional Capitalisation

6.3 The Commission shall include, subject to prudence check, the following capital expenditure, incurred after the Date of Commercial Operation of a Project and upto the Cut off Date, to its original Project cost, provided the same was part of the original scope of work of the Project:

(a) Deferred liabilities;

(b) Works deferred for execution;

(c) Procurement of initial capital spares in the original scope of work, subject to ceiling specified above;

(d) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and

(e) On account of change of law;

Provided that original scope of work along with estimates of expenditure shall be submitted along with the application for determination of tariff;

Provided further that a list of the deferred liabilities and works deferred for execution shall be submitted along with the application for determination of tariff after the Date of Commercial Operation of the generating station.

Sale of Infirm Power

6.4 Any revenue (other than the recovery of fuel cost) earned by the generating company from sale of Infirm Power, shall be taken as reduction in capital cost and shall not be treated as revenue.

Debt-Equity Ratio

6.5 *Existing Stations:*

(a) For generating stations mentioned in the Transfer Scheme, dated July 1, 2002, the amount of loan capital shall be equal to the sum of the outstanding balance of all long term loans taken to finance the generating station, at the commencement of the Financial Year for which tariff is to be determined, as reflected in the tariff orders of the Commission.

(b) The equity capital for generating stations mentioned in the Transfer Scheme, dated July 1, 2002 shall be taken as specified therein. Any fresh addition in equity after July 1, 2002 as may be approved by the Commission shall also be considered.

(c) For other stations set up subsequent to Transfer Scheme dated July 1, 2002, the normative debt-equity ratio shall be considered to be 70:30 for determination of tariff.

6.6 *New Stations:*

(a) The normative debt-equity ratio shall be considered to be 70:30 for determination of tariff.

(b) In case of a generating station where equity employed is more than 30%, the amount of equity for determination of tariff shall be limited to 30% and the balance amount shall be considered as the normative loan.

(c) In case of a generating station where actual equity employed is less than 30%, the actual debt and equity shall be considered for determination of tariff.

6.7 *Renovation and Modernisation:*

Any approved capital expenditure incurred on renovation, modernisation, replacement or extension of life of existing generating assets, after the issue of these Regulations shall be considered to be financed at a normative debt-equity ratio of 70:30. In case the amount of equity is less than 30%, the actual debt-equity ratio shall be considered.

Interest and Finance Charges

6.8 Interest and finance charges on loan capital shall be computed on the outstanding loans, duly taking into account the schedule of repayment, as per the terms and conditions of relevant agreements of loan, bond or non convertible debentures. Exception can be made for the existing or past loans which may have different terms as per the agreements already executed if the Commission is satisfied that the loan has been contracted for and applied to identifiable and approved Projects.

6.9 The interest rate on the amount of equity in excess of 30% treated as notional loan shall be the weighted average rate of the loans of the respective years and shall be further limited to the prescribed rate of return on equity in the Regulation;

Provided that all loans considered for this purpose shall be identified with the assets created;

Provided that interest and finance charges of re-negotiated loan agreements shall not be considered, if they result in higher charges;

Provided further that interest and finance charges on works in progress shall be excluded and shall be considered as part of the capital cost;

Provided further that neither penal interest nor overdue interest shall be allowed for computation of Tariff.

6.10 In case any moratorium period is availed of in any loan, depreciation provided for in the tariff during the years of moratorium shall be treated, as notional repayment of loan during those years and interest on loan capital shall be calculated accordingly.

6.11 The Generating Station shall make every effort to refinance the loan as long as it results in net benefit to the Beneficiaries. The cost associated with such refinancing shall be borne by the Beneficiaries and any benefit on account of refinancing of loan and interest on loan shall be passed on to the Beneficiaries. Refinancing may also include restructuring of debt.

Working Capital

6.12 The Commission shall calculate the Working Capital requirement for coal-based generating stations containing the following components:

(a) Cost of Coal for 1.5 months for pithead stations and for 2 months in non-pithead stations corresponding to the Target Availability;

(b) Cost of Secondary Fuel Oil for 2 months corresponding to the Target Availability;

(c) O&M expenses for 1 month;

(d) Receivables equivalent to 2 months of fixed and variable charges for sale of electricity calculated on the Target Availability.

6.13 For the gas based generating stations, the working capital requirements are calculated using the following components:

(a) Fuel expenses for 1 month corresponding to the Target Availability duly taking into account the mode of operation of the generating station on gas fuel and liquid fuel;

(b) Liquid fuel stock for ½ month;

(c) O&M expenses for 1 month;

(d) Receivables equivalent to 2 months of fixed and variable charges for sale of electricity calculated on the Target Availability.

Interest on Working Capital

6.14 Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of SBI as on April 1 of the relevant year. The interest on working capital shall be payable on normative basis notwithstanding that the Generating Station has not taken working capital loan from any outside agency or has exceeded the working capital loan based on the normative figures.

Depreciation

6.15 Depreciation shall be calculated for each year of the Control Period, on the amount of Original Cost of the Fixed Assets;

Provided that depreciation shall not be allowed on assets funded by any capital subsidy / grant.

6.16 Depreciation for each year of the Control Period shall be determined based on the methodology as specified in these Regulations along with the rates and other terms specified in Appendix 1 of these Regulations.

6.17 Depreciation shall be calculated annually, based on the straight line method, over the useful life of the asset. The base value for the purpose of depreciation shall be original cost of the asset.

6.18 The residual value of assets shall be considered as 10% and depreciation shall be allowed upto a maximum of 90% of the original cost of the asset. Land is not a depreciable asset and its cost shall be excluded while computing 90% of the original cost of the asset. In the event of Renovation and Modernisation expenditure affecting the life of the asset, the depreciation shall be allowed upto a maximum of 90% of the cost of the asset within the enhanced life span of the asset.

6.19 Depreciation shall be charged from the first year of operation of the asset. In case, the operation of the asset is for a part of the year, depreciation shall be charged on a pro rata basis.

6.20 In addition to allowable depreciation, the generating company shall be entitled to Advance Against Depreciation, computed in the manner given hereunder;

AAD = Loan (raised for capital expenditure) repayment amount based on loan repayment tenure, subject to a ceiling of 1/10th of loan amount minus depreciation as calculated on the basis of these Regulations;

Provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year;

Provided further that Advance Against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

6.21 On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.

Return on Equity

6.22 Return on equity shall be computed on the equity determined in accordance with Clauses 6.5 to 6.7 and shall be 14% (post tax);

Provided that return on equity invested in work in progress shall be allowed from the Date of Commercial Operation.

6.23 The premium raised by the Generating Company while issuing share capital and investment of internal resources created out of free reserve, if any, shall also be reckoned as equity for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilized for meeting capital expenditure and forms part of the approved financial package. For the purposes of calculation of computation of return, the portion of free reserves utilized for meeting the capital expenditure shall be considered from the date the asset created is productively deployed in the generation business.

Corporate Income Tax

6.24 Income Tax, if any, on the generation business of the Generating Company shall be treated as expense and shall be recoverable from its Beneficiaries. However, tax on any income other than that through the generation business shall not be a pass through in tariff, and it shall be payable by the Generating Company itself.

6.25 Any under-recoveries or over-recoveries of tax on income shall be adjusted every year on the basis of income-tax assessment under the Income-Tax Act, 1961, as certified by the statutory auditors;

Provided that the generating station-wise profit before tax as estimated for a year in advance shall constitute the basis for distribution of the corporate tax liability to all the generating stations;

Provided further that the benefits of tax-holiday as applicable in accordance with the provisions of the Income-Tax Act, 1961 shall be passed on to the Beneficiaries;

Provided further that in the absence of any other equitable basis the credit for carry forward of losses and unabsorbed depreciation shall be given in the proportion as provided in the first proviso to this Regulation;

Provided further that income-tax allocated to the generating station shall be charged to the Beneficiaries in the same proportion as annual fixed charges.

6.26 The income tax actually payable or paid shall be included in the Tariff computation. The actual assessment of income tax should take into account benefits of tax holiday, and the credit for carry forward of losses applicable as per the provisions of the Income Tax Act 1961 shall be passed on to the Beneficiaries.

6.27 Tax on income, if any, liable to be paid shall be limited to tax on return on the equity component of capital deployed. However any tax liability on incentives and savings due to improved performance and UI earnings, if any, shall not be considered for passing onto the Beneficiaries.

Recovery of Corporate Income Tax

6.28 Recovery of income tax shall be done directly by the Generating Company from the Beneficiaries without making any application before the Commission.

Provided that in case of any objections by the Beneficiaries to the amounts claimed on account of income tax, the Beneficiaries shall make the payments and may make an appropriate application before the Commission for its decision.

Operation and Maintenance Expenses

6.29 Operation and Maintenance (O&M) expenses shall comprise the following:

(a) Salaries, wages, pension contribution and other employee costs;

(b) Administrative and General costs;

(c) Repairs and maintenance, and

(d) Other miscellaneous expenses, statutory levies and taxes (except corporate income tax).

6.30 *Existing Generating Stations*: The Applicant shall submit details on O&M expenses as required by the Commission. The O&M expenses for the Base Year shall be determined based on latest audited accounts/ actuals, estimates of the Generating Company for relevant years and other factors considered relevant.

6.31 The O&M expenses permissible towards determination of tariff for each year of the Control Period shall be determined after a prudency check by the Commission based on submissions of the Generating Company, previous years' actual expenses and any other factor considered relevant.

6.32 *New Generating Stations:*

6.33 The O&M expenses (in Rs lakhs/ MW) permissible towards determination of tariff for each year of the Control Period shall be as follows:

(a) Coal based Thermal Power Stations:

Year	200/ 210/ 250 MW sets	500 MW and above sets
2007-08	11.70	10.52
2008-09	12.17	10.95
2009-10	12.65	11.38
2010-11	13.16	11.83

Note: For the generating stations having combination of 200/210/250 MW sets and 500 MW and above set, the weighted average value for operation and maintenance expenses shall be adopted.

(b) Gas Turbine / Combined Cycle Generating Stations:

Year	Gas Turbine/ Combined Cycle generating stations other than small gas turbine power generating stations	Small gas turbine power generating stations
2007-08	8.77	10.65
2008-09	9.12	11.07
2009-10	9.49	11.52
2010-11	9.86	11.98

A7: THERMAL POWER GENERATING STATIONS

Operational Norms

7.1 The values for different operational norms for the existing generating plants have been decided, considering the vintage and current operations of these plants are as follows:

Indraprastha Power Generation Co. Ltd

1) Indraprastha Thermal Power Station (IP TPS)

	2007-08	2008-09	2009-10	2010-11
Availability (%)	45%	45%	45%	45%
Station Heat Rate (kCal/kWh)	3235	3235	3235	3235
Auxiliary Consumption (%)	11.64%	11.64%	11.64%	11.64%
Secondary Fuel Oil (LDO) Consumption (ml/kWh)	9.0	9.0	9.0	9.0
Target PLF for Incentive (%)	45%	45%	45%	45%

2) Rajghat Thermal Power House (RPH)

	2007-08	2008-09	2009-10	2010-11
Availability (%)	70%	70%	70%	70%
Station Heat Rate (kCal/kWh))	3200	3200	3200	3200
Auxiliary Consumption (%)	11.28%	11.28%	11.28%	11.28%
Secondary Fuel Oil (LDO) Consumption (ml/kWh)	1.50	1.50	1.50	1.50
Secondary Fuel Oil (LSHS)	3.75	3.75	3.75	3.75

	2007-08	2008-09	2009-10	2010-11
Consumption (gm/kWh)				
Target PLF for Incentive (%)	70%	70%	70%	70%

3) Indraprastha Gas Turbine Power Station (IP GTPS)

	2007-08	2008-09	2009-10	2010-11
Availability (%)	70%	70%	70%	70%
Station Heat Rate (kCal/kWh)	2450	2450	2450	2450
Open Cycle Station Heat Rate (kCal/kWh)	3125	3125	3125	3125
Combined Cycle Auxiliary Consumption (%)	3.0%	3.0%	3.0%	3.0%
Open Cycle Auxiliary Consumption (%)	1.0%	1.0%	1.0%	1.0%
Target PLF for Incentive (%)	70%	70%	70%	70%

Pragati Power Corporation Limited (PPCL)

Pragati Power Station

	2007-08	2008-09	2009-10	2010-11
Availability (%)	80%	80%	80%	80%
Station Heat Rate (kCal/kWh)	2000	2000	2000	2000
Open Cycle Station Heat Rate (kCal/kWh)	2900	2900	2900	2900
Combined Cycle Auxiliary Consumption (%)	3.0%	3.0%	3.0%	3.0%
Open Cycle Auxiliary Consumption (%)	1.0%	1.0%	1.0%	1.0%
Target PLF for Incentive (%)	80%	80%	80%	80%

7.2 The Commission may modify these norms of operations after considering the capital investments approved for any Renovation and Modernisation activities in these plants.

7.3 The norms of operation for generating stations other than existing stations shall be as under:

<u>Availability:</u> The Target Availability for recovery of full capacity (fixed) charges shall be 80%.

Target Plant Load Factor (PLF) for Incentive: The Target PLF for claiming incentives shall be 80%.

Gross Station Heat Rate:

(a) Coal based Thermal Power Stations:

	200/210/250 MW sets	500 MW and above sets
Gross SHR	2500 kCal/kWh	2450 kCal/kWh

Note 1: In respect of 500 MW and above Units where the boiler feed pumps are electrically operated, 40 kCal/kWh shall be reduced from the generating station heat rate indicated above.

Note 2: For generating stations having combination of 200/210/250 MW sets and 500 MW and above sets, the normative gross generating station heat rate shall be the weighted average generating station heat rate of various sets.

(b) Gas Turbine / Combined Cycle generating stations:

The Station Heat Rates for the plants having Date of Commercial Operation before 1 April, 2004 shall be determined as:

Open Cycle: 2900 kCal/ kWh;

Combined Cycle: 2000 kCal/ kWh.

The Station Heat Rates for the plants having Date of Commercial Operation on or after 1 April, 2004 shall be determined as:

	Advance Class Machine	E/EA/EC/E2 Class Machine
Open Cycle	2685 kCal/kWh	2830 kCal/kWh
Combined Cycle	1850 kCal/kWh	1950 kCal/kWh

Secondary Fuel Oil Consumption for Coal based generating stations 2.0 ml/kWh.

Auxiliary Energy Consumption:

Coal-based generating stations

200 MW series	With cooling towers	9.0 %
	Without cooling towers	8.5 %
500 MW series – Steam driven	With cooling towers	7.5 %

Boiler Feed Pumps	Without cooling towers	7.0 %
500 MW series – Electrically driven Boiler Feed Pumps	With cooling towers	9.0 %
	Without cooling towers	8.5 %

<u>Gas-based and Naphtha-based generating stations</u>

Combined cycle	3.0%
Open cycle	1.0%

7.4 Wherever the station is designed for combined cycle operation, the approval of SLDC shall be required for operation of the station in the open cycle mode.

7.5 The Commission may prescribe relaxed operational norms including the norms of Target Availability and PLF contained in these Regulations for a generating station, and these relaxed norms shall be applicable for determination of tariff for such generating station during the Control Period.

7.6 The norms of operation under these Regulations shall be ceiling norms and shall not preclude generating companies and the Beneficiaries from agreeing to improve norms of the operation. If PPA stipulates better norms of operation then such norms provided in the PPA shall be considered.

7.7 In case of renovation and modernisation, derating and rerating of the generating station, norms of operation shall be reviewed and modified accordingly.

Components of Tariff

7.8 The tariff for sale of electricity from a thermal or gas based generating station shall comprise of two parts, namely, the recovery of annual capacity (fixed) charge and energy (variable) charge.

7.9 The fixed cost of a generating station eligible for recovery through capacity charge shall include the following elements:

(a) Operation and Maintenance Expenses;

(b) Depreciation including Advance against Depreciation;

(c) Interest on loans;

(d) Interest on working capital; and

(e) Return on Equity.

7.10 The energy (variable) charge shall cover fuel costs.

Recovery of Capacity Charge

7.11 A generating station shall recover full capacity charge at the Target Availability specified for it by the Commission. Recovery of capacity charge below the level of Target Availability shall be on pro rata basis. No capacity charge shall be payable at zero Availability.

7.12 Payment of capacity charge shall be on monthly basis in proportion to allocated/ contracted capacity.

Energy Charge

7.13 The energy (variable) charge shall cover fuel costs and shall be worked out on the basis of ex-bus energy scheduled from the generating station as per the following formula:

$$\text{Energy Charge (Rs.)} = \text{REC} * SE_{ex\text{-}bus}$$

Where,

REC is the Rate of Energy Charge in Rs./kWh determined using the following formula:

$$REC = \frac{100 * [P_P * Q_P + P_S * Q_S]}{[100 - AUX]}$$

P_P is the price of primary fuel namely coal or gas or liquid fuel in Rs./kg or Rs./m^3 or Rs./litre, as the case may be;

Q_P is the quantity of primary fuel required for generation of one kWh of electricity at generator terminals in Kg or litre or m^3, as the case may be, and shall be computed on the basis of normative Gross Station Heat Rate (less heat contributed by secondary fuel oil for coal based generating stations) and Gross Calorific Value of coal or gas or liquid fuel;

Ps = Price of Secondary fuel oil in Rs./ml;

Qs =Normative Quantity of Secondary fuel oil in ml/kWh as per values approved by the Commission;

AUX= Normative Auxiliary Energy Consumption as % of gross generation as per values approved by the Commission; and

$SE_{ex\text{-}bus}$ is the Scheduled Energy (ex-bus) for the month in kWh.

Fuel Price Adjustment

7.14 The Fuel Price Adjustment (FPA) applicable for calculation of Energy Charges is as follows:

(a) For coal-based generating stations, FPA = A + B

Where,

FPA – Fuel price Adjustment for a month in Paise/kWh Sent out;

A – Fuel price adjustment for Secondary Fuel oil in Paise/kWh sent out;

B – Fuel price adjustment for Coal in Paise/kWh sent out;

$$A = \frac{10 * SFC_n * (P_{om} - P_{os})}{(100 - AC_n)}$$

$$B = \frac{10}{(100 - AC_n)} * [SHR_n * \{(P_{cm}/K_{cm}) - (P_{cs}/K_{cs})\} - SFC_n * \{(K_{om} * P_{cm} / K_{cm}) - K_{os} * P_{cs}/K_{cs})\}]$$

Where,

SFC_n = Normative Specific Fuel Oil consumption in l/kWh;

SHR_n = Normative Gross Station Heat Rate in Kcal/kWh;

AC_n = Normative Auxiliary consumption in percentage;

P_{om} = Weighted average price of fuel oil on as consumed basis during the month in Rs./KL;

K_{om} = Weighted average Gross Calorific Value of fuel oils fired at boiler front for the month in Kcal/Litre;

P_{os} = Base value of price of fuel oils as taken for determination of base energy charge in tariff order in Rs./ KL;

K_{os} = Base value of Gross Calorific Value of fuel oils as taken for determination of base energy charge in tariff order in Kcal/Litre;

P_{cm} = Weighted average price of coal procured and burnt during the month at the power station in Rs. / MT;

K_{cm} = Weighted average Gross Calorific Value of coal fired at boiler front for the month in Kcal/kg;

(b) For gas based thermal power plants, the Fuel Price Adjustment is calculated using the following formula:

$$FPA = \frac{10 * SHR_n * [(P_m / K_m) - (P_s / K_s)]}{(100 - AC_n)}$$

Where:

FPA = Fuel price Adjustment for a month in Paise/kWh sent out;

SHR_n = Normative Gross Station Heat Rate expressed in kCal/kWh;

AC_n = Normative Auxiliary Consumption in percentage;

P_m = Weighted average price of Gas or Liquid fuel as per PSL for the month in Rs. / 1000 SCM of Rs./ KL or Rs./MT;

K_m = Weighted average Gross Calorific Value of Gas or Liquid fuel for the month in Kcal/ SCM or kCal/ Litre or kCal/ Kg;

P_s = Base price of Gas or Liquid fuel as taken for determination of base energy charge in tariff order in Rs. / 1000 SCM of Rs./ KL or Rs./MT;

K_s = Base value of Gross Calorific Value of Gas or Liquid fuel as taken determination of base energy charge in tariff order in Kcal/ SCM or kCal/Litre or kCal/ Kg;

7.15 Any variation in fuel prices on account of change in the Gross Calorific Value (GCV) of coal or gas or liquid fuel shall be adjusted on a monthly basis on the basis of average GCV of coal or gas or liquid fuel in stock, received and burnt and weighted average landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be for a power station.

7.16 In its bills, the Generating Company shall separately indicate rate of energy charges at base price of primary and secondary fuel specified by the Commission and the fuel price adjustment. No separate petition needs to be filed with the Commission for fuel price adjustment.

7.17 The landed cost of coal shall include:

(a) Base cost of coal;

(b) Royalty;

(c) Taxes and duties;

(d) Transport cost by rail / ocean / road / pipeline or any other means;

For the purpose of computing energy charges, landed Cost of coal shall be arrived at after considering normative transit and handling loss of 0.8% on the quantity of coal dispatched by the coal supplier in case of non-pit-head stations and 0.3% on the quantity of coal dispatched by the fuel supplier in case of pit-head stations.

Incentive

7.18 Incentive shall be payable at a flat rate of 25 paise/kWh for ex-bus scheduled energy corresponding to Scheduled Generation in excess of ex-bus energy corresponding to Target Plant Load Factor.

Unscheduled Interchange (UI) Charges

7.19 The generating station may be entitled to receive or shall be required to bear, as the case may be, the charges for deviations between energy sent-out corresponding to Scheduled Generation and actual energy sent-out, as per the rate approved by the Commission.

Deemed Generation

7.20 In the event of bottleneck in evacuation of power due to any constraint, outage, failure or limitation in the transmission system, associated switchyard and sub-stations owned by the Transmission Licensee, (certified by the State Load Despatch Centre) necessitating reduction in generation, the State Load Despatch Centre shall revise the schedule of generation.

Billing and payment of capacity charges

7.21 Billing and payment of capacity charges shall be done on a monthly basis in the following manner:

(a) Any entity having power purchase agreement for firm power for more than one year shall pay the capacity charges in proportion to its percentage share, allocation or contract in the Installed Capacity of a generating station;

(b) If any capacity remains un-requisitioned in any period, the Generating Company shall be free to sell electricity to any entity;

(c) Any entity having power purchase agreement for firm power for more than one year may surrender its share in Installed Capacity in favour of another entity. In such circumstances, the capacity charges payable shall be revised in accordance with capacity surrendered and/or additional capacity acquired.

Any such reallocation shall be notified by the SLDC in advance, at least three (3) days prior to such reallocation taking effect;

(d) If any capacity remains un-requisitioned in any period, full capacity charges shall be shareable by the entities mentioned in sub clause (a) above, subject to sub clause (b); and

(e) The capacity charges shall be paid by the entities covered under (a), (b), and (d) above to the Generating Company every month in accordance with the following formula:

(i) Total Capacity charges payable to the thermal power generating company for the:

1st month = (1xACC1)/12
2nd month = (2XACC2 - 1XACC1)/12
3rd month = (3xACC3 - 2XACC2)/12
4th month = (4xACC4 - 3xACC3)/12
5th month = (5XACC5 - 4xACC4)/12
6th month = (6XACC6 - 5xACC5)/12
7th month = (7XACC7 - 6xACC6)/12
8th month = (8xACC8 - 7xACC7)/12
9th month = (9xACC9 - 8xACC8)/12
10th month = (10xACC10 – 9xACC9)/12
11th month = (11xACC11 - 10xACC10)/12
12th month = (12xACC12 - 11xACC11)/12

(ii) Each entity having firm share in capacity of the generating station shall pay for the:

1st month = [ACC1 x WB1]/1200
2nd month = [2XACC2 x WB2 - 1XACC1x WB1]/1200
3rd month = (3xACC3 x WB3 - 2XACC2 x WB2]/1200
4th month = (4xACC4 x WB4 - 3xACC3 x WB3]/1200
5th month = (5XACC5 x WB5 - 4xACC4 x WB4]/1200
6th month = (6XACC6 x WB6 - 5xACC5 x WB5]/1200
7th month = (7XACC7 x WB7 - 6xACC6 x WB6]/1200
8th month = (8xACC8 x WB8 - 7xACC7 x WB7]/1200
9th month = (9xACC9 x WB9 - 8xACC8 x WB8]/1200
10th month = (10xACC10 x WB10- 9xACC9 x WB9]/1200
11th month = (11xACC11 x WB11- 10xACC10x WB10]/1200
12th month = (12xACC12 x WB12- 11xACC11x WB 11]/1200

Where,

ACC1, ACC2, ACC3, ACC4, ACC5 ACC6, ACC7, ACC8, ACC9, ACC10, ACC11 and ACC12 are the amount of Annual Capacity Charge corresponding to 'Target Availability' for the cumulative period up to the end of 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th and 12th months respectively;

WB1, WB2, WB3, WB4, WB5, WB6, WB7, WB8, WB9, WB10, WB11 and WB12 are the weighted average of percentage of shared capacity during the cumulative period up to 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th and 12th months respectively.

(f) In case an Applicant is unable to reach the norms of Target PLF or Availability fixed in any year, any excess amount recovered in the year shall be refunded or adjusted in the subsequent bills following the determination of the actual performance.

Demonstration of Declared Capability

7.22 The Generating Company may be required to demonstrate the Declared Capability of its generating station as and when asked by the State Load Dispatch Centre. In the event of the Generating Company failing to demonstrate the Declared Capability, the capacity charges due to the generator shall be reduced as a measure of penalty; the quantum of which shall be decided by the Commission.

7.23 The operating log books of the generating station shall be available for review by the SLDC. These books shall keep record of machine operation and maintenance.

Late Payment Surcharge

7.24 In case the payment of bills of capacity charges and energy charges by the Beneficiary is delayed beyond a period of one month from the date of billing, the generating company shall levy a late payment surcharge at the rate of 1.25% per month.

Rebate

7.25 For payment of bills of capacity charges and energy charges through a letter of credit on presentation, a rebate of 2% shall be allowed. If the payment is made by any other mode but within a period of one month of presentation of bills by the generating company, a rebate of 1% shall be allowed.

Safety Standards

7.26 The Generating Company shall develop a Safety Manual and follow procedures to maintain minimum safety standards during construction, operation, etc. in line with the provisions of Section 53 of the Act.

A8: MULTI YEAR TARIFF FILING PROCEDURE

8.1 The Multi Year Tariff filing shall be in such form and in such manner as may be decided by the Commission and as per the provisions of Conduct of Business Regulations.

8.2 The Applicant shall also submit the Multi Year Tariff filing in electronic format to the Commission.

Business Plan Filings

8.3 The Generating Company shall file for the Commission's approval, on 1st April of the year preceding the first year of the Control Period or any other date as may be directed by the Commission, a Business Plan approved by the Board of Directors. The Business Plan shall be for the entire Control Period and shall, interalia, contain

(a) Capital Investment Plan: This shall include details of the investments planned by the Generating Company, along with the corresponding capitalisation schedule and financing plan. This plan shall be commensurate with capacity enhancement and proposed efficiency improvements for various plants of the Company;

(b) Capital Structure: The Generating Company shall submit plant-wise details of the capital structure and cost of financing (interest on debt) and return on equity, after considering the existing market conditions, terms of the existing loan agreements, risks associated in generation business and creditworthiness;

(c) Operation and Maintenance (O&M) expenses: This shall include the costs estimated for the Base Year, the actual expenses incurred in the previous two years and the projected values for each year of the Control Period based on the proposed norms for O&M cost, including indexation and other appropriate mechanisms;

(d) Depreciation: This shall include details of depreciation based on the fair life of the asset and capitalisation schedules for each year of the Control Period;

(e) Performance Targets: A set of targets proposed for other controllable items such as Plant Load Factor, Station Heat Rate, Secondary Fuel Oil Consumption, and Auxiliary Power Consumption. The targets shall be consistent with the Capital Investment Plan proposed by the Generating Company;

(f) Other Information: This shall include any other details considered appropriate by the Generating Company for consideration during determination of tariff.

Tariff Filings

8.4 The Applicant shall file the application for approval of Generation Tariff for each year of the Control Period consistent with the Business Plan, not less than 120 days before the commencement of the first year of the Control Period or such other date as may be directed by the Commission.

Review at the end of the Control Period

8.5 Towards the end of the Control Period, the Commission shall seek to review if the implementation of the principles laid down in these Regulations has achieved their intended objectives. While doing this, the Commission shall take into account, among other things, the industry structure, sector requirements, consumer and other stakeholder expectations and Applicant's requirements at that point in time. Depending on the requirements of the sector to meet the objects of the Act, the Commission may revise the principles for the second Control Period.

8.6 The end of the first Control Period shall be the beginning of the second Control Period and the Generating Company shall follow the same procedure unless required otherwise by the Commission. The Commission shall analyse the performance of the Generating Company with respect to the targets set out at the beginning of the first Control Period and based on the actual performance, expected efficiency improvements and other factors prevalent, determine the initial values for the next Control Period.

A9: DISPOSAL OF APPLICATION

9.1 The Commission shall process the filings made by the Generating Company in accordance with these Regulations and the Conduct of Business Regulations.

9.2 Based on the Generating Company's filings, objections/ suggestions from public and other stakeholders, the Commission may accept the application with such modifications and/or such conditions as may be deemed just and appropriate and issue, within 120 days of the receipt of the application and after considering all suggestions and objections from public and other stakeholders, an Order containing inter alia targets for controllable items and the generation tariffs for each year of the Control Period.

A10: PERIODIC REVIEWS

10.1 To ensure smooth implementation of the Multi Year Tariff (MYT) framework, the Commission may undertake periodic reviews of Generating Company's performance during the Control Period, to address any practical issues, concerns or unexpected outcomes that may arise.

10.2 The Generating Company shall submit information as part of annual review on actual performance to assess the performance vis-à-vis the targets approved by the Commission at the beginning of the Control Period. This shall include annual statements of its performance and accounts including latest available audited/actual accounts, norms achieved and the tariff worked out in accordance with these Regulations.

10.3 The Commission may also direct any modifications to the forecast of the Generating Company for the remainder of the Control Period, with detailed reasons for the same.

A11: TRUING UP FOR THE PERIOD UPTO THE COMMENCEMENT OF MYT ORDER

11.1 Performance review and adjustment of variations of the Generating Company for the year 2006-07 and period between 1st April 2007 and commencement of MYT tariff order shall be based on the actual/audited information and prudence checks by the Commission and shall be considered during the Control Period.

A12: MISCELLANEOUS

Issue of Orders and Practice Directions

12.1 Subject to the provision of the Act and these Regulations, the Commission may, from time to time, issue Orders and Practice directions in regard to the implementation of these Regulations and procedure to be followed on various matters, which the Commission has been empowered by these Regulations to direct, and matters incidental or ancillary thereto.

12.2 Notwithstanding anything contained in these Regulations, the Commission shall have the authority, either suo motu or on a petition filed by any interested or affected party, to determine the tariff of any Applicant.

Powers to remove difficulties

12.3 If any difficulty arises in giving effect to any of the provisions of these Regulations, the Commission may, by a general or special order, not being inconsistent with the provisions of these Regulations or the Act, ,do or undertake to do things or direct the Generating Company to do or undertake such things which appear to be necessary or expedient for the purpose of removing the difficulties..

Power of Relaxation

12.4 The Commission may in public interest and for reasons to be recorded in writing, relax any of the provision of these Regulations.

Interpretation

12.5 If a question arises relating to the interpretation of any provision of these Regulations, the decision of the Commission shall be final.

Saving of Inherent Powers of the Commission

12.6 Nothing contained in these Regulations shall limit or otherwise affect the inherent powers of the Commission from adopting a procedure, which is at variance with any of the provisions of these Regulations, if the Commission, in view of the special circumstances of the matter or class of matters and for reasons to be recorded in writing, deems it necessary or expedient to depart from the procedure specified in these Regulations.

Enquiry and Investigation

12.7 All enquiries, investigations and adjudications under these Regulations shall be done by the Commission through the proceedings in accordance with the provisions of the Conduct of Business Regulations.

Power to Amend

12.8 The Commission, for reasons to be recorded in writing, may at any time vary, alter or modify any of the provision of these Regulations by amendment.

Appendix 1: Depreciation Schedule

S. No	Asset Class	Useful Life (Years)	Rate (%)
1	Land owned under full title	Infinity	0
2	Land held under lease		
(A)	For investment in land	The period of lease or the period remaining unexpired on the Assignment of the lease	0
(B)	For cost of clearing site	The period of lease remaining unexpired at the date of clearing the site	0
3	Assets Purchased New		
(A)	Plant and machinery in generating stations including plant foundations		
(i)	Hydro-electric	35	2.57
(ii)	Steam-electric NHRS & Waste Heat Recovery Boilers / Plants	25	3.60
(iii)	Diesel electric & gas plant	15	6.00
(B)	Cooling towers and circulating water systems	25	3.60
(C)	Hydraulic works forming part of hydro-electric system including:		
(i)	Dams, spillways weirs, canals, reinforced concrete flumes & siphons	50	1.80
(ii)	Reinforced concrete pipelines and surge tanks, steel pipelines, sluice gates, steel surge (tanks) hydraulic control valves and other hydraulic works	35	2.57
(D)	Building & civil engineering works of a permanent character, not mentioned above:		
(i)	Offices & showrooms	50	1.80
(ii)	Containing thermo-electric generating plant	25	3.60
(iii)	Containing hydro-electric generating plant	35	2.57
(iv)	Temporary erection such as wooden structures	5	18.00
(v)	Roads other than kutcha roads	50	1.80
(vi)	Others	50	1.80
(E)	Transformers, transformer (kiosk) sub-station equipment & other fixed apparatus (including plant foundations)		
(i)	Transformers (including foundations) having a rating of 100 kilo volt amperes and over	25	3.60
(ii)	Others	25	3.60
(F)	Switchgear, including cable connections	25	3.60

S. No	Asset Class	Useful Life (Years)	Rate (%)
(G)	Lightning arrestors:		
(i)	Station type	25	3.60
(ii)	Pole type	15	6.00
(iii)	Synchronous condenser	35	2.57
(H)	Batteries	5	18.00
(I)	Underground cable including joint boxes and disconnected boxes	35	2.57
(J)	Cable duct system	50	1.80
(K)	Overhead lines including supports:		
(i)	Lines on fabricated steel operating at nominal voltages higher than 66 kV	35	2.57
(ii)	Lines on steel supports operating at nominal voltages higher than 13.2 kV but not exceeding 66 kV	25	3.60
(iii)	Lines on steel or reinforced concrete supports	25	3.60
(iv)	Lines on treated wood supports	25	3.60
(L)	Meters	15	6.00
(M)	Self propelled vehicles	5	18.00
(N)	Air conditioning plants:		
(i)	Static	15	6.00
(ii)	Portable	5	18.00
(O)			
(i)	Office furniture and fittings	15	6.00
(ii)	Office equipments	15	6.00
(iii)	Internal wirings including fittings and apparatus	15	6.00
(iv)	Street Light fittings	15	6.00
(P)	Apparatus let on hire:		
(i)	Other than motors	5	18.00
(ii)	Motors	15	6.00
(Q)	Communication equipment		
(i)	Radio and higher frequency carrier systems	15	6.00
(ii)	Telephone lines and telephones	15	6.00
(R)	Assets purchased in second hand and assets not otherwise provided for in the schedule	Such reasonable period as the Commission determines in each case having regard to the nature, age and conditions of assets at the time of its acquisition by the owner	