
Table of Contents

1. Background, Procedural History and Description of ARR Filing	1-3
1.1 About the Commission	1-3
1.1.1 Functions of the Commission	1-3
1.1.2 Issuance of Concept Paper on Tariff and Guidelines for Revenue and Tariff Filing	1-4
1.1.3 Regulations and Orders issued by the Commission	1-4
1.2 Background	1-6
1.2.1 Transfer Scheme	1-6
1.2.2 Indraprastha Power Generation Company Limited (IPGCL)	1-6
1.2.3 Enactment of Electricity Act, 2003	1-7
1.2.4 ARR and Tariff Determination for FY 2004-05	1-7
1.3 Procedural History	1-8
1.3.1 ARR & Tariff filing by the Companies for FY 2005-06	1-8
1.3.2 Public Notice and response from stakeholders	1-9
1.3.3 Public Hearing	1-9
1.3.4 Post admission interactions	1-10
1.4 Summary of the petition	1-10
1.5 Layout of this Order	1-11
2. On the Response from Stakeholders	2-1
2.1 Procedural Issues	2-1
2.1.1 Objections	2-1
2.1.2 Response of the Petitioner	2-2
2.2 Privatisation Policy and Reform Process	2-2
2.2.1 Objections	2-2
2.3 Transition Issues	2-2
2.3.1 Objections	2-2
2.4 Commission's views	2-3
2.4.1 Procedural Issues	2-4
2.4.2 Privatisation Policy and Reform Process	2-5
2.4.3 Transition Issues	2-5
2.5 Comments from HVPNL	2-5
2.5.1 Commission's View	2-6
3. Analysis of ARR	3-1
3.1 Introduction	3-1
3.2 Generation	3-1
3.3 Generation from IP Power Station (IP)	3-2
3.3.1 Petitioner's Submission	3-2
3.3.2 Commission's Analysis	3-2
3.4 Auxiliary Consumption IP Power Station (IP)	3-2
3.4.1 Petitioner's Submission	3-2
3.4.2 Commission's Analysis	3-3
3.5 Net Generation from IP Power Station (IP)	3-3
3.6 Generation from Rajghat Thermal Power Station	3-3
3.6.1 Petitioner's Submission	3-3

3.6.2	Commission's Analysis	3-4
3.7	Auxiliary Consumption for Rajghat Thermal Power Station	3-4
3.7.1	Petitioner's Submission	3-4
3.7.2	Commission's Analysis	3-4
3.8	Net Generation from Rajghat Thermal Power Station	3-5
3.9	Generation from IP Gas Turbine Station	3-5
3.9.1	Petitioner's Submission	3-5
3.9.2	Commission's Analysis	3-5
3.10	Auxiliary Consumption for from IP Gas Turbine Station	3-5
3.10.1	Petitioner's Submission	3-5
3.10.2	Commission's Analysis	3-6
3.11	Net Generation from IP Gas Turbine Station	3-6
3.12	Total Generation by IPGCL	3-6
3.13	Fixed Costs	3-6
3.13.1	O&M Charges	3-7
3.13.2	Depreciation	3-9
3.13.3	Advance against Depreciation	3-11
3.13.4	Interest Charges	3-11
3.13.5	Return on Equity	3-13
3.13.6	Interest on Working Capital	3-13
3.13.7	Total Fixed Cost	3-15
3.14	Fuel Cost	3-16
Station Heat Rate for IP Power Station (IP)		3-16
3.14	Total Cost of fuel for IP Power Station (IP)	3-17
3.15	Station Heat Rate for Rajghat Power Station	3-18
3.15.1.2	Commission's Analysis	3-18
3.16	Total Cost of fuel for Rajghat Power Station	3-18
3.17	Station Heat Rate for IP Gas Turbine Station	3-20
3.17.2	Commission's Analysis	3-20
3.18	Total Cost of fuel for IP Gas Turbine Station	3-20
3.19	Other Issues	3-22
3.19.1	Voluntary Retirement Scheme (VRS)	3-22
3.19.2	Renovation & Modernisation	3-23
3.19.3	Expenses on ash evacuation/utilisation	3-24
4.	Generation Tariff Philosophy and Approved Tariffs	4-1
4.1.1	Fixed Component of Tariff	4-1
4.2	Variable Component	4-2
4.2.1	Incentives	4-2
4.3	Fuel Price Adjustment Formula	4-3
4.3.1	Petitioner's Submission	4-3
4.3.2	Commission's Response	4-3
4.4	Open Cycle Tariff	4-3
4.4.1	Commissioner's Response	4-3
4.5	Truing up for FY 2004-05	4-3
4.6	Approved Tariff for FY 2005-06	4-4

1. Background, Procedural History and Description of ARR Filing

1.1 About the Commission

The Delhi Electricity Regulatory Commission (hereinafter referred to as 'Commission') was constituted by the Government of National Capital Territory of Delhi (hereinafter referred to as 'Government') on March 3, 1999 and it became operational from December 10, 1999.

1.1.1 Functions of the Commission

Major functions assigned to the Commission under the Delhi Electricity Reform Act, 2000 (hereinafter referred to as 'DERA') are as follows:

- to determine the tariff for electricity, wholesale, bulk, grid or retail and for the use of the transmission facilities
- to regulate power purchase, transmission, distribution, sale and supply of electricity
- to promote competition, efficiency and economy in the activities of the electricity industry in the National Capital Territory of Delhi
- to aid and advise the Government on power policy
- to collect and publish data and forecasts
- to regulate the assets and properties so as to safeguard the public interest
- to issue licenses for transmission, bulk supply, distribution or supply of electricity
- to regulate the working of the licensees
- to adjudicate upon the disputes and differences between licensees

Major functions assigned to the Commission under the Electricity Act, 2003 (hereinafter referred to as 'EA 2003') are as follows:

- determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State;
- regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;
- facilitate intra-state transmission and wheeling of electricity;
- issue licences to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;

- promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licence;
- adjudicate upon the disputes between the licensees, and generating companies and to refer any dispute for arbitration;
- levy fee for the purposes of this Act;
- specify State Grid Code consistent with the Grid Code specified under clause (h) of sub-section (1) of section 79;
- specify or enforce standards with respect to quality, continuity and reliability of service by licensees;
- fix the trading margin in the intra-State trading of electricity, if considered, necessary; and
- discharge such other functions as may be assigned to it under this Act.

1.1.2 Issuance of Concept Paper on Tariff and Guidelines for Revenue and Tariff Filing

1.1.2.1 Concept Paper on Tariff

The Commission brought out a Concept Paper on Tariff in September 2000. The Concept Paper provided a historical background of the power sector in Delhi, brought out the salient features of the first tariff proposal of Delhi Vidyut Board (hereinafter referred to as 'DVB') and sought suggestions from various stakeholders on the conceptual issues on electricity tariff.

1.1.2.2 Guidelines for Revenue and Tariff Filing

The Commission specified the 'Guidelines for Revenue and Tariff Filing' for submission of their Annual Revenue Requirement and Tariff petitions by Delhi Vidyut Board in October 2000. It contained about 29 data forms with guidelines to get data from utilities.

1.1.3 Regulations and Orders issued by the Commission

In its journey from inception till date, the Commission has issued thirteen Tariff Orders and notified nine Regulations as given in Tables 1.1 and 1.2, respectively. Four regulations are in the process of being notified, as given in Table 1.3. The Orders were issued after following the due process and all stakeholders were given an opportunity to present their viewpoints.

Table 1.1: Tariff Orders issued by the Commission

S. No.	Name of the Order	Date of issue
1.	Order on Rationalization of Tariff for Delhi Vidyut Board (DVB)	16-1-2001
2.	Order on ARR for 2001-02 and Tariff Determination Principles for 2002-03 till 2005-06 for Delhi Vidyut Board	23-5-2001

3.	Order on Joint Petition for Determination BST and Opening Losses for DISCOMS	22-2-2002
4.	Order on ARR for July 2003 to March 2004 (9 months and Financial Year 2003-04) and determination of Retail supply tariffs for BSES – Yamuna Power Limited	26-06-2003
5.	Order on ARR for July 2003 to March 2004 (9 months and Financial Year 2003-04) and determination of Retail supply tariffs for BSES – Rajdhani Power Limited	26-06-2003
6.	Order on ARR for July 2003 to March 2004 (9 months and Financial Year 2003-04) and determination of Retail supply tariffs for North Delhi Power Limited	26-06-2003
7.	Order on ARR for July 2003 to March 2004 (9 months and Financial Year 2003-04) and determination of Bulk supply tariffs for Delhi TRANSCO Limited	26-06-2003
8.	Order on ARR for Financial Year 2004-05 and determination of Retail supply tariffs for BSES – Yamuna Power Limited	09-06-2004
9.	Order on ARR for Financial Year 2004-05 and determination of Retail supply tariffs for BSES – Rajdhani Power Limited	09-06-2004
10.	Order on ARR for Financial Year 2004-05 and determination of Retail supply tariffs for North Delhi Power Limited	09-06-2004
11.	Order on ARR for Financial Year 2004-05 and determination of Bulk supply tariffs for Delhi TRANSCO Limited	09-06-2004
12.	Order on ARR for Financial Year 2004-05 and determination of Generation tariffs for Indraprastha Power Generation Company Limited	09-06-2004
13.	Order on ARR for Financial Year 2004-05 and determination of Generation tariffs for Pragati Power Corporation Limited	09-06-2004

Table 1.2: Regulations notified by the Commission

S. No.	Title of Regulations
1.	Delhi Electricity Regulatory Commission Comprehensive (Conduct of Business) Regulations, 2001
2.	Delhi Electricity Regulatory Commission (Management and Development of Human Resources) Regulations, 2001
3.	Delhi Electricity Regulatory Commission (Appointment of Consultants) Regulations, 2001
4.	Delhi Electricity Regulatory Commission (Delegation of Financial Powers) Regulations, 2001
5.	Delhi Electricity Regulatory Commission (Grant of Consent for Captive Power Plants) Regulations, 2002 (Since Repealed)
6.	Delhi Electricity Regulatory Commission (Performance Standards – Metering & Billing) Regulations, 2002
7.	Delhi Electricity Regulatory Commission (Medical Attendance) Regulations, 2003
8.	Delhi Electricity Regulatory Commission (Redressal of Consumers' Grievances) Regulations, 2003
9.	Delhi Electricity Regulatory Commission (Guidelines for establishment of Forum for redressal of grievances of the consumer and Ombudsman) Regulations, 2003

Table 1.3: Regulations under process of notification

Sr. No.	Title of Regulations
1	Delhi Electricity Regulatory Commission (Procedure for filing appeal before the Appellate Tribunal) Regulations, 2005
2	Delhi Electricity Regulatory Commission (Treatment of Income from Other Business of Transmission Licensee and Distribution Licensee) Regulations, 2005
3	Delhi Electricity Regulatory Commission (Intra- State Trading) Regulations, 2005
4	Delhi Electricity Regulatory Commission (Terms and conditions for Open Access) Regulations, 2005

Further, in compliance to the provisions of Electricity Act, 2003, the Commission has issued the following Draft Regulations for public comments:

Table 1.4: Draft Regulations notified by the Commission

S.No.	Title of Regulation
1	Delhi Electricity Regulatory Commission (Metering and Billing) Regulations, 2004
2	Delhi Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2004
3	Delhi Electricity Regulatory Commission (State Advisory Committee) Regulations, 2005
4	Delhi Electricity Regulatory Commission (Levy and Collection of Fee and Charges by State Load Despatch Centre) Regulations, 2005
5	Delhi Electricity Regulatory Commission (Conduct of Business) Regulations, 2005

The Commission is actively considering the responses received from the public and will finalise the above Regulations in a short period.

1.2 Background

1.2.1 Transfer Scheme

Pursuant to the provisions of the Act, the Government notified the Delhi Electricity Reform (Transfer Scheme) Rules, 2001 (hereinafter referred to as 'Transfer Scheme') on November 20, 2001. The Transfer Scheme provided for unbundling of the functions of Delhi Vidyut Board (hereinafter referred to as "DVB") and the transfer of existing transmission assets of DVB to Delhi Transco Limited (formerly known as Delhi Power Supply Company Limited and hereinafter referred to as 'TRANSCO') and the existing distribution assets to three Distribution Companies (hereinafter collectively referred to as 'DISCOMs').

1.2.2 Indraprastha Power Generation Company Limited (IPGCL)

The Indraprastha Power Generation Company Limited (IPGCL) has 3 plants as detailed below:

- I.P. Station of total capacity of 247.5 MW with 3 units of 62.5 MW and one unit of 60 MW capacity using coal as fuel

- Rajghat Power House (R.P.H) with total capacity of 135 MW with two plants of 67.5 MW each using coal as fuel
- Gas Turbine Power Station (GTPS) with total capacity of 282 MW having 6 gas turbines of 30MW capacity each using CNG/LNG as fuel and 3 steam turbines of 34 MW capacity each.

1.2.3 Enactment of Electricity Act, 2003

The Electricity Act, 2003 (EA 2003), enacted in June 2003 repealed the Indian Electricity Act, 1910, the Electricity (Supply) Act, 1948 and the Electricity Regulatory Commissions Act, 1998. It provides for increased competition in the sector by facilitating open access (permission to use the existing power transfer facilities) for transmission and distribution, power trading, and also allows setting up of captive power plants without any restriction. Further Section 86 (1) (a) of the EA 2003 vests the responsibility of determination of tariff with the Commission – the relevant portion of this Section is as follows;

“ The State Commission shall discharge the following function namely –

(a) determine the tariff for generation, supply, transmission and wheeling of electricity, whole sale, bulk or retail, as the case may be within the state: ...”.

Procedure envisaged in the EA 2003 for Tariff Order

Section 64 of the EA 2003 specifies the procedure to be followed for issuance of a tariff order. Sub-sections (1) and (3) of this Section of EA 2003 state as follows:

Sub-section (1): *“An application for determination of tariff under section 62 shall be made by a generating company or licensee in such manner and accompanied by such fee, as may be determined by regulations”.*

Subsection (3): *“The Appropriate Commission, shall within one hundred and twenty days from receipt of application under sub-section (1) and after considering all suggestions and objections received from the public:*

(a) issue a tariff order accepting the application with such modifications or such conditions as may be specified in that order:

(b) reject the application for reasons to be recorded in writing if such application is not in accordance with the provisions of this Act and the rules and regulations made there under or the provisions of any other law for the time being in force:

Provided that an applicant shall be given a reasonable opportunity of being heard before rejecting his application.”

1.2.4 ARR and Tariff Determination for FY 2004-05

The TRANSCO, Indraprastha Power Generation Company Limited (IPGCL), Pragati Power Corporation Limited and three DISCOMs filed their ARR and Tariff Petitions for FY 2004-05 in

December 2003. The Commission had a series of discussions with TRANSCO, IPGCL, PPCL and the three DISCOMs wherein the Commission sought additional information, clarifications and justifications on various issues critical for admissibility of the Petitions. Subsequently, the Petitioners submitted the information and justifications. The Commission admitted the Petitions of TRANSCO, IPGCL, PPCL and DISCOMs for further processing on January 16, 2004.

The Commission brought out a Public Notice on January 17, 2004 indicating the salient features of the Petitions and invited responses from the consumers and other stakeholders on the Petitions. The Commission also brought out a public notice on February 14, 2004 and sought further suggestions/responses from the general public on the issues related to Tariff Rationalisation.

The Commission received a total of 78 responses from the various stakeholders. The Commission conducted the Public Hearings on April 7, 8 and 10, 2004 in five different sessions. Subsequently, the Commission held discussions with the Petitioners and obtained the details of actual expenses, revenue and losses for FY 2003-04.

The Commission, based on the detailed scrutiny of the Petitions and additional information/clarifications submitted by the Petitioners and after following the due public process, issued its Orders on the ARR and Tariff Petitions of TRANSCO, IPGCL, PPCL and the DISCOMs for FY 2004-05 on June 09, 2004.

1.3 Procedural History

1.3.1 ARR & Tariff filing by the Companies for FY 2005-06

1.3.1.1 Filing of petitions

The TRANSCO, IPGCL, and PPCL filed their Petitions for approval of ARR and determination of Tariffs for FY 2005-06, on November 30, 2004. The BSES Rajdhani Power Limited (BRPL) and BSES Yamuna Power Limited (BYPL) filed their ARR and Tariff Petition for determination of Retail Supply Tariff for (RST) FY 2005-06 on December 29, 2004. Thereafter, the North Delhi Power Limited (NDPL) filed its petition for ARR approval and determination of RST for FY 2005-06 on December 31, 2004.

The Policy Directions envisage uniform retail tariffs across the DISCOMs and tariffs have to be determined so as to allow the DISCOMs to recover all permissible expenses and return for the year. This implies that the BST for the DISCOMs for a period cannot be determined in isolation and one would have to take cognisance of the ARRs of the DISCOMs for further processing.

The Petitioner, in its Petition, has projected a net generation of 3380 MU with a total fixed cost of Rs. 262 Crore and total variable cost of Rs. 637 Crore for FY 2005-06.

1.3.1.2 Interactions with the Petitioner

The submissions of the filings were followed by a series of interactions, both written and oral, wherein the Commission sought additional information/clarification and justifications on various

issues, critical for admissibility of the petitions. The Petitioner submitted its response on the issues raised through separate submissions on February 2 and February 18, 2005.

The Distribution Companies, the TRANSCO, and the PPCL also provided similar information and clarifications on the issues raised in respect of their filings. The Commission admitted the Petitions for further processing on March 10, 2005.

1.3.2 Public Notice and response from stakeholders

1.3.2.1 Publicity given to the Proposal

The Petitioners brought out a Public Notice on March 14, 2005 indicating the salient features of their own Petition, and inviting responses from the consumers and other stakeholders on their own Petition. The Commission also brought out a Public Notice on March 24, 2005 indicating the salient features of all the Petitions for FY 2005-06, inviting responses from the consumers and other stakeholders on the Petitions submitted by NDPL, BRPL, BYPL, TRANSCO, IPGCL and PPCL, in accordance with the provisions of the Delhi Electricity Regulatory Commission Comprehensive (Conduct of Business) Regulations, 2001. The Public Notice was published in several dailies such as:

- The Hindustan Times and Indian Express in English;
- Dainik Jagran in Hindi; and
- Daily Milap in Urdu.

A copy of the Public Notice in English, Hindi and Urdu is attached as Annexure 2a-1, 2a-2 and 2a-3 respectively.

A detailed copy of the Petition of each Petitioner was also made available for purchase from the respective head-office of the Companies on any working day from March 14, 2005 onwards, between 11 a.m. and 4 p.m. on payment of Rs. 100/-. The Notice specified the deadline of April 14, 2005 for the receipt of responses/objections from the stakeholders which was subsequently extended till April 30, 2005. The complete copy of the Petitions was also put up on the website of the Commission, as well as that of the Petitioners.

1.3.3 Public Hearing

The Commission received 98 objections in all. Some objections were received after the deadline for submission of the responses. A detailed list of the respondents is attached with this Order as Annexure 3a. The Commission forwarded the objections to the Petitioner for submission of comments to the Commission with a copy to the Respondent. The Petitioner filed its responses to the comments/objections of the stakeholders by May 18, 2005. The Commission conducted the Public Hearings on May 24, 25 and 26, 2005. All the stakeholders who had submitted responses/objections on the ARR Petitions were invited to express their views in the matter. A list of the Respondents who participated in the Public Hearing process is attached with this Order as Annexure 3b. The entire proceeding was split across four different sessions catering to distinct groups of stakeholders as given in Table 1.5.

Table 1.5: Dates of Public Hearing

Date	Category
May 24, 2005 (Two Sessions)	Domestic, Co-operative Societies, and Commercial
May 25, 2005 (One Sessions)	Industrial Consumers and Associations
May 26, 2005 (One Session)	Government Departments, Utilities and NGOs

1.3.4 Post admission interactions

1.3.4.1 Discussions during technical sessions and presentation by the Petitioner

After admission of the ARR Petition, the Commission held further technical sessions with the concerned staff of the Petitioner to seek additional information and clarifications. The Commission held a meeting on May 12, 2005 and sought further details on the fire incident at the Gas Turbine Station, depreciation schedule, loan repayment, purpose of new loans, Return on Equity, working capital, and allocation of head office expenses.

1.3.4.2 Petitioner's responses to queries raised by the Commission

The Commission also sent queries to the Petitioner from time to time to ascertain more details. The Petitioner responded with its submissions on April 8, May 3, May 18, and June 1, 2005. The information submitted by the Petitioner in these submissions pertained to calorific value of gas, O&M of generating stations, water charges, use of APM, PMT and R-LNG, heat rate, impact of VAT and service tax, etc. The Petitioner also submitted the Provisional Annual Accounts for FY 2004-05 on May 3, 2005. The Petitioner made another submission on June 1, 2005 in respect of the proposed hike in gas prices by the Govt. of India (GoI) and the generation target fixed by the Central Electricity Authority (CEA) for the Rajghat Power House.

1.4 Summary of the petition

A snapshot of the ARR and Tariff Petition submitted by the Petitioner is provided in the Table 1.6.

Table 1.6: Summary of ARR of the Petitioner for FY 2005-06

Particulars	Units	IP Station	R.P.H	G.T.P.S.	Total
Gross Generation	MU	1000	910	1750	3660
Net Generation	MU	875	807	1698	3380
Total Fixed Cost	Rs. Crore	93	71	98	262
Total Variable Cost	Rs. Crore	191	157	290	637
Total Cost	Rs. Crore	280	227	388	899
Variable Cost per Unit	Rs/kWh	2.19	1.94	1.71	1.88
Total Cost per Unit	Rs/kWh	2.99	3.10	2.28	2.66

1.5 Layout of this Order

This Order is organised into 4 Sections. While the current Section gives the information about the Commission, the historical background and summary of the Petition, the second Section gives a detailed account of responses from stakeholders, Petitioner's comments and Commission's views on the responses. Section 3 discusses the Annual Revenue Requirement while Section 4 focuses on the Generation Tariff Philosophy and Approved Tariff.

2. On the Response from Stakeholders

These objections/responses mainly relate to Procedural issues, Privatisation Policy and Reform Process, and Transition issues. From the responses received from various stakeholders, the Commission has noted that no specific issue has been raised with respect to the expenses and tariff of IPGCL.

2.1 Procedural Issues

2.1.1 Objections

Joint Committee of Residents Welfare Associations of Pitampura has objected to the procedure of inviting responses from the public. The objector submitted that the public notice published specifies that the response from consumers and stakeholders must be on affidavit, in triplicate and either in person or by post and email responses are not permitted. The Association commented that the practice adopted this year is a departure from past practice and wanted to know the purpose of affidavit and also why three copies are required. The Association mentioned that the procedure adopted this year creates an impression that DERC is not really interested in receiving responses but is putting the public notice only to meet statutory requirements.

Jhilmil DDA Flats Residents Welfare Association has suggested that the Commission should appoint an independent consultant in association with a NGO on behalf of consumers at large to analyse Tariff Petitions and represent viewpoint of consumers during the process of approval of ARR and determination of tariff for FY 2005-06.

Mr. N. Ahuja has submitted for the Commission's consideration that a brief summary of ARR and Tariff Petition be made available by the Commission in a manner which can be understood by a common man to solicit quality inputs from consumers.

The Peoples' Power Network comprising of World Wide Fund for Nature – India, Consumer Coordination Council and Parivartan has suggested that the Commission should conduct separate proceedings on the capital expenditure plans of the companies and in these proceedings, the Companies should be required to present their long term capital expenditure plans with a clear statement of objectives. It has also made the following submissions in respect of improvements or changes to the process:

- All calculation and spreadsheets of the Commission should be made public and available in electronic form.
- Periodic and public review of compliance with directions of the Commission on a quarterly basis

2.1.2 Response of the Petitioner

In respect of separate proceedings on capital expenditure plans and placing long term expenditure plans with a clear statement of objectives, the Petitioner has submitted that it has already submitted the detailed project reports on the proposed Renovation and Modernisation Schemes to the Commission for necessary consideration. It has further submitted that the capital expenditure already incurred and proposed to be incurred are mainly in relation to further reduction in pollution levels from the Plants and for increasing efficiency and reliability of power supply, by replacing the ageing components. It has added that it will abide by any such initiative taken by the Commission in this direction.

2.2 Privatisation Policy and Reform Process

2.2.1 Objections

M/s Praja has raised concerns with respect to repayment of Govt. Support after the transition period. The objector submitted that the transition period is going to end in two years and if the DISCOMs are free to buy power from other sources, how the TRANSCO will repay the loan of Rs 3450 Crore.

Senior Citizens' Forum has suggested a mid term review of the Policy Directions to effect the learnings from the experience of privatisation and protect the interest of consumers.

Shri. Ashok Rao has suggested that the Commission spell out the policy with regard to repayment of Govt. Support loan by DTL and its implications on consumer tariffs, as well as a policy with regard to the implications for consumer tariffs and reliability of supply after the end of the transition period.

Based on the Commission's viewpoint in the Order dated February 22, 2002 which was expressed as "... At this point, the Commission opines that any shortfall in revenue gap, if any, of TRANSCO during the term of five years over and above Rs. 2,600 Crore would have to be bridged in the form of Government support, sector efficiency improvements, any other suitable mechanism or a combination of all of the above, to be decided by the Commission at the appropriate stage.", Chetna has requested the GNCTD to clarify the basis and assumptions for initial level of subsidy support of Rs. 2,600 Crore, increase in subsidy support to Rs. 3,450 Crore and whether GNCTD would support any further shortfall in revenue gap alongwith the quantum of additional support, if any, and its source of funding.

2.3 Transition Issues

2.3.1 Objections

The Peoples' Power Network and the Consumer Coordination Council has expressed concern over the tariff structure in post-transition period including issues like whether the GoNCTD will provide additional support and how further loss reduction will be achieved. It has also requested the Commission to describe how the transition from uniform tariffs to company-specific tariff

structure will be achieved once the transition period ends. It has also expressed concern over whether the DISCOMs will be free to buy power from any source after the transition period and in that event how will the loan of Rs. 3,450 crores be paid back by DTL.

2.4 Commission's views

The Commission has taken a note of the various comments/objections made in response to the Petitions filed by the Utilities and appreciates the keen participation in the process by the various stakeholders to provide vital feedback to the Commission on various issues.

For instilling confidence in the Utilities as well as to bring about a greater understanding and appreciation of the complexity of the issues involved, the Commission ever since its institution, has made conscious and continuous efforts to bring about transparency in the tariff setting process.

The Commission is of the opinion that for any meaningful regulation of the Utilities, an effective platform for exchange of operational and performance related information is required throughout the year, rather than having limited interactions during year-end submission of filings. Accordingly, the Commission required the Utilities to spell out detailed information/reasons for further improvement over the existing situation. The Commission also undertook visits for actual verification of the physical progress of various capital expenditure undertaken by the Utilities. The shortcomings in their information systems and processes were conveyed to the Utilities while eliciting improved performance. Information availability being the key to quicker processing of the Petitions, the Commission is in the process of developing and installing a Regulatory Information Management System (RIMS). The Commission has appointed a Consultant for developing the RIMS and the RIMS is likely to be operational by October 2005. The RIMS aims at building an MIS with pre-defined information formats, accessible to the Utilities through the Internet for periodic updates. RIMS is expected to help the Utilities and the Commission to come to a common understanding about the level, form and diversity of information to be made available for processing of the ARR Petitions among others. It would also ease the pressure placed on the Utilities in the existing set-up to provide the desired information within a limited period for year-end review of operations.

The Commission recognises the impact of the Petitions filed by the Utilities and the importance of the various issues raised during the public hearings and the comments made by the stakeholders. The Commission also appreciates the efforts of the stakeholders in bringing such issues to the notice of the Commission. However, the Commission would like to point out that several issues and comments, though important, are not relevant to the determination of the ARR and Tariff of the Utilities. Therefore, the Commission, while taking note of these issues, is not addressing such issues in this Order. The Commission will deal with such issues separately under the appropriate Forum constituted for this purpose or during the amendment of the Regulations issued by the Commission. The stakeholders may also approach the Commission separately on such issues.

With this background, the Commission now proceeds to provide its views on the various issues raised by the respondents for determination of ARR and Tariff of the Utilities.

2.4.1 Procedural Issues

At the outset, the Commission would like to clarify the procedure adopted by the Commission in inviting responses from the Stakeholders on the Petitions filed by the Utilities.

While processing the ARR and Tariff Petitions of the Utilities, the Commission in accordance with the provisions of the Electricity Act, 2003 directed the Utilities to publish the salient features of their Petition in leading newspapers. In compliance to the Commission's directive, the Utilities published the salient features of the respective Petitions. Subsequently, the Commission published the public notice summarising the ARR and Tariff Petitions of all the Utilities in one notice for inviting response from consumers and stakeholders. The Public notice published by the Commission specifies that the response from consumers and stakeholders must be on affidavit, in triplicate and either in person or by post and that email responses are not permitted. This practice is in line with the Delhi Electricity Regulatory Commission Comprehensive (Conduct of Business) Regulations, 2001. The Commission has not deviated from the standard practice followed by the Commission in inviting responses from the stakeholders and considering the same for meaningful interaction.

The Commission would also like to point out that submission of responses by stakeholders on affidavit is a legal requirement. However, the Commission has considered large number of responses and objections which have not been sworn on an affidavit.

As regards the availability of only a brief summary of ARR and Tariff Petition by the Commission, the Commission would like to bring to the notice of the stakeholders that this practice is followed by the Commission and the Commission publishes the salient features of all the Petitions in one public notice for inviting responses. This is also in view of the fact that the advertising costs are also high. The ARR Petitions are posted on the website of the Commission as well. Further, the Orders issued by the Commission on the ARR and Tariff Petition of the Utilities are reasoned and all necessary explanation are given therein. For a better understanding of the ARR and Tariff Petitions, the Commission urges consumers to refer to the Orders on ARR and Tariff Petition issued by the Commission during the previous years. The Commission would also like to highlight that it is keen to encourage greater participation by various consumer groups and that the Commission will take appropriate steps for enhancing consumer awareness to enable consumers to better appreciate the Petitions filed by the Utilities.

As regard separate proceedings on capital expenditure plans of the Utilities, the Commission would like to bring to the notice of the stakeholders that in the Orders on ARR and Tariff Petitions of the Utilities for FY 2004-05, the Commission had directed the DISCOMs and TRANSCO to submit the complete Detail Project Report (DPR) along with cost-benefit analysis for schemes costing more than Rs 2 Crore for obtaining the scheme-wise investment approval from the Commission as per

the terms and conditions of the License for Distribution and Retail Supply of Electricity within a month from the date of the issue of this Order. The Commission has also directed the Petitioner to submit the schemes for approval of the Commission for FY 2005-06, by September 2004. Therefore, the Commission has already instituted a separate process for the approval of the capital expenditure plans of the Companies. The Commission, after detailed scrutiny of each capital scheme, accords its approval to the capital expenditure schemes proposed by the Companies. The Commission does not feel the necessity to conduct separate public proceedings for approval of capital expenditure plan of the Utilities as this is work is a continuous process spread over a period of few months.

In respect of making available the calculation and spreadsheets of the Commission, the Commission opines that detailed speaking Orders are issued by the Commission in respect of the ARR and Tariff Petitions filed by the Utilities covering various items which should solve the purpose of various stakeholders.

2.4.2 Privatisation Policy and Reform Process

The Policy formulated and Directions issued by the Government in exercise of its powers under section 12 of the Delhi Electricity Reforms Act, 2000 are binding on the Commission. The Commission, therefore, does not have any further views in the matter. Furthermore, this aspect has been discussed and addressed in the Commission's Order on Bulk Supply Tariff and opening level of AT&C losses issued on February 22, 2002.

Further, the Commission suggests that the respondents may approach the appropriate agencies for seeking clarifications.

2.4.3 Transition Issues

The Commission would like to inform the respondents that the issues raised herein are not related to the ARR and Tariff Petition of the Utilities for FY 2005-06. The Commission will deal with the issue of tariff structure in post transition period at the appropriate time.

2.5 Comments from HVPNL

The Commission on receipt of the petition from IPGCL considered inviting comments from HVPNL, as they were sharing the generation from IPGCL.

The HVPNL, during public hearing did not offer any comments. However, later, by a letter dated 23.6.2005, HVPNL made certain suggestions/objections on the petition of IPGCL.

In their comments, it is submitted that HVPNL shares 1/3rd of the power generated by IPGCL and they would like to associate IPGCL and CEA in the exercise of assessing the O&M Expenses and Heat Rate of IP Station. It is further added that HVPNL may be in a position for accepting an option

for acquiring the full generation from the IP Station, in the event that the DTL surrenders its share. It is also submitted that HVPNL would like to work out a permanent arrangement with IPGCL for sorting out various outstanding issues.

2.5.1 Commission's View

Since HVPNL had not offered any comments at the time of public hearing, the Petitioner has not made any replies.

The suggestions made by HVPNL were received almost one month after the public hearing was held. Although the comments were received very late, the Commission after due deliberation and in the public interest has considered the views offered by HVPNL.

At the very outset it is clarified that this Commission has taken this exercise to determine the cost of power purchase of Delhi Transco for its share of power generated by IPGCL. It is not the intention of this Commission to determine, by any manner, the cost of power for HVPNL that it shares from the IP Station.

The Commission has ensured transparency in its exercise of processing this petition of IPGCL. In the larger interest of the electricity sector and public of NCT of Delhi, the Commission has considered determining the cost of power, which has been kept exclusively for DTL. This has been done to fortify the foundations of the power sector in the National Capital Territory of Delhi. In this exercise, due diligence has been observed and established principles have been followed while determining the power purchase cost of the Delhi Transco Ltd.

The Commission further observes that Haryana Electricity Regulatory Commission, in its tariff order for the Financial Year 2005-06, has approved power purchase cost for HVPNL from IPGCL @ Rs 2.28/kwh for it shares from IP Station.

As regards settling of disputes between the two parties, viz., IPGCL and HVPNL, by mutual consultation, they are at liberty to settle the issues based on their initial understanding/ agreements/ MoU entered into at the time of establishing of this power station. In case HVPNL wishes to purchase excess power from DTL, they may approach DTL for the same.

3. Analysis of ARR

3.1 Introduction

The Petitioner has submitted the ARR and Tariff Petition for FY 2005-06 on November 30, 2004. The Petitioner in its filing stated that the previous Tariff Orders have not been adequate to meet its Annual Revenue Requirement and has pleaded with the Commission to permit appropriate tariff revision in the ensuing year within the overall tariff framework.

While analysing the Petition, the Commission, based on the submission made by the Petitioner asked for further details and supporting documents, which was submitted by the Petitioner. The Commission considered various submissions made by the Petitioner over the course of ARR and tariff determination process and carefully analysed the different heads of expenditure to project the realistic level of allowable expenditure during FY 2005-06. During the ARR and Tariff determination process for FY 2005-06, the Commission also obtained the details of actual operational parameters, expenses and revenue in FY 2004-05 for truing up of various expense elements. Based on these submissions, the Commission has finalised the ARR for FY 2004-05 and FY 2005-06.

3.2 Generation

IPGCL has three thermal power stations viz., Indraprastha Thermal Power Station (247.5 MW), Rajghat Thermal Power House (135 MW) and Indraprastha Gas Turbine power station (282 MW). The details of each of these stations are given below in Tables 3.1, 3.2 and 3.3.

Table:3.1 I.P. Station of total capacity of 247.5 MW with 3 units of 62.5 MW and one unit of 60 MW capacity using coal as fuel

Details	Unit –1	Unit –2	Unit –3	Unit-4	Unit-5
Capacity (MW)	Unit Decommissioned	62.5	62.5	62.5	60
Date of Commercial Operation		1.1.1968	1.3.1968	30.4.1968	1.1.1974
Fuel Used		Pulverised Coal			

Table:3.2 Rajghat Power Station with total capacity of 135 MW with two plants of 67.5 MW each using coal as fuel

Details	Unit –1	Unit –2
Capacity (MW)	67.5	67.5
Date of Stabilisation	May 1990	January 1990
Fuel Used	Coal	Coal

Table:3.3 Gas Turbine Power Station with total capacity of 282 MW having 6 gas turbines of 30MW capacity each using CNG/LNG as fuel and 3 steam turbines of 34 MW capacity each

Details	GT 1	GT 2	GT 3	GT 4	GT 5	GT 6	STG 1	STG 2	STG 3
Capacity (MW)	30	30	30	30	30	30	34	34	34
Date of Commercial Operation	17.6.86	20.6.86	11.8.86	3.9.86	11.11.86	20.11.86	25.4.96	12.8.97	27.12.96
Fuel Used	Gas	Gas	Gas	Gas	Gas	Gas	Waste Heat	Waste Heat	Waste Heat

3.3 Generation from IP Power Station (IP)

3.3.1 Petitioner's Submission

The Petitioner has submitted that in pursuance of understanding/agreement of earlier successive entities i.e. DESU and DVB with the Government of Haryana at the time of installation of units 2, 3, and 4 of the I.P Station, the Petitioner is transferring 1/3rd of the power generated from these units to Haryana.

The Petitioner in its ARR has submitted that the plant has generated 480 MU during FY 2004-05 till September and is expected to generate 800 MU over the full year with a PLF of 37%. For FY 2005-06 the Petitioner has proposed the generation to be at the same level as per the target fixed by CEA.

3.3.2 Commission's Analysis

During the technical discussion with the Petitioner, the Commission directed the Petitioner to submit the actual data for FY 2004-05. The Petitioner submitted the actual data on May 3 and May 18, 2005. Based on the actual generation details submitted by the Petitioner, the Commission has accepted the actual gross generation of 920 MU for FY 2004-05. For FY 2005-06, the Commission has considered gross generation of 1000 MU in accordance with the generation target prescribed by the CEA. The generation details submitted by the Petitioner and approved by the Commission are given in Table 3.4 below.

Table:3.4 Generation

Description	FY 2004-05			FY 2005-06	
	Order	Petition	Commission	Petition	Commission
Availability (MW)	247.5	247.5	247.5	247.5	247.5
PLF	36.90%	36.90%	42.40%	46.10%	46.10%
Gross Generation (MU)	800	800	920	1000	1000

3.4 Auxiliary Consumption IP Power Station (IP)

3.4.1 Petitioner's Submission

The Petitioner has estimated the Auxiliary Consumption for FY 2004-05 at 12.50% on the basis of the actual Auxiliary Consumption till September 2004. The Petitioner has also considered the

auxiliary consumption for FY 2005-06 at 12.50%. The Petitioner has submitted that generation activities were not given due importance in the past as the emphasis used to be on the distribution system. It has therefore requested the Commission to allow some breathing period for improving the Auxiliary Consumption of plants. It has highlighted that necessary R&M activities are proposed to be undertaken in the forthcoming years.

3.4.2 Commission's Analysis

During the technical validation sessions held with the Petitioner, during the ARR and Tariff process for 2004-05, the Petitioner had agreed to the Auxiliary Consumption levels approved by the Commission in the Order dated June 9, 2004. However the actual Auxiliary Power Consumption in 2004-05, as submitted by IPGCL is 12.42 %.

The Commission feels that with increase in actual operating PLF of 42.40 % in 2004-05 to the targeted PLF of 46.10 % for FY 2005-06, the Auxiliary Power Consumption should reduce. Accordingly, the Commission maintains the Auxiliary Consumption at the same level as that approved in the previous Order dated June 9, 2004 viz.11.64% for both FY 2004-05 and FY 2005-06.

Table: 3.5 Auxiliary Consumption

Description	FY 2004-05			FY 2005-06	
	Order	Petition	Commission	Petition	Commission
Auxiliary Consumption	11.64%	12.50%	11.64%	12.50%	11.64%

3.5 Net Generation from IP Power Station (IP)

The Commission has worked out the net generation on the basis of the gross generation and the auxiliary consumption allowed in the above sections. The net generation as submitted by the Petitioner and as estimated by the Commission is given in Table 3.6 below;

Table:3.6 Net Generation

Description	FY 2004-05			FY 2005-06	
	Order	Petition	Commission	Petition	Commission
Gross Generation (MU)	800	800	920	1000	1000
Auxiliary Consumption	11.64%	12.50	11.64%	12.50%	11.64%
Net Generation (MU)	707	700	813	875	884

3.6 Generation from Rajghat Thermal Power Station

3.6.1 Petitioner's Submission

The Petitioner in its ARR has submitted that the plant has generated 392 MU during FY 2004-05 till September and is expected to generate 780 MU by the end of the year with a PLF of 66%. For FY 2005-06, the Petitioner has proposed an increase in generation to 910 MU as per the target fixed by CEA with a PLF of 76.95%. Subsequently, the Petitioner submitted the actual generation

of the plant for FY 2004-05 as 697 MU resulting in a PLF of 58.93%. The petitioner further states that for FY 2005-06 it will not be able to achieve the target of 970 MU (corresponding to PLF of 82.02 %) set by the CEA, and has requested the CEA for the revised target of 870 MU.

3.6.2 Commission's Analysis

The Commission has considered the actual gross generation of 697 MU for FY 2004-05. For FY 2005-06, the Commission has considered the gross generation as per the revised generation target of 870 MU as estimated by IPGCL. The generation details submitted by the Petitioner and that allowed by the Commission are given in Table 3.7 below.

Table:3.7 Generation

Description	FY 2004-05			FY 2005-06	
	IPGCL Order for FY 2004-05	Petition	Commission	Petition	Commission
Availability (MW)	135	135	135	135	135
PLF	71.88%	66%	59%	76.95%	73.56%
Gross Generation (MU)	850	780	697	910	870

3.7 Auxiliary Consumption for Rajghat Thermal Power Station

3.7.1 Petitioner's Submission

The petitioner has submitted that based on actual data for the period April – September 2004 it is expected that the auxiliary consumption for FY 2004-05 will be at 12.68%. Further the petitioner states that for FY 2005-06, it has considered the auxiliary consumption at the same levels i.e. 12.68%. However as per the further data submitted by the petitioner in May, 2005 it has stated that the actual auxiliary consumption for FY 2004-05 has increased to 13.00%.

3.7.2 Commission's Analysis

During the ARR and Tariff determination process for FY 2004-05, the Petitioner had agreed to achieve the auxiliary consumption levels approved by the Commission in their previous Order. Therefore, the Commission maintains the auxiliary consumption at the same level as earlier Order, viz. 11.28% for both FY 2004-05 and FY 2005-06. The details of the auxiliary consumption as per the submission of the Petitioner and allowed by the Commission is given in Table 3.8 below;

Table:3.8 Auxiliary Consumption in %

Description	FY 2004-05			FY 2005-06	
	IPGCL Order for FY 2004-05	Petition	Commission	Petition	Commission
Auxiliary Consumption	11.28%	12.68%	11.28%	12.68%	11.28%

3.8 Net Generation from Rajghat Thermal Power Station

The Commission has worked out the net generation based on the above gross generation and the Auxiliary Consumption allowed as discussed in the sections above. The net generation as submitted by the Petitioner and as estimated by the Commission is given in Table 3.9 below;

Table: 3.9 Net Generation

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Gross Generation (MU)	850	780	697	910	870
Auxiliary Consumption	11.28%	12.68%	11.28%	12.68%	11.28%
Net Generation (MU)	754	689	619	807	772

3.9 Generation from IP Gas Turbine Station

3.9.1 Petitioner's Submission

The Petitioner in its ARR has submitted that the plant has generated 771 MU during FY 2004-05 till September and is expected to generate 1500 MU by the end of the year with a PLF of 60.72%. For the FY 2005-06 the Petitioner has proposed a generation of 1750 MU as per the target fixed by CEA. Further, vide a separate Petition dated May 3, 2005, the Petitioner submitted the actual generation of the plant for FY 2004-05 as 1539.54 MU resulting in a PLF of 62.32%.

3.9.2 Commission's Analysis

The Commission has considered the actual generation of 1539.54 MU for FY 2004-05. For FY 2005-06, the Commission has considered the gross generation as per the generation target of 1650 MU as prescribed by Central Electricity Authority (CEA). The generation details submitted by the Petitioner and that allowed by the Commission are given in Table 3.10

Table:3.10 Generation

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Availability (MW)	282	282	282	282	282
PLF	48.58%	60.72%	62.32%	70.84%	66.79%
Gross Generation (MU)	1,200	1500	1539.54	1750	1650

3.10 Auxiliary Consumption for from IP Gas Turbine Station

3.10.1 Petitioner's Submission

The Petitioner has estimated the actual Auxiliary Consumption for FY 2004-05 till September at 3.00% and has considered the Auxiliary Consumption of 3% for both FY 2004-05 and FY 2005-06. The petitioner in its further submissions stated that the actual auxiliary consumption for FY 2004-05 has been 2.39%.

3.10.2 Commission's Analysis

During FY 2004-05, the Petitioner has achieved a better Auxiliary Consumption level of 2.39% of gross generation as against 3% estimated in the ARR submission. However, the Commission has allowed auxiliary consumption at 3% on normative basis for FY 2004-05 and 2005-06. The Auxiliary Consumption details submitted by the Petitioner and that allowed by the Commission are given in Table 3.11

Table:3.11 Auxiliary Consumption in %

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Auxiliary Consumption	2.19%	3%	3 %	3%	3 %

3.11 Net Generation from IP Gas Turbine Station

The Commission has worked out the net generation based on the above gross generation and the Auxiliary Consumption allowed as discussed in the sections above. The net generation details submitted by the Petitioner and that allowed by the Commission are given in Table 3.12 below.

Table: 3.12 Net Generation

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Gross Generation (MU)	1,200	1500	1539.54	1750	1650
Auxiliary Consumption	2.19%	3%	3 %	3%	3%
Net Generation (MU)	1,174	1455	1493	1698	1601

3.12 Total Generation by IPGCL

Based on the above analysis the total Gross Generation and net generation for the Company is as given in the Table 3.13 below;

Table:3.13 Total Generation for company

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Gross Generation (MU)	2850	3080	3157	3660	3520
Net Generation (MU)	2635	2844	2926	3380	3257

3.13 Fixed Costs

The Commission has examined in detail all the components of the Fixed Cost of IPGCL. The fixed cost of IPGCL includes the following elements:

- O&M Charges
- Depreciation
- Advance against Depreciation

- Interest Charges
- Return on Equity
- Interest on Working Capital
- Income Tax
- Fixed Fuel Costs

Further, the Petitioner has apportioned the Fixed Costs to the three stations. In the last Tariff Orders issued by the Commission the fixed costs of the company as a whole was determined by the Commission. However in the current Order the Commission has determined the fixed costs on the basis of the individual plants. Further the recovery of the fixed costs shall also be guided by the availability of the plant during the year as discussed in Section 4.

3.13.1 O&M Charges

3.13.1.1 Petitioner's Submission

3.13.1.2 O&M charges for IP Power Station (IP)

The Petitioner has submitted the actual O&M expenses for April to September 2004, estimates for FY 2004-05 and projections for FY 2005-06 in its ARR filing. The O&M expenses for the FY 2004-05 was estimated at Rs. 61.84 Crore based on the actual expenses incurred till September 2004 and for the FY 2005-06, the expenses were projected at Rs. 74.36 Crore. The actual O&M expenses incurred as per the subsequent submission, by the Petitioner, for FY 2004-05 is Rs. 57.88 Crore.

3.13.1.3 O&M charges for Rajghat Power Station (RPH)

The Petitioner has submitted the actual O&M expenses for April to September 2004, estimates for FY 2004-05 and projections for FY 2005-06 in its ARR filing. The O&M expenses for FY 2004-05 was estimated at Rs. 34.71 Crore based on the actual expenses incurred till September 2004 and expenses for FY 2005-06 were projected at Rs. 38.60 Crore. The actual O&M expenses incurred as per the subsequent submission, by the Petitioner, for FY 2004-05 is Rs. 33.5 Crore.

3.13.1.4 O&M charges for Gas Turbine Power Station (GTPS)

The Petitioner has submitted the actual O&M expenses for April to September 2004, estimates for FY 2004-05 and projections for FY 2005-06 in its ARR filing. The O&M expenses for FY 2004-05 was estimated at Rs. 50.16 Crore based on the actual expenses incurred till September 2004. Expenses for FY 2005-06 were projected at Rs. 52.03 Crore. The actual O&M expenses incurred as per the subsequent submission, by the Petitioner, for FY 2004-05 is Rs. 47.7 Crore.

Further the Petitioner had submitted that the O&M expenses for all the three stations include corporate office expenses which consists of expenses of key executive functionaries including Managing Director, Director (T), Director (F), Company Secretary, etc. This also includes the activities of administration, finance, stores, medical department, civil, etc. The Petitioner also

submitted that these functions are common for both IPGCL and PPCL and as per the directive of Board of Directors of the company, these corporate office expenses shall be shared between the two companies equally. The corporate office expenses allocated to IPGCL has been further divided between the three power plants by the company in proportion to the actual generation in the three plants.

The Petitioner further submitted that the O&M expenses also include the cess payable to Delhi Pollution Control Committee (DPCC) on the water withdrawn from the Yamuna River. Further the amount being paid to Haryana Irrigation Department for maintenance of barrage maintained by them for IPGCL is also included in O&M expenses.

3.13.1.5 Commission's Analysis

The Commission in its previous Tariff Order allowed an O&M cost of Rs. 83.39 Crore for FY 2004-05, for the company as a whole, plus the carrying cost of Rs 8.57 Crore, based on the past year expenses by providing necessary escalations. However as per the Petitioner's submission the actual expenses incurred during FY 2004-05 is Rs. 146.71 Crore.

The Petitioner in the ARR and Tariff Petition for FY 2004-05 had projected O&M expenses for the year 2004-05 at Rs 139.83 Crore. As this estimate was substantially higher than the FY 2003-04 Commission's approval, the Commission held a meeting with senior management of IPGCL to have a detailed discussion on this issue and other issues of concern such as Higher Heat Rate and Auxiliary Consumption for some of the stations. During this discussion, the Commission directed the Petitioner to get CEA's recommendation on the O&M cost and R&M expenses. The CEA report has now been received in June, 2005 and it has recommended normative O&M expense of Rs 37.13 Crore, Rs 22.95 Crore, Rs 28.20 Crore for the IP Power Station, RPH Station, and GTPS respectively, total amounting to Rs 88.28 Crore for the FY 2004-05, with the proviso that "well audited actual expenses may form the basis for FY 2004-05 with yearly targeted improvement in future".

The Commission is of the opinion that the actual O&M expenses of GENCO are on higher side and if the actual O&M costs are considered for the purpose of ARR and Tariff Determination, the per unit generation cost will increase substantially. Considering all the relevant factors, the Commission allows an O&M cost of Rs. 88.28 Crore i.e. the normative O&M expenses as recommended by CEA for FY 2004-05. For FY 2005-06 the Commission allows an increase of 4% over FY 2004-05 approved amount of Rs. 88.28 Crore. For FY 2005-06, the station-wise O&M expenses approved by the Commission are Rs. 38.62 Crore, Rs. 23.87 Crore and Rs. 29.33 Crore for IP Power Station, RPH Station and GTPS respectively, total amounting to Rs 91.81 Crore. Table 3.14 presents the station-wise and for company as a whole, O&M charges for FY 2004-05 and FY 2005-06.

Table:3.14 O&M Charges in Rs. Crore

Description	FY 2004-05			FY 2005-06	
	IPGCL Tariff Order dated 09.06.04	Petition	Commission	Petition	Commission
For IP Station					
O&M Charges		61.84	37.13	74.36	38.62
For RPH					
O&M Charges		34.71	22.95	38.60	23.87
For GTPS					
O&M Charges		50.16	28.20	52.03	29.33
For Company (as a whole)					
O&M Charges	83.39	146.71	88.28	164.99	91.81

3.13.2 Depreciation**3.13.2.1 Petitioner's Submission**

The petitioner has submitted that as per Electricity Act, 2003 and after the repeal of the Electricity (Supply) Act, 1948, the Power Sector utilities are required to follow the Companies Act, 1956 in matters of depreciation. The Ministry of Power in its draft Tariff Policy has mentioned that for Tariff determination, depreciation rate would be as per Schedule XIV of the Companies Act, 1956. All power sector entities will be treated as 'continuous process plant' for the purpose of determination of depreciation rate. Accordingly the depreciation has been calculated as per the rates provided in the Companies Act, 1956. Further the depreciation on the additions during the financial year has been provided on the half of the amount assuming that the additions have been made evenly throughout the year.

3.13.2.2 Depreciation charges for IP Power Station (IP)

The Petitioner has submitted the Depreciation estimates for FY 2004-05 and projections for FY 2005-06 in its ARR filing. The Depreciation for FY 2004-05 was estimated at Rs. 2.51 Crore based on the actual expenses incurred till September 2004 and expenses for FY 2005-06 were projected at Rs. 3.45 Crore. The Depreciation as per the subsequent submission, by the Petitioner, for FY 2004-05 is Rs 2.51Crore.

3.13.2.3 Depreciation charges for Rajghat Power Station (RPH)

The Petitioner has submitted the Depreciation figure for FY 2004-05 and projections for FY 2005-06 duly taking into account anticipated additional capitalisation of Rs 18.30 Crore in its ARR filing. The Depreciation for FY 2004-05 was estimated at Rs. 10.92 Crore and expenses for FY 2005-06 were projected at Rs.11.40 Crore. The Depreciation as per the subsequent submission, by the Petitioner, for FY 2004-05 is Rs. 10.83 Crore.

3.13.2.4 Depreciation charges for Gas Turbine Power Station (GTPS)

The Petitioner has submitted the depreciation for FY 2004-05 and projections for FY 2005-06 duly taking into account anticipated additional capitalisation of Rs 21.00 Crore in its ARR filing. The Depreciation expenses for FY 2004-05 was estimated at Rs. 14.84 Crore and expenses for FY 2005-06 were projected at Rs. 15.39 Crore.

3.13.2.5 Commission's Analysis

The Commission has adequately discussed the issue of depreciation in its Tariff Order dated June 26, on TRANSCO's ARR Petition for FY 2002-03 and FY 2003-04 and the Order on Review Petition filed by the TRANSCO. The Commission's view on the concept of depreciation both from an accounting perspective and from a regulatory perspective from its Review Order dated November 25, 2003 has been reproduced below for reference.

"From an accounting perspective, Depreciation is a charge to the Profit and Loss account and represents a measure of the wearing out, consumption or other loss in value of an asset arising from use, efflux of time or obsolescence through technology and market changes. From a regulatory perspective, depreciation is a small amount of the original cost of the capital assets, built into the tariff computation every year with a view to providing the utility a source of funding to repay instalments of debt capital. As the asset is used over its operational life, Depreciation is proportionately charged over the useful life of the asset."

The Commission in its Order of June 26, 2003 and the subsequent Order of June 09 2004 has considered and applied the principle of depreciating the asset over its fair life such that 90% of the asset value is depreciated over the fair life of the asset. The average fair life of the gas turbines and steam turbine including other equipments has been considered as 15 years and 25 years respectively for the purpose of estimating the depreciation.

The Commission in the case of ARR and Tariff Petitions of PPCL, TRANSCO and DISCOMs for FY 2005-06 has decided to consider depreciation based on straight line method over the useful life of the asset at the rates prescribed in Appendix II to Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004 for various asset classes from FY 2005-06. On these principles, the Commission has calculated the weighted average depreciation rate, based on the asset break-up provided in the Provisional Accounts of FY 2004-05. However the same philosophy could not be adopted for IPGCL as station-wise asset break-up is not available, and in the absence of the same it is not possible to arrive at weighted average depreciation rate for each station. Therefore the Commission has considered an average depreciation rate of 4 % for coal based thermal stations and 5% for GT station, and approves the total depreciation amount for the company as a whole at Rs. 26.76 Crore for FY 2005-06. The plant-wise depreciation charges are Rs. 2.34 Crore for IP Station, Rs. 7.89 Crore for RPH and Rs. 16.53 for GTPS. The depreciation estimated by the Petitioner and as approved by the Commission for FY 2004-05 and FY 2005-06 is given in Table 3.15

Table:3.15 Depreciation in Rs. Crore

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Depreciation					
IP Station		2.51	1.20	3.45	2.34
RPH		10.92	8.28	11.40	7.89
GTPS		14.84	14.08	15.39	16.53
Company as a whole	24.32	28.27	23.56	30.24	26.76

3.13.3 Advance against Depreciation

3.13.3.1 Petitioner's Submission

The petitioner has submitted that the depreciation amount provided as per the Companies Act does not match the loan repayment amount for the year. To this effect the petitioner has requested the Commission to allow for an advance against depreciation of Rs. 1.15 Crore for FY 2004-05 for the IP Station. Advance against Depreciation has not been claimed for RPH & GTPS.

3.13.3.2 Commission's Analysis

The Commission is of the opinion that advance against depreciation could be provided if depreciation for the year is less than the loan repayment for the year, and the cumulative depreciation upto the year is less than the cumulative repayment upto that year. The Commission has approved depreciation amount to the tune of Rs. 1.20 Crore for IP Station for FY 2004-05, and considering a repayment of Rs. 1.20 Crore, the Commission is of the view that the depreciation amount is equivalent to outgo on repayment of loans. Hence the Commission has disallowed the advance against depreciation. Table 3.16 depicts the amount of advance against depreciation as submitted by the petitioner and that approved by the Commission.

Table 3.16: Advance against depreciation

Description	FY 2004-05		FY 2005-06	
	Petition	Commission	Petition	Commission
Advance against depreciation for IP Station	1.15	Nil	Nil	Nil

3.13.4 Interest Charges

3.13.4.1 Petitioner's Submission

The petitioner submitted that as per the Delhi Electricity Reforms (Transfer Scheme) Rules 2001, the secured loans payable by IPGCL to holding company as on July 1, 2002 is Rs. 210 Crore. As per this Transfer Scheme, there is a moratorium of 4 years for payment of interest and principal. This loan has been bifurcated station wise as under, based on the net fixed assets of the company:

I.P Station	Rs. 1.81 Crore
R.P Station	Rs. 89.33 Crore
G.T.P Station	Rs. 118.86 Crore

The Petitioner further submitted that it has availed Plan fund loan from the Delhi Government amounting to Rs. 40.37 Crore @ 13% in FY 2002-03. However further loans amounting to Rs 59.10 Crore were taken @ 11.5 % and the Petitioner proposes to draw a loan of Rs 57.60 Crore in FY 2005-06

The total Interest charges for FY 2004-05 has been estimated at Rs. 10.33 Crore and for FY 2005-06 the charges are Rs. 15.6 Crore.

3.13.4.2 Interest Charges for IP Station

The Petitioner has submitted that the Interest charges for FY 2004-05 shall be Rs. 2.95 Crore whereas for FY 2005-06 the charges will be Rs. 5.41 Crore. The actual Interest charges incurred as per the subsequent submission, by the Petitioner, for FY 2004-05 is Rs. 2.96 Crore.

3.13.4.3 Interest Charges for Rajghat Power Station

The Petitioner has submitted that the Interest charges for FY 2004-05 shall be Rs. 2.02 Crore whereas for FY 2005-06 the charges will be Rs. 3.0 Crore. The actual Interest charges incurred as per the subsequent submission, by the Petitioner, for FY 2004-05 is Rs. 1.77 Crore.

3.13.4.4 Interest Charges for Gas Turbine Power Station

The Petitioner has submitted that the Interest charges for FY 2004-05 shall be Rs. 5.36 Crore whereas for FY 2005-06 the charges will be Rs. 7.19 Crore. The actual Interest charges incurred as per the subsequent submission, by the Petitioner, for FY 2004-05 is Rs. 5.36 Crore.

3.13.4.5 Commission's Analysis

Though the interest allowed for FY 2004-05 based on the IPGCL Order issued on June 09, 2004 was 24.62 Crore, the same shall be revised to Rs. 10.09 Crore based on the actual interest payment estimated by IPGCL. The Commission has estimated the interest expenses as Rs 15.60 Crore for FY 2005-06 based on the interest and repayment schedule. The interest charges as estimated by the Petitioner and as approved by the Commission are given in Table 3.17 below.

Table:3.17 Interest Charges in Rs. Crore

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Interest					
IP Station		2.95	2.96	5.41	4.58
RP Station		2.02	1.77	3.0	2.74
GT Station		5.36	5.36	7.19	8.29
Company (as a whole)	24.62	10.33	10.09	15.60	15.60

3.13.5 Return on Equity

3.13.5.1 Petitioner's Submission

As per Transfer Scheme dated July 1, 2002 the subscribed and paid up equity capital of the company was fixed at Rs. 140 Crore and the Petitioner has estimated the Return on Equity (ROE) @ 16% on this equity of the company. The total equity has been bifurcated, plant wise, as under on the basis of Net Fixed Assets of the company:

I.P Station	Rs. 1.20 Crore
R.P Station	Rs. 59.56 Crore
G.T.P Station	Rs. 79.24 Crore

3.13.5.2 Commission's Analysis

The Commission has allowed ROE @ 16% on equity component as per the applicable GoI norms for FY 2004-05. However as per the latest CERC norms, the ROE for central generation companies have been reduced from 16% to 14% . Therefore the ROE for FY 2005-06 has been allowed at 14% for the Company. The plant wise Return on Equity as estimated by the Petitioner and as approved by the Commission is given in the Table 3.18 below.

Table:3.18 Return on Equity in Rs. Crore

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Return on Equity					
I.P Station		0.19	0.19	0.19	0.17
R.P Station		9.53	9.53	9.53	8.34
G.T Station		12.68	12.68	12.68	11.10
Company (as a whole)	22.40	22.40	22.40	22.40	19.60

3.13.6 Interest on Working Capital

3.13.6.1 Petitioner's Submission

The petitioner's submission on interest on working capital assumes the following working capital norms

- Fuel expenses for 1 month of operation at the projected PLF
- Coal inventory for 1 month
- Oil inventory for 2 months
- O&M expenses for 1 month
- Spares based on the company estimates
- Receivables for 2 months based on the projected sales.

The total working capital requirement estimated by the Petitioner based on the above is Rs. 206.15 Crore and Rs. 220.08 Crore respectively for FY 2003-04 and FY 2004-05. The interest is calculated @ 12.50% p.a. as allowed by DERC in its Tariff Order dated 09th June 2004.

3.16.1.2 Interest on Working Capital for I.P Station

The Petitioner has submitted the actual interest on working capital expenses for April to September 2004, estimates for FY 2004-05 and projections for FY 2005-06 in its ARR filing. The interest on working capital for FY 2004-05 was estimated at Rs. 7.68 Crore based on the actual expenses incurred till September 2004 and expenses for FY 2005-06 were projected at Rs. 9.90 Crore. The actual expenses incurred during FY 2004-05 as per the subsequent submission, by the Petitioner, for FY 2004-05 is Rs. 9.43 Crore.

3.13.6.2 Interest on Working Capital for Rajghat Station

The Petitioner has submitted the actual interest on working capital expenses for April to September 2004, estimates for FY 2004-05 and projections for FY 2005-06 in its ARR filing. The interest on working capital for FY 2004-05 was estimated at Rs. 6.54 Crore based on the actual expenses incurred till September 2004 and expenses for FY 2005-06 were projected at Rs. 8.00 Crore. The actual expenses incurred during FY 2004-05 as per the subsequent submission, by the Petitioner, for FY 2004-05 is Rs. 7.87 Crore.

3.13.6.3 Interest on Working Capital for Gas Turbine Power Station

The Petitioner has submitted the actual interest on working capital expenses for April to September 2004, estimates for FY 2004-05 and projections for FY 2005-06 in its ARR filing. The interest on working capital for FY 2004-05 was estimated at Rs. 9.25 Crore based on the actual expenses incurred till September 2004 and expenses for FY 2005-06 were projected at Rs. 11.07 Crore. The actual expenses incurred during FY 2004-05 as per the subsequent submission, by the Petitioner, for FY 2004-05 is Rs. 9.99 Crore.

3.13.6.4 Commission's Analysis

The Commission approves the working capital norms followed by the Petitioner as it is in line with CERC specified norms. However the total working capital requirement has been reworked by the Commission based on the gross generation and costs approved as discussed above. The working capital interest rate considered by the Petitioner @12.5% appears to be on the higher side keeping in view the prevalent market conditions and hence the Commission has considered the same as 10.25% equivalent to SBI PLR rate for short term loans. Based on the interest rate of 10.25% p.a., the interest on working capital as allowed by the Commission works out to be Rs. 18.33 Crore and Rs. 21.28Crore for FY 2004-05 and FY 2005-06 respectively as given in Table 3.19 below:

Table:3.19 Interest on Working Capital in Rs. Crore

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Interest on Working Capital					
I.P Station		7.68	6.69	9.9	7.43
R.P Station		6.54	4.97	8.0	5.99
G.T Station		9.25	6.67	11.07	7.86
Company (as a whole)	20.63	23.47	18.33	28.97	21.28

3.13.7 Total Fixed Cost

The total fixed cost estimates as per the Petitioner's submission and as allowed by Commission is summarised in the Table 3.20 below.

Table:3.20 Total Fixed Cost in Rs. Crore

Description	FY 2004-05			FY 2005-06	
	IPGCL Tariff Order dated 09.06.2004	Petition	Commission	Petition	Commission
O&M Charges	83.39	146.71	88.28	164.99	91.81
Depreciation	24.32	28.27	23.56	30.24	26.76
Advance against Depreciation	Nil	1.15	Nil	Nil	Nil
Interest	24.62	10.33	10.09	15.60	15.60
Return on Equity	22.40	22.40	22.40	22.40	19.60
Interest on WC	20.63	23.47	18.33	28.97	21.28
Total Fixed Cost	183.93	232.33	162.65	262.20	175.06
Total Net Energy Supply (MU) (Ex Bus)	2635	2884	2935	3380	3256
Fixed cost/Unit (Rs/kWh) (on ESO basis)	0.70	0.81	0.55	0.78	0.54

Power Station-wise break-up of approved Fixed Cost for FY 2005-06 :

Description	FY 2005-06		
	IP Power Station	RPH	GTPS
O&M Charges	38.62	23.87	29.33
Depreciation	2.34	7.89	16.53
Advance against Depreciation	Nil	Nil	Nil
Interest	4.58	2.74	8.29
Return on Equity	0.17	8.34	11.1
Interest on WC	7.43	5.99	7.86
Total Fixed Cost	53.15	48.83	73.11
Total Net Energy Supply (MU) (Ex Bus)	884	772	1601
Fixed cost/Unit (Rs/kWh) (on ESO basis)	0.60	0.64	0.46

3.14 Fuel Cost

The variable cost of the plant depends upon the operational and fuel parameters such as Gross Station Heat Rate, Auxiliary Consumption, Fuel Cost and Fuel Gross Calorific value. The Petitioner has submitted the operating parameters of the plant as a part of ARR. The Petitioner has also submitted additional submission as required by the Commission. The Analysis of the Commission is as follows;

Station Heat Rate for IP Power Station (IP)

3.13.7.1 Petitioner's Submission

The Petitioner, in its ARR submission had estimated the Station Heat Rate of 3559 kCal/kWh till September 2004, and 3550 kCal/kWh and 3500 kCal/kWh for FY 2004-05 and FY 2005-06 respectively. Further on May 3, 2005 the Petitioner has submitted the actual Heat Rate of the station for FY 2004-05 as 3633 kCal/kWh. In this submission the Petitioner has requested some period for improving the Heat Rate of plants as necessary R&M activities are proposed to be undertaken in forthcoming years..

3.13.7.2 Commission's Analysis

As per the draft PPA submitted by TRANSCO along with the ARR Petition for FY 2004, the Petitioner had agreed to heat rate of 3235 kCal/kWh and the same was approved by the Commission. Therefore the Commission cannot consider a Heat Rate, which is higher than the level stipulated in PPA. Further during the ARR and Tariff Determination process for FY 2004-05, the Commission directed the IPGCL to get an assessment of Heat Rate done by CEA. Pending CEA assessment, the Commission had considered the heat rate for the station of 3235 kCal/kWh as per the previous tariff Order for FY 2004-05.

The CEA Study Report on "Heat Rate of IP station" has given the following recommendation:

"The normative heat rate shall be 10 % above the design heat rate with the following adjustments:-

- a) *The normative heat rate is recommended for 80 % PLF of the station. Additional Heat Rate of 2.5 kCal/kWh shall be allowed for each 1% reduction in PLF.*
- b) *While computing PLF of the station the units under planned maintenance and shut down exceeding 1 (one) day shall not be considered.*
- c) *The design heat rate shall be lower of the guaranteed heat rate or actual obtained during PG test at % make up and design ambient conditions.*
- d) *The settlement of additional heat rate based on PLF is recommended to be made on monthly basis".*

However, as per IPGCL submission dated April 8, 2005, IP station being more than 35 years old, the Design Heat Rate data of the units of IP station is not available with them. In the absence of the same, the Commission is not in a position to estimate the heat rate in accordance with the principles recommended by CEA. Therefore, the Commission has retained the earlier approved figure of 3235 kCal/kWh. The details of the submission by the Petitioner and the allowed Heat Rate by the Commission is as given in the Table 3.21 below.

Table:3.21 Station Heat Rate in kCal/kWh

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Station Heat Rate	3235	3550	3235	3500	3235

3.14 Total Cost of fuel for IP Power Station (IP)

3.14.1.1 Petitioner's Submission

The Petitioner has submitted that as per the directions of Delhi Pollution Control Committee (DPCC), they are required to use imported coal for reducing pollution level. The Petitioner proposes to use imported coal on experimental basis by blending the same with the indigenous coal. If the same is found viable, the company might use imported coal for blending purpose in this power plant. However the cost factor on this account has not been accounted in the calculations submitted by the Petitioner.

The Petitioner has submitted the expenses towards the annual fuel cost are based on the estimated weighted average Calorific Value of the coal of 3881 kCal/kg that of oil of 10720 kCal/litre of fuel oil. In the ARR submission the cost of coal per ton was considered at Rs. 1850 for FY 2004-05 and an increase of 6.70% was considered for FY 2005-06 projections. The total coal requirement is calculated based on the PLF projected and the Station Heat Rate. The specific oil consumption was estimated at 10ml/kWh and 9.00ml/kWh respectively for FY 2004-05 and FY 2005-06 respectively, which was revised to 9.29 ml/kWh for FY 2004-05 based on the actual consumption. As per the further submission dated May 03, 2005 the petitioner has submitted the actual fuel cost for FY 2004-05 at Rs. 164.32 Crore.

3.14.1.2 Commission's Analysis

The Commission in its earlier Order of June 09, 2004 had considered the coal price of Rs. 1838 per ton. The Commission has considered the specific oil consumption as 9.29 ml/kWh for both FY 2004-05 and FY 2005-06, based on the actual consumption for FY 2004-05. For FY 2004-05, the Commission has considered the actual fuel prices for estimating the total fuel cost to be allowed based on the heat rate and auxiliary consumption approved by the Commission. For FY 2005-06 the Commission has considered an escalation of 3% on the price of coal and 5% on oil price based on past trends. The details of the total fuel cost as submitted by the Petitioner and estimated by the Commission is given in Table 3.22 below.

Table:3.22 Total Fuel Cost for I P Station

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Gross Generation (MU)	800	800	920.3	1000	1000
Net Generation (MU)	707	700	813	875	884
Calorific Value of coal (kCal/kg)	3979	3881	3917	3900	3917
Price of coal (Rs./MT)	1838	1850	1779	1974	1833
Calorific Value of Fuel Oil (FO) (kCal/l)	10720	10720	10720	10720	10720
Price of FO (Rs./kl)	18226	20086.73	19400	21091	20370
Total Fuel Cost (Rs. Crore)	130.19	147.52	148.00	190.93	166.00
Variable cost of generation (Rs./kWh)	1.63	1.84	1.60	1.91	1.66
Cost of energy sent out (Rs./kWh)	1.84	2.11	1.82	2.18	1.88

3.15 Station Heat Rate for Rajghat Power Station

3.15.1.1 Petitioner's Submission

The Petitioner, in its ARR submission had estimated the Station Heat Rate of 3302 kCal/kWh till September 2004, 3300 kCal/kWh and 3300kCal/kWh for FY 2004-05 and FY 2005-06 respectively. Further on May 03, 2005 the Petitioner has submitted the actual Heat Rate of the station for FY 2004-05 as 3379 kCal/kWh, and the projected Heat Rate for FY 2005-06 at 3300 kCal/kWh. The Petitioner further stated that the Petitioner would try to achieve the Heat Rate of 3200 kCal/kWh approved by the Commission for the station in its Order dated June 09 2004 for FY 2004-05.

3.15.1.2 Commission's Analysis

As per the draft PPA submitted by TRANSCO along with the ARR Petition for FY 2004, the Petitioner had agreed to Heat Rate of 3200 kCal/kWh and the same heat rate was approved by the Commission in its earlier Orders. Therefore the Commission cannot consider a Heat Rate, which is higher than the level stipulated in PPA. Further, during the ARR and Tariff determination process for FY 2004-05, the Petitioner during the technical discussions agreed to the Heat Rate levels approved by the Commission in their previous Order of June 2004. The Commission has therefore considered the heat rate as 3200 kCal/kWh for both FY 2004-05 and FY 2005-06 as approved in the last Order as given in the Table 3.23 below.

Table:3.23 Station Heat Rate in KCal/kWh

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Station Heat Rate	3200	3300	3200	3300	3200

Total Cost of fuel for Rajghat Power Station

3.15.1.1 Petitioner's Submission

The Petitioner has submitted that as per the directions of Delhi Pollution Control Committee (DPCC), they are required to use imported coal for reducing pollution level. The Petitioner

proposes to use imported coal on experimental basis by blending the same with the indigenous coal. If the same is found viable, the company might use imported coal for blending purpose in this power plant. However the cost factor on this account has not been accounted in the calculations submitted by the Petitioner.

In the ARR of the Petitioner, the cost of coal per ton was considered at Rs. 1850 for FY 2004-05 and an increase of 6.7% was considered for FY 2005-06 projections. The total coal requirement was calculated based on the PLF projected and the Station Heat Rate. The Petitioner has submitted the anticipated fuel cost for FY 2004-05 at Rs. 127.03 Crore. The actual fuel expense for FY 2004-05, as per the submission made on May 03, 2005, was revised to Rs. 113.11 Crore.

3.15.1.2 Commission's Analysis

The Commission in its earlier Order on June 09, 2004 had considered a coal price of Rs. 1838 per ton. The Commission has considered the specific oil consumption as 1.94 ml/kWh of LDO and 4.48 gm/kWh of LSHS based on the actual consumption for FY 2004-05. For FY 2004-05, the Commission has considered the actual fuel prices for estimating the total fuel cost to be allowed based on the heat rate and auxiliary consumption approved by the Commission. For FY 2005-06 the Commission has considered an escalation of 3% on the price of coal and 5% on oil price based on past trends. The details of the total fuel cost as submitted by the Petitioner and estimated by the Commission is give in Table 3.24 below.

Table:3.24 Total Fuel Cost

Description	FY 2004-05			FY 2005-06	
	IPGCL Order	Petition	Commission	Petition	Commission
Gross Generation (MU)	850	780	697	910	870
Net Generation (MU)	754	689	619	807	772
Calorific Value of coal (kCal/kg)	4107	3900	3912	3900	3912
Price of coal (Rs./MT)	1838	1850	1806	1974	1860
Calorific Value of LSHS (kCal/kg)	10000	10350	10320	10350	10320
Calorific Value of LDO (kCal/l)	10720	10720	10720	10720	10720
Price of LSHS (Rs./MT)	13150	13645	12634	14327	13266
Price of LDO (Rs./kl)	18226	20086	18682	21091	19617
Total Fuel Cost (Rs. Crore)	125.41	127.03	107	156.80	136
Variable cost of generation (Rs./kWh)	1.48	1.63	1.54	1.72	1.57
Cost of energy sent out (Rs./kWh)	1.66	1.84	1.74	1.94	1.76

3.16 Station Heat Rate for IP Gas Turbine Station

3.16.1.1 Petitioner's Submission

The Petitioner has submitted that due to depleting gas reserves of ONGC, GAIL is imposing cuts on a day to day basis on the supply of CNG. The petitioner is of the viewpoint that these cuts will increase progressively and has estimated cuts to the tune of 20% for FY 2004-05 and FY 2005-06. Due to the shortage of supply of CNG the company entered into an agreement with GAIL for the supply of RLNG. The contracted quantity of RLNG is 0.6 MCMD. The petitioner has submitted the heat rate as 2403 kCal/kWh and 2406 kCal/kWh for FY 2004-05 and FY 2005-06 respectively. Further on a submission made by the petitioner on May 03, 2005 the heat rate has been submitted as 2303 kCal/kWh based on the actual data for FY 2004-05.

3.17.1.2 Commission's Analysis

The Commission has approved a Heat Rate of 2303 kCal/kWh on the basis of Net Calorific Value of Gas for FY 2004-05, based on the actual figure for the year. However for FY 2005-06 the Commission has approved a normative heat rate of 2450kCal/kWh, on the basis of Gross Calorific Value of Gas. The details of Heat Rate as approved by the Commission are given in the Table 3.25 below.

Table:3.25 Station Heat Rate in kCal/kWh

Description	FY 2004-05			FY 2005-06	
	IPGCLOrder	Petition	Commission	Petition	Commission
Station Heat Rate	2346	2403	2303	2406	2450*

* based on Gross Calorific Value of fuel

3.17 Total Cost of fuel for IP Gas Turbine Station

3.18.1.1 Petitioner's Submission

The Petitioner, in its ARR filing has submitted that it has entered into an agreement with GAIL for supply of RLNG for meeting shortfall in CNG to its gas turbine units. After the supply of this RLNG, the Petitioner proposes to stop using liquid fuel. The Petitioner stated that the RLNG supply has started from March 2004 and requested the Commission to take note of this change of fuel at the time of framing tariff.

The Petitioner also stated that it is obliged to bear the cost of this contracted quantity even if there is no off-take of supply. The Petitioner further stated that in view of this Agreement the company would first off-take the contracted supply of RLNG before CNG. Accordingly the Petitioner revised its fuel cost estimated for FY 2004-05. The fuel costs for FY 2004-05 is based on consumption of 245 MMSCM of CNG and 183 MMSCM of RLNG.

As per Petitioner's original ARR submission the expenses towards the fuel cost based on CNG was Rs. 118.39 Crore and Rs. 238.84 Crore for April to September 2004 and FY 2004-05 respectively. The Petitioner estimated the fuel cost for FY 2005-06 based on 172.28 million SCM CNG, 54.75 million SCM Panna Mukta Tapti (PMT) Gas and 208 Million SCM RLNG at Rs. 273.10

Crore. The CNG price was estimated at Rs. 4.52/SCM for FY 2004-05 and a 5% escalation was considered for FY 2005-06. The RLNG price for FY 2004-05 was estimated at Rs. 7.0/SCM.

Further the Petitioner has submitted the actual fuel cost for FY 2004-05 at Rs. 213.49 Crore with a mix of 258.03 million SCM of CNG and 168.32 million SCM of LNG at a price of Rs. 4.31/SCM for CNG and Rs. 6.94 per SCM of RLNG. The Petitioner, in a subsequent submission, revised the Gross Generation from GTPS for FY 2005-06 from the earlier estimates of 1750 MU to 1650 MU.

3.18.1.2 Commission's Analysis

The Commission is aware of the shortage of gas in the country and believes that the petitioner makes adequate arrangements for the fuel to run its plant at the given capacity.

During the technical sessions, the Commission asked the petitioner to submit the actual data for FY 2004-05 for quantity of different fuels used and the fuel costs incurred. The petitioner submitted these details on May 03, 2005 and May 18, 2005. The Commission has considered the actual fuel prices for FY 2004-05.

As regard to FY 2005-06, the Commission asked the Petitioner to submit the details of gas allocation and the gas price with effect from FY 2004-05. The Petitioner submitted the details and the same has been considered by the Commission for computing the fuel costs for FY 2005-06.

The Commission has observed that the price of RLNG gas being supplied to IPGCL is charged in Rs/MMBTU terms. The unit of heat content i.e. MMBTU being used for pricing of RLNG gas is not a standard SI Unit adopted in India. The IPGCL is advised to take up the matter with the fuel supplier for availing the supply of RLNG gas as per the standard units adopted in India i.e. SI units.

Further, the Commission also obtained the details of actual APM gas prices, net calorific value of APM gas and the mechanism of adjustments on account of calorific value. Based on the details submitted by the Petitioner, the Commission has estimated the price of APM Gas as Rs 3836/1000 SCM for the net calorific value of 8250 kCal/SCM excluding VAT and Service Tax on Transportation. After taking into account the service tax on transportation, the estimated price of APM Gas works out to Rs 3961/1000 SCM, which has been considered by the Commission for the period July 2005 to March 2006 while approving the total fuel cost for FY 2005-06.

Based on above, the total fuel cost and variable cost as estimated by the Petitioner and as approved by the Commission for FY 2004-05 and FY 2005-06 is given in Table 3.16.

Table: 3.26 Total Fuel Cost for FY 2004-05

Description	FY 2004-05			FY 2005-06	
	IPGCL Order for FY 2004-05	Petition	Commission	Petition	Commission
Gross Generation (MU)	1200	1500	1539	1750	1650
Net Generation (MU)	1174	1445	1503	1698	1601
Total Fuel Cost (Rs. Crore)	152	238.88	213	289.53	257

Variable cost (ESO basis) (Rs./kWh)	1.29	1.64	1.42	1.71	1.61
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The Commission further directs that any variation in variable cost, owing to change in fuel composition (i.e. depending on % of CNG or PMT or RLNG consumed) or variation in fuel price shall be considered while truing up next year.

3.18 Other Issues

3.18.1 Voluntary Retirement Scheme (VRS)

3.18.1.1 Petitioner's Submission

The Petitioner has submitted that, during FY 2003-04, the company has introduced the VRS Scheme for its employees in Category B, C & D in which 383 employees were given VRS in October 2003 with a cost of Rs. 21.00 Crore. The Petitioner has also paid the terminal benefits to these employees which will be later on reimbursed to the company by DVB Terminal Benefit Trust on the scheduled date of Superannuation of the employees. The interest loss on this account and ex-gratia payment to VRS employees approximately amounts to Rs. 25.94 Crore. This outgo will be offsetted by the savings to be made in the salaries over the next five years (as per the cost benefit analysis of Voluntary Retirement Scheme submitted vide submission of date 08.04.2005). Accordingly the petitioner requested the Commission to add Rs. 5.01 Crore (1/5th of the total VRS expense) in O&M cost, which is equal to the amount of saving on account of post-VRS less employee expense.

3.18.1.2 Commission's Response

In the last year Tariff Order of date 09th June, 2004, the Commission had opined the following view, in line with the VRS amortisation philosophy adopted for the DISCOMs:

"There are two options available for amortisation of costs of VRS:

- Option 1: Amortisation of entire VSS expense within 1 year
- Option 2: Amortisation of VSS expense by spreading it over next 2-3 years through savings in Employee Costs

Before examining these two options, the Commission would like to clarify that the acid test for implementation of any such scheme is that the implementation of scheme has to be tariff neutral to the consumers.

In case of Option 1, if the amortisation of entire VRS expenses is considered as part of ARR in one year, it will lead to substantial increase in ARR and revenue gap and in turn lead to tariff shock to the consumer. Considering this aspect, the Commission feels that the VRS cost cannot be considered in one year ARR and the cost of VRS needs to be spread over the next 2-3 years.

In case of option 2, the amortisation of VRS scheme is to be spread over 3-4 years. The Commission further opines that the expenditure on VRS, the borrowing cost, and increase in

other expenses due to implementation of this scheme, if any, have to be met from the savings in Employee Costs over the future years. With this mechanism, once the cumulative savings on account of reduction in employees are equivalent to the one time VRS outgo after adjusting for the increase in the other expenses, the savings in employee expenses will be available for the purpose of ARR computations and thus in the tariff to the consumers.

Based on analysis of above two options, the Option II is to be considered for amortising the one time VRS outgo from the savings in future years as this will be tariff neutral to consumers till the cumulative savings are equivalent to VRS costs.

By implementing the VRS scheme, there will be savings in employee expenses, but the other expenses may increase on account of outsourcing of some activities due to reduction in number of employees. These expenses and the carrying cost of the VRS scheme should also be considered while arriving at the cost benefit analysis for the scheme. The payback period of the scheme should be in the range of 3-4 years so that the benefits post this period could flow to the consumers in the form of reduced tariff."

Further the Commission had advised IPGCL to get "Assessment of O&M expenses" for the individual stations of IPGCL done by CEA. Pending the study report, an adhoc amount of O&M expense was allowed to IPGCL, with the provision of carrying cost @ 10%. Now as the CEA study report has been received, the same has been accepted and the O&M expense for the year FY 2004-05 has been trued up accordingly. Further CEA has recommended normative O&M expense, for future years.

However IPGCL in its petition has requested for amortisation @ Rs. 5 Crore for FY05-06. The Commission has taken the tariff neutral approach for treatment of VRS expense by DISCOMs and it cannot adopt a different yard-stick for IPGCL. Further as CEA has recommended normative O&M expense (Rs./ MW), the same has been adopted by the Commission for FY 2004-05 onwards. Any expenses towards VRS has to be met by savings in employees cost due to implementation of VRS in line with the tariff neutral approach.

3.18.2 Renovation & Modernisation

3.18.2.1 Petitioner's Submission

In order to achieve reliability of the plants, efficiency, cost reduction, extended life and meet the present environment norms, the Renovation & Modernisation plans for all the power stations are envisaged by the Petitioner. The petitioner has proposed to incur the following capital expenditure in these power plants in the next 4-5 years:

I.P Station	Rs. 445 Crore
R.P Station	Rs. 121.57 Crore
G.T Station	Rs. 140 Crore

The Petitioner has already submitted the detailed project report in respect of Renovation & Modernisation activities of all the three plants of the company for consideration of the

Commission. The cost benefit analysis of the proposed activities have been worked out in the project report, a summary of which was included along with the additional submission by the Petitioner. The Petitioner further pleads that the implementation of Renovation & Modernisation plans are a must for the company to achieve the above stated objectives. The company also expressed their willingness to have the plans assessed by CEA.

3.18.2.2 Commissioner's Response

The Commission has already directed the Petitioner to get the projects evaluated by CEA and will take necessary actions on submission of the CEA recommendations.

3.18.3 Expenses on ash evacuation/utilisation

The Petitioner has estimated an expenditure of Rs. 1.10 Crore towards ash evacuation/utilisation for each thermal power station and requested for the inclusion of the same as a separate cost head in the Tariff Order as per the CEA notification No. 1/8/2003/TCD/703 dated April 22, 2003. As per this notification CEA states that the expenditure incurred by thermal power stations for evacuation/utilisation of ash, where such an expense was not a part of project cost, could be allowed under tariff. The notification has further listed the expenditure areas which can be allowed in the inclusion of tariff vide its Annexure II.

3.18.3.1 Commissioner's Response

The Commission will take appropriate view in the matter while approving the PPA between IPGCL and Delhi Transco Limited.

4. Generation Tariff Philosophy and Approved Tariffs

Currently as per the CERC Terms and Conditions of Tariff Regulations, the tariff for the generation companies are fixed based on the 'Two Part Tariff Principles'. Under this principle the tariff is divided into two components (i) fixed component (ii) variable component.

4.1.1 Fixed Component of Tariff

The fixed component consists of all the costs incurred by the generating company irrespective of the generation of the plant. This component typically includes;

- Interest payment
- Depreciation
- Return on Equity
- O&M cost
- Interest on working capital
- Income Tax

This could also include any fixed payment to be made by the generating company towards the purchase and transportation of fuel. As the capacity of the plant is dedicated to a utility, any fixed cost arising out of some contractual obligation of the generation company e.g. minimum fuel off-take guarantee, has to be paid by the power off taker.

Further, as per the CERC Terms and Conditions of Tariff Regulations, the recovery of total Fixed Charges (Capacity Charges) is permitted at the pre-specified target availability and the recovery of capacity (fixed) charges below the level of target availability is on pro rata basis. At zero availability, no capacity charges are payable.

In line with the CERC regulations, the Commission approves the target availability as specified in Table 4.1 for recovery of annual fixed charges by the Petitioner and the recovery of fixed charges below the level of target availability shall be on the pro rata basis.

While fixing the target availability for Genco Stations, the commission has taken into account the old age of the IP Station and RPH. Further, the Commission is of the view that till date, the GENCO is recovering the full fixed charges based on the actual generation as a part of single part tariff. The Commission is of the opinion that in order to move towards the Intra State Availability Based Tariff regime, it is imperative to fix the two part tariff for all the generating stations. Considering these aspects, the Commission has fixed the target availability for recovery of entire fixed charges as per the generation targets for FY 2005-06. The Commission will review the target availability for recovery of entire fixed charges based on the actual performance during FY 2005-06.

The total fixed cost shall be paid by the off-taker of the power on a monthly basis where each month payment shall be 1/12th of the total fixed cost.

Table 4.1 :Target Availability for Recovery of Fixed Charges

Station	Target PLF (%)	Net MUs (ESO basis)
IP Station	46.10%	884
RPH	73.65%	772
GTPS	66.79%	1601

4.2 Variable Component

Fuel cost is the variable component of the tariff, which, as the name suggests varies, based on the actual operation of the plant. Typically this includes primary fuel cost and secondary fuel cost.

The variable cost shall be billed by the Petitioner to TRANSCO based on the actual power purchased during the month on a monthly basis as per the rates approved by the Commission. The Petitioner shall bill for the variable charges based on the Energy Sent Out (ESO) from the power station till the introduction of Intra State Availability Based Tariff (ABT) in the State of Delhi. The mechanism for recovery of variable charge after introduction of Intra State ABT in the State of Delhi shall be governed by the stipulations to be made at the time of its introduction.

4.2.1 Incentives

4.2.1.1 Petitioner's Submission

The Petitioner through its supplementary submission requested the Commission to fix incentive norms for both IPGCL and PPCL as per CERC guidelines for generation over the PLF percentage fixed for recovery of full fixed cost.

4.2.1.2 Commissioner's Response

The Commission recognise the importance of fixing incentives for actual PLF over and above the PLF fixed for recovery of full fixed cost. The Commission proposes an incentive at a flat rate of 25.0 paise/kWh in case individual stations of IPGCL achieve a PLF level of beyond the target PLF, as tabulated hereunder:

Table 4.2 : Station-wise target PLF for incentive:

Station	Target PLF (%)
IP Station	50%
RPH	75%
GTPS	70%

4.3 Fuel Price Adjustment Formula

Apart from the approval of the ARR for FY 2005-06, the Petitioner has also requested for a Fuel Cost Adjustment Formula as discussed below.

4.3.1 Petitioner's Submission

The Petitioner has requested for an approval of appropriate Fuel Price Adjustment formula to compensate the variation of fuel cost as the fuel price is subject to price variations.

4.3.2 Commission's Response

The Commission while estimating the fuel cost for FY 2005-06 has considered the escalation in the coal and liquid fuel prices for coal based thermal power stations. For the gas based station, the commission has considered the gas consumption mix and prevalent fuel prices for estimating the total fuel costs for FY 2005-06. The Commission is of the opinion that there is no need for a Fuel Price Adjustment Formula at this stage. However any variation in the fuel prices during the year shall be considered during truing up at the end of the year.

4.4 Open Cycle Tariff

The Petitioner has requested the Commission to fix tariff for Open Cycle operation of the GT Plant.

4.4.1 Commissioner's Response

The Commission is of the opinion that the plant should be always operated in the combined cycle mode, as the open cycle operations are very inefficient. However under unforeseen circumstances, which are beyond the control of the Petitioner, the plant may be forced to operate in Open Cycle mode. The Commission will approve the operational parameters for open cycle and the conditions for open cycle operation as a part of Terms and Conditions of Tariff Regulations. In the interim period the heat rate for Single/Open Cycle operation shall be taken as 3125 kCal/kWh based on Gross Calorific Value (GCV) of fuel. Simple/Open Cycle operation shall be resorted to only under extreme/exceptional circumstances, if so warranted, by the directions of the SLDC.

4.5 Truing up for FY 2004-05

Based on the truing up of expenses, the tariff approved for FY 2004-05 is given in Table 4.3:

Table: 4.3 Tariff for IPGCL for FY 2004-05

Description	IP Station	RPH	GT PS
Composite Fixed Cost p.a. (Rs. Crore)	162.65		
Variable Charge per unit (Rs/kWh)	1.82	1.74	1.42

4.6 Approved Tariff for FY 2005-06

The Commission further directs that the tariff applicable for billing by IPGCL to TRANSCO shall be station wise and on the basis of a two-part Tariff. The total fixed costs approved by the Commission will be recovered at target availability specified in Table 4.1 . Fixed Costs shall be recovered in 12 equal monthly instalments. The variable cost shall be billed by IPGCL to TRANSCO on the basis of Variable Charge as approved by the Commission. In case any station of IPGCL achieves a PLF level of beyond the target PLF for incentive, an incentive @ 25 paise per kWh shall be payable by TRANSCO to IPGCL for the actual generation beyond the normative PLF level on an annual basis at the end of the year.

Based on the two part tariff principles as discussed in the above sections, the Commission approves the tariff for IPGCL stations for FY 2005-06 as given in Tables 4.4:

Table: 4.4 Tariff for IPGCL Stations for FY 2005-06

Description	IP Station	RPH	GT PS
Fixed Cost p.a. (Rs. Crore)	53.15	48.83	73.11
Variable Charge per unit (Rs/kWh)	1.88	1.76	1.61

