



COMMISSION'S ORDER
ON
GENERATION TARIFF FOR
HARYANA POWER GENERATION CORPORATION LIMITED
FOR FY 2008-09

April, 21st 2008

HARYANA ELECTRICITY REGULATORY COMMISSION
Bay No. 33-36, SECTOR - 4, PANCHKULA - 134 112, HARYANA
www.herc.nic.in

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BAY NO.33-36, SECTOR - 4, PANCHKULA – 134 112

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CASE No: HERC / PRO– 4 OF 2008

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PANCHKULA

HARYANA ELECTRICITY REGULATORY COMMISSION
BAY NO.33-36, SECTOR - 4, PANCHKULA – 134 112

CASE NO: HERC / PRO - 4 OF 2008

DATE OF ORDER: April 21, 2008

In the matter of application filed by Haryana Power Generation Corporation Limited (HPGCL) for approval of generation tariff for FY 2008-09.

Present:

Shri Bhaskar Chatterjee	Chairman
Er. T.R. Dhaka	Member
Shri T.S. Tewatia	Member

**On behalf of
HPGCL:**

Shri J.C.Kinra	COO
Shri V. K. Goyal	CE/PPM
Shri D.C. Arya	FA/Hqr.

**On behalf of
HVPNL:**

Shri P.K. Das	Managing Director
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**On behalf of
HERC Staff:**

Shri Surjeet Singh	Secretary
Shri Sanjay Varma	Director / Tariff
Smt. Surbhi Jain	Dy. Director / Accounts
Er. S. K. Goyal	Dy. Director / Dist.
Shri Gulshan Aggarwal	Dy. Director / Eco.

ORDER

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1 PROCEDURAL ASPECTS OF THE FILING

1.1 Preamble

The Haryana Electricity Regulatory Commission (HERC) is guided by sub - section 1 (a) of section 86 and sub - section 1(a) of section 62 of the Electricity Act, 2003 (EA - 2003) for determination of tariff in the case of intra-state generating company i.e Haryana Power Generation Corporation Limited (HPGCL).

1.2 Applicability of the Electricity Act 2003 in Haryana

In exercise of the powers conferred by clause (d) of section 172 of the EA - 2003 , the Government of Haryana vide its notification no. 1/4/2003 -1 Power dated 8/09/2003 declared that all the provisions of the Act except Section 121 which has not been enforced by the Central Government vide notification no. S.O 699 (E) dated 10/6/2003 shall not apply in the State of Haryana for a period of six months from the appointed date i.e. 10/6/2003. Thus, the Act came into force in the State of Haryana w.e.f. 10/12/2003.

1.3 Tariff Filing Directive

HERC vide memo no. 2276-80/PS/Chairman dated 2nd November 2007 directed HPGCL to file generation tariff application by 1st November 2007 for its consideration and approval. However, HPGCL vide its letter no. HPGC / FIN / Reg-260 / Ch-18 dated 8th November, 2007 requested for extending the date of submission of Generation tariff application to 25th November 2007. HPGCL filed the Generation tariff application for FY 2008-09 vide memo no. HPGC/FIN/Reg-259/1374 dated 29th November, 2007.

The Commission reviewed the HPGCL's filing of the proposed tariff (FPT) and vide letter no. 3374/HERC/Sv/2008 and 3347/HERC/generation tariff Appl/FY 2008-09/technical dated 10/01/2008 sought clarification / additional information on a number of issues including rate of depreciation, cost of short term borrowings,

delivered cost of coal, R&M activities, planned shutdown, energy audit status of PTPS Unit 5&6 and performance of Faridabad Thermal Power Station (FTPS) and older generating units at Panipat (PTPS). HPGCL vide memo no. HPGC/FIN/reg – 259 dated 4/02/2008 submitted their response to the queries and observations of the Commission.

1.4 Public Proceedings

To conform to the provisions of sub section (2) of section 64 of the Act, HPGCL published the salient features of generation tariff application in two newspapers having wide circulation in Haryana, one each in Hindi and English, inviting objections from the general public and interested organizations. HPGCL, by way of public notice, informed the stakeholders about the gross generation, net generation, fuel cost, O&M expenses, depreciation, interest and finance charges and return on equity estimates for FY 2008-09, sources of availability of the relevant documents and an invitation to the public / interested organizations to file their objections, if any, by 7th January, 2008. The public notice appeared in the following newspapers:

Table 1.1 Public Notice by HPGCL

Name of Newspaper	Language	Date of Publication
The Tribune	English	10/12/2007
Dainik Bhaskar	Hindi	08/12/2007

The Commission issued public notice on 28th January 2008 informing the public & interested persons / organizations, that a public hearing is scheduled for 25th February 2008 at 11.30 A.M in its courtroom in respect of determination of generation tariff for FY 2008-09. The last date for filing objections was determined as 5.00 P.M. on 10th February 2008. The public notice was issued in the newspapers mentioned in table 1.2.

Table 1.2 Public Notice by HERC

Name of Newspaper	Language / Edition	Date of Publication
Times of India	English / Chandigarh	28/01/2008
Dainik Bhaskar	Hindi / Chandigarh	28/01/2008

In response to the public notice issued by HPGCL and subsequently by the Commission, objections / suggestions were received from the distribution and retail supply licensee(s) in Haryana i.e. Dakshin Haryana Bijli Vitran Nigam Ltd. (DHBVNL) and Uttar Haryana Bijli Vitran Nigam Ltd. (UHBVNL).

1.5 Public Hearing

The public hearing was held as per schedule on 25th February, 2008. The Chairman HERC invited HPGCL to make their general presentation and directed them to reply to the specific issues raised during the hearing. The presentation was made by M/S ICRA on behalf of HPGCL. The Managing Director of HVPNL orally responded to queries of the Commission on behalf of HPGCL. The Chief Operating Officer (COO) HPGCL and FA/Hqr. HPGCL too dealt with the technical and commercial issues respectively.

2 ANALYSIS OF THE TARIFF FILING & COMMISSION'S ORDER

The major items of expenditure and the operating parameters proposed by HPGCL for generation tariff determination and HERC approvals of the same are discussed in the paragraphs that follow.

2.1 Installed capacity :

The installed capacity of HPGCL as reported by them in their generation tariff application for FY 2008-09 is as per table 2.1.

Table 2.1 Installed Capacity

Particulars	Installed Capacity as on 31.03.2008	Date of Commissioning
Faridabad Thermal Power Station (3X55 MW) 60 MW units de-rated to 55 MW by CEA W.E.F 11/01/1990 due to technical constraints	55 MW Unit No.1 55 MW Unit No.2 55 MW Unit No.3	22/11/1974 06/03/1976 01/04/1981
Panipat Thermal Power Station, Panipat (1X 117.8 + 3 X 110 MW + 2X210 MW + 2X250 MW)	Stage-1 117.8 MW Unit No.1 110 MW Unit No.2 Stage - II 110 MW Unit No.3 110 MW Unit No.4 Stage - III 210 MW Unit No.5 Stage - IV 210 MW Unit No.6 Stage - V 250 MW Unit No .7 250 MW Unit No .8	01/11/1979 27/03/1980 01/11/1985 11/01/1987 28/03/1989 31/03/2001 28/09/2004 25/02/2005
Western Yamuna Canal Hydro Project Bhudkalan (Yamunanagar) (6X8 MW and 2X7.2 MW)	Power House A 8 MW Unit No 1 8 MW Unit No 2 Power House B 8 MW Unit No 1 8 MW Unit No 2 Power House C 8 MW Unit No 1 8 MW Unit No 2 Power House D 7.2 MW Unit No1 7.2 MW Unit No 2	29/05/1986 13/06/1986 15/05/1987 01/06/1987 27/03/1989 18/04/1989 16/04/2004 12/05/2004
Micro Hydro Power station, Kakroi	0.30 MW	
DCR TPP I	300 MW	Under commissioning#
DCR TPP II	300 MW	- Do - #
Grand Total	2195.5 MW	
# as reported by HPGCL during the public hearing on 25/2/08, the expected COD of Unit I is 1/04/2008 and Unit II is 15/5/2008.		

2.2 Performance of HPGCL Stations

The performance of HPGCL over the years as intimated vide their letter dated 4/2/2008 and presented by them during the public hearing held on 25th February 2008 is summarized in table – 2.2.

Table 2.2 Performance of HPGCL (1998-99 to 2007-08)

Particulars	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08 upto 1/08
Installed Capacity (MW)	863.3	863.3	863.3	1073.3	1073.3	1073.3	1337.7	1587.7	1587.7	1587.7
PLF (%)	49.24	53.24	49.73	60.80	66.44	74.91	69.46	67.00	78.78	78.69
Auxiliary Consumption (%)	12.04	11.70	11.80	11.11	10.56	10.47	11.04	10.08	9.80	10.01
Coal Consumption (Gms/kWh)	838	803	816	789	770	764	784	741	721	738
Oil Consumption (ml/kWh)	12.70	6.38	5.97	3.29	3.43	3.35	3.97	3.74	1.85	1.70
Gross Gen (MUs)	3784	4051	3792	5311	6212	6997	6915	9181	10780	9051
Station Heat Rate (Kcal/kWh) #	3522	3772	3505	3432	3365	3318	3287	3074	2894	2924
Transit Loss of Coal (%)	-	-	-	6.58	6.48	4.19	4.23	4.79	3.23	4.80 (12/07)

as per information filed by HPGCL vide memo no. HPGC/FIN/Reg – 259 dated 4/02/2008

The Commission is concerned about the fact that despite adequate capital and operating expenditures allowed by it including FPA (Fuel Price Adjustment) based on enhanced cost of coal & fuel oil and actual GCV (Gross Calorific Value) of coal, crucial parameters such as Station heat rate, plant load factor and auxiliary power consumption, in the case of PTPS (Units 1 to 6) and FTPS (Units 1 to 3), as well as specific oil consumption in case of latter power station did not show any substantive improvement.

2.3 HPGCL proposed Generation tariff for FY 2008-09

The proposed cost of power generation for FY 2008-09 as presented by HPGCL during the public hearing held on 25th February 2008 are presented in table 2.3:

Table 2.3 HPGCL Proposed Cost of Power Generation (FY 2008- 09)

Parameters	PTPS Panipat	FTPS Faridabad	DCR TPP Yamuna Nagar	WYC & Kakroi	Total
Variable Cost (Rs/kWh)	1.92	3.71	1.71	-	1.89
Fixed Cost (Rs/kWh)	0.94	1.25	1.54	1.05	1.13
Total Charges (Rs/kWh)	2.86	4.96	3.25	1.05	3.02
Average Sale Rate (Rs/kWh)	3.02				

Capacity Charges (Fixed Cost):

The guidelines for filing of application for determination of tariff for generation companies have not been issued by the HERC under Section 61 of the Electricity Act 2003. In the absence of guidelines, HPGCL has not proposed the tariffs on two-part basis. Thus, recovery of fuel as well as fixed expenses is on per unit ex-bus generation basis i.e. single part tariff has been proposed till the implementation of Intra – State Availability Based Tariff (ABT).

In their presentation during the public hearing held on 25th February 2008 HPGCL highlighted the provision of Para no. 5.3 of the Tariff Policy (notified by the Government of India on 6/01/2006) that provides for evolving suitable performance norms of operations and where operations have been much below the norms for many previous years the SERCs are required to fix relaxed norms and draw a transition path over the time for achieving the norms notified by the Central Commission. Based on these premises HPGCL filed the instant tariff application for determination of generation tariff for FY 2008-09 i.e. CERC notified operating norms for new units and as per actual performance up to September 2007 for old units

Regarding O&M expenses, HPGCL in view of the Judgment of the hon'ble Appellate Tribunal dated 10/1/2008 in Appeal No. 81 of 2007, submitted that the plant being old the maintenance expense can also

be higher than what is estimated at the given point of time. Thus the Commission has to do some more exercise in arriving at the correct figure of O&M expenses which can be taken as pass through in tariff. Consequently, the Commission should consider O&M expenses as per actual.

Fuel Cost (Variable Charges):

On the basis of the above order, HPGCL submitted that the Heat Rate which they have been able to achieve for the respective station should be considered especially for older generating unit.

F TPS is to be phased out in FY 2010-11. Therefore total cost of F TPS should be a pass through as per actual. The performance parameters of old units i.e. P TPS Unit 1 to 6 should be considered based on last three year's average. Transit loss of coal should also be considered as per actual as HPGCL has no control over the same.

2.4 Tariff Objective

The Commission issued a number of directives in its previous order(s) dated 14/05/2004, 2/05/2005, 23/05/2006 and 08.05.2007. However, it notes with concern that quite a few directives have not been complied or partly complied. A list of directives issued by the Commission but not yet fully complied by HPGCL or requiring continuing compliance is provided at Annexure-1.

While determining generation tariff, the Commission has taken into consideration the FPT dated 29/11/2007, additional information / clarifications sought by the Commission or otherwise, oral submission / presentation made by HPGCL at the time of public hearing on 25/02/2008. The Commission has attempted to balance the interest of the utility as well as the consumers while determining the generation tariff for FY 2008-09.

The Commission is conscious of the fact that much needed augmentation of power generation in the state can only be sustained if the generation company is financially viable and operationally sound. Thus, the generation business ought to conform to technical and commercial rigours in order to ensure availability of power at a reasonable cost to the electricity consumers of Haryana.

It is a matter of great concern to the Commission that as per the performance of HPGCL reported up to January 2008 the PLF of PTPS Units 1-4 is still around 60% and FTPS is 50% as against the national benchmark of 80%. Auxiliary power consumption at all the powerhouses except the new units i.e. PTPS Unit 7 & 8, are way above the national norm. In the case of PTPS Units 1-4 and FTPS it is as high as 12.21% and 14.68% respectively. Specific Fuel Oil Consumption in the case of PTPS 1-4 is still hovering around 3 ml/kWh and in the case of FTPS it is whopping 8.85 ml/kWh as against the national benchmark of 2 ml/kWh. The Station Heat Rate (SHR) of PTPS Unit 1-4 at 3465 Kcal/kWh, PTPS Unit 5 & 6 at around 2696 & 2693 Kcal/kWh and FTPS 4825 Kcal/kWh are way above as compared to the national norms and targets determined by the Commission.

In the generation tariff order for FY 2006-07, HPGCL was directed to ensure continuous improvement in the SHR of the above mentioned powerhouses so that in subsequent years the cushion allowed during the transition phase can be rolled back. HPGCL was also directed to undertake detailed analysis including energy audit of PTPS Unit 5&6 and submit a report to the Commission within 3 months from the date of the order i.e. 8th May 2007. However, despite a lapse of almost 10 months no report has been submitted. Resultantly, due to the casual approach of HPGCL the opportunity of benefits to be derived from energy audit by way of corrective action and consequent improved performance has been lost.

2.5 Plant Load factor (PLF)

An analysis of the performance during FY 2007-08 (up to January 08) as reported by HPGCL reveals that PLF of PTPS Units 1-4 is 60.66% as against 66.59% during FY 2006-07 and last seven years best achieved of 72.45%. The drop in PLF has largely been influenced by the performance of PTPS Unit – 1. HPGCL had planned refurbishment of this unit during FY 2006-07 which was re-scheduled to FY 2007-08 commencing from 1st of April 2007. The Unit was finally taken up for refurbishment w.e.f. 24th September 2007 i.e. a delay of about a year from the original schedule submitted to the Commission. This is despite the fact that the Commission in its FY 2007-08 order issued a clear cut directive i.e. “The Commission directs that planned shutdown schedule as intimated to the Commission with corresponding capital expenditure (both loan and equity) must be adhered to. These units, after intensive R&M and annual overhauling, must operate at a PLF of above 80%”. Notwithstanding the Commission’s directives and its own interest the refurbishment schedule was inordinately delayed. Resultantly, the performance of PTPS Unit – 1 suffered i.e. PLF witnessed a substantial drop to 32.3% from 62.63% achieved in FY 2006-07. PTPS Unit – 2 has shown expected improvement in PLF after overhauling during September / October 2007 i.e. an improvement from 65.07% to 84.56% in January 2008. The overall PLF of PTPS unit - 2 up to January 2008 is 64.22% and is likely to improve as the Units is expected to perform above 80% for the rest of the year. The PLF of PTPS Unit 3 & 4 up to January 2008 at 78.85% and 69.33% level are satisfactory as the former is closer to the national benchmark of 80% while the latter is at par with the benchmark of 70% set by the Commission in FY 2007-08.

Considering the fact that the refurbishment of PTPs Unit – 1 will be completed before the beginning of FY 2008-09 for which tariff application is under consideration, PTPS Unit – 2 has already been refurbished and has achieved PLF of 84.56% in January 2008, PTPS Units 3 & 4 are operating satisfactorily as stated above, **the Commission approves an average PLF of 77% for PTPS Units 1-4 for the purpose of determining generation tariff for FY 2008-09. HPGCL is directed to ensure annual overhauling of the units as per the schedule submitted to the Commission.**

The Commission is pleased to note that PTPS units 5-8 have achieved PLF of more than 80%. In line with the national norms, as adopted in the previous orders, the Commission allows PLF of 80% for PTPS Unit 5, Unit 6, Unit 7, Unit 8 & DCR TPP 1 & 2 at Yamuna Nagar, even though these units are capable of achieving higher PLF.

FTPS (1-3) have achieved a PLF of 50.13% in FY 2007-08 (up to January 2008) which is an improvement over 42.64% achieved during FY 2006-07. HPGCL vide its letter dated 28/02/2008 has submitted that it has been decided to phase out FTPS on Commissioning of 2 X 600 MW RGTPP-Hissar and hence no major R&M work is envisaged. It is observed from the performance report submitted by HPGCL that from FY 2001 to FY 2006 FTPS have been operating at a PLF ranging between 55% to 67%. The contention of HPGCL that cost of FTPS as pass through as per actual is neither supported by any regulation of HERC or CERC nor by national tariff policy hence it is rejected. **Considering the fact that FTPS generating units have achieved 50.13% PLF in FY 2007-08 (up to January 08) the Commission allows PLF of 50% for the purpose of determining generation tariff for FY 2008-09 and expects the same to be maintained / improved upon till the generating units at FTPS are phased out.**

The Commission notes with concern that as per the maintenance schedules for FY 2007-08 (actual availed) and FY 2008-09 (proposed) by HPGCL vide letter dated 4/02/2008 PTPS unit 1 which was closed for refurbishment w.e.f. 25/09/2007 for 189 days will now be available w.e.f 15/05/2008 which tantamounts to an abnormal shutdown period and hence loss of generation as well as non recovery of fixed cost corresponding to the quantum of generation from this unit. Further, as per HPGCL's tariff petition dated 29/11/2007 submitted to the Commission PTPS unit 3 was scheduled for R&M during FY 2008-09. However, vide letter dated 4/02/2008 HPGCL has informed that R&M of PTPS unit 3 will not be undertaken during FY 2008-09. Lack of timely R&M not only increases operating expenses but also eats into design margin and life of the plant, machinery and associated equipments. **The Commission reiterates that planned shutdown schedule as per requirement and as intimated to the Commission must be adhered to.**

The Cumulative Utilization Factor (CUF) for estimating generation target for FY 2008-09 in respect of 62.7 MW hydro electric power stations at Yamuna

Nagar & Kakroi, wherein the generation capacity ranges from 0.3 MW (3 units) kakroi, 8 MW each (6 units of Power House A,B & C) and 7.2 MW each (2 units of Power House D), has been considered at 50% in line with the generation target of 275 MUs under consideration of the Central Electricity Authority (CEA) for FY 2008-09.

Table 2.4 provides a summary of the highest level of PLF achieved in the last 8 years in the case of PTPS Unit 1 to 5 and FTPS Unit 1 to 3 while in all other cases viz. PTPS Unit 6 to 8 the reference points are their respective year of Commissioning. HPGCL's proposal for FY 2008-09 and HERC approval of PLFs for FY 2008-09 thereto for various generating units:-

Table 2.4 Plant Load Factor (PLF - %)

Stations	Highest PLF in last 8 years	HPGCL's proposal for FY 2008- 09	HERC's Approval for FY 2008-09
PTPS (Unit 1 to 4)	72.45	70	77
PTPS (Unit 5)	93.68	83	80
PTPS (Unit 6)	92.21	83	80
PTPS (Unit 7)	90.32	85	80
PTPS (Unit 8)	91.24	85	80
FTPS (Unit 1 - 3)	67.32	45	50
DCR TPP (Yamuna Nagar) Units I & II)	-	80	80

2.6 Auxiliary Power Consumption

The performance of HPGCL as per the FPT and the presentation made during the public hearing with regard to auxiliary power consumption reveals a steady improvement from 11.80% in FY 2000-01 to 9.8% in FY 2006-07. However, in FY 2007-08 (up to January) the same is reported at 10.01%. Auxiliary power consumption in excess of 9% for 200 MW and above units and in excess of 11% for less than 200 MW units is viewed as inappropriate management of auxiliaries and ought to be reined - in.

The Commission reviewed the performance of PTPS generating stations up to September 2007 and conveyed to HPGCL that the higher auxiliary consumption of PTPS 1 – 4, PTPS Units 5 & 7 when PLF are more or less the same for PTPS 1 – 4 and substantially higher in respect of PTPS Unit 5 & 7 when compared to FY 2006-07 revealed an unfavorable trend. HPGCL failed to analyze the trend and submit a report to the Commission. HPGCL is

advised to monitor this parameter closely and bring it in line with the national norm to restrict the cost of generation on this count.

The level of auxiliary energy consumption does correlate to higher levels of performance. Thus, the Commission while determining the target level of auxiliary consumption for FY 2008-09 has kept the higher levels of performance in respect of PTPS Units 1 to 4 and FTPS in mind while reckoning with auxiliary consumption for determining generation tariff for FY 2008-09

Table 2.5 provides a summary of the lowest level of auxiliary power consumption achieved in the last 8 years in the case of PTPS (unit 1 to 5) and FTPS (unit 1 to 3) while in all other cases viz. PTPS unit 6 to 8 the reference point is their respective year of Commissioning, HPGCL's proposals for FY 2008-09 and HERC approvals of auxiliary power consumption thereto for various generating units:-

Table 2.5 Auxiliary Power Consumption (%)

Stations	Lowest Achieved in past 8 years	HPGCL's Proposal for FY 2008-09	HERC's Approval for FY 2008-09
PTPS (Units 1 to 4)	11.05	12.5	11.0
PTPS (Unit 5)	8.83	9.4	9.0
PTPS (Unit 6)	8.94	9.4	9.0
PTPS (Unit 7)	8.44	9.0	9.0
PTPS (Unit 8)	7.60	9.0	9.0
FTPS (Unit 1-3)	12.56	14.5	12.5
DCR TPP (Unit 1 & 2)	NA	9.0	9.0
WYC & Kakroi	NA	0.5	0.5

2.7 Specific Fuel Oil Consumption (SFC)

Specific fuel consumption has shown remarkable improvement from 5.97 ml/kWh in FY 2000-01 to 1.7 ml/kwh up to 01/08 for HPGCL as a whole. However, in the case of PTPS Unit 1-4 SFC in FY 2007-08 (up to January 2008) is 2.97 ml/kWh which is marginally higher than 2.92 ml/kWh reported for FY 2006-07. SFC in the case of FTPS Unit 1-3 is still languishing at 8.85 ml/kWh for FY 2007-08 (up to January 08) which is substantially above 4 ml/kWh benchmark set by the Commission for FY 2007-08. However, the Commission is pleased to note the specific fuel oil consumption for PTPS

units 5-8 for FY 2007-08 (up to January 08) which in all cases is remarkably less than the normative value of 2 ml/kWh approved by the Commission.

Keeping in view the sustained efforts being made by HPGCL, the recent performance and the national norms, the Commission has considered the SFC for FY 2008-09.

Table 2.6 provides a summary of the lowest level of specific fuel oil consumption in the last eight years in the case of PTPS unit 1 to 5 and FTPS unit 1 to 3, while in all other cases viz. PTPS (unit 6, 7 & 8) the reference point is their respective year of Commissioning, HPGCL's proposals for specific fuel oil consumption and Commission's approvals thereto for various generating units:-

Table 2.6 Specific Oil Consumption (ml / kWh)

Stations	Lowest Achieved in past 8 years	HPGCL's Proposal for FY 2008-09	HERC's Approval for FY 2008-09
PTPS (Units 1 to 4)	2.92	3.0	2.2
PTPS (Unit 5)	1.08	2.0	2.0
PTPS (Unit 6)	0.54	2.0	2.0
PTPS (Unit 7)	0.85	2.0	2.0
PTPS (Unit 8)	0.95	2.0	2.0
FTPS (Units 1-3)	3.12	9.0	4.0
DCR TPP (1 &2)	NA	2.42 & 3.05	2.0

HPGCL needs to take all possible corrective measures including those recommended by CEA in its energy audit report to rein-in SFC at PTPS (Unit 1 to 4) and FTPS (Unit 1 to 3) to 2ml/kWh or lower.

2.8 Station Heat Rate (SHR)

The Station Heat Rate (SHR) of the existing generating stations of HPGCL excluding the recently commissioned PTPS unit 7 & 8 is much higher than the norms adopted by the CERC for determining fuel / variable cost of the central generating thermal stations including the older units.

An analysis of the SHR (upto January 2008) data submitted by HPGCL reveals that the desired levels of SHR has not been achieved in the case of PTPS Unit 1-6 and FTPS Unit 1-3. The SHR at PTPS Unit 1-4 in FY 2007-08 (upto January 2008) has deteriorated to 3465 Kcal/kWh from 3341 Kcal/kWh

reported for FY 2006-07. Further, it is no way near the benchmark of 3200 Kcal set by the Commission for FY 2007-08.

The Commission is pleased to note that SHR at PTPS Unit 7 & 8 are well within the national benchmark of 2500 Kcal/kWh and marginally better than the 2507 Kcal/kWh & 2502 Kcal/kWh reported for FY 2006-07.

The SHR at FTPS unit 1-3 in FY 2007-08 (up to January 2008) reported by HPGCL once again is nowhere near the benchmark set by the Commission i.e. 4825 Kcal/kWh against 4000 Kcal/kWh, which is alarmingly high.

The Commission recognizes the fact that SHR despite regular O&M deteriorates with time and especially in the case of FTPS Unit 1-3 wherein no major R&M work is undertaken in view of the decision to phase out the plant. However, the deviation of the heat rate established by the energy audit from the respective design values plus 10%, and after allowing reasonable margin to account for normal operation vis-à-vis test conditions including some aberrations in the PLF i.e. additional Heat Rate @ 2.5 Kcal/kWh for every 1% reduction in the PLF below 80%, are far in excess. The Commission has dealt with this issue at length in its generation tariff order for FY 2007-08 and do not feel the need to elaborate this aspect all over again.

HPGCL vide its letter dated 4/02/2008 has submitted that refurbishment of PTPS unit 1 by BHEL provides for guaranteed Maximum Continuous Rating (MCR) of 117.8 MW, turbine heat rate of 2018 Kcal/kWh and boiler efficiency of 86%. Consequently, the expected SHR would be around 2346 Kcal/kWh. The Commission has also noted the fact that PTPS unit 2 has already undergone refurbishment and some improvement in SHR can be made in PTPS Unit 3 & 4 by undertaking appropriate annual overhauling. Resultantly, we have considered SHR of 3100 Kcal/kWh in respect of PTPS unit 1– 4 for working out the fuel / variable cost of generation in FY 2008-09.

In respect of PTPS Unit 5 & 6 the Commission has been allowing relaxed norms for quite a few years now. It is a matter of great concern that PTPS Unit 5 & 6 failed to achieve the SHR targets set by the Commission in FY 2005-06, FY 2006-07 and FY 2007-08. The CEA vide memo no. CEA/TETD-TT/2003/N-6 dated 25th April 2005, after conducting energy audit tests of

these units, recommended, “a gross unit heat rate of 2460 Kcal/kWh (80% PLF) for 210 MW kwu type units installed at Panipat. The only possible correction in heat rate shall be applied for part load operation @2.5 Kcal/kWh for every 1% variation in PLF upto the target PLF for these units”. It is pertinent to note that in FY 2007-08 (upto January 2008) both PTPS Unit 5 & 6 have been operating at 96.4% & 91.4% PLF and hence the cushion for ‘part load operation’ is also not applicable. HPGCL was directed to undertake a detailed analysis including energy audit of these units in our order for FY 2007-08 and submit a report to the Commission within three months from the date of the said order along with time-bound remedial measures to improve upon the SHR of these units. Despite the fact that over 10 months have elapsed the directive of the Commission remains un-complied. HPGCL during the public hearing submitted that energy audit of PTPS Unit 5 & 6 has been completed by NTPC and the report is awaited. PTPS Unit 5 & 6 have reported SHR of 2696 Kcal/kWh and 2693 Kcal/kWh respectively in FY 2007-08 (up to January 2008) as against 2600 Kcal/kWh considered by the Commission in FY 2007-08. The Commission expects that in the light of the recommendations of energy audit, HPGCL would take appropriate remedial measures to improve upon the SHR. Consequently, as an exception for FY 2008-09, we allow SHR of 2600 Kcal/kWh for PTPS Unit 5 & 6.

The Commission is pleased to note that the SHR of PTPS Unit 7 & 8 has been reported to be 2465 Kcal/kWh & 2457 Kcal/kWh in FY 2007-08 (up to January 2008) respectively which is well within the national norm as well as the norm set by the Commission. Consequently, the Commission pegs SHR at 2500 Kcal/kWh for PTPS Unit 7 & 8 as per national norm.

DCR TPP unit 1 & 2, as reported by HPGCL, are expected to attain Commercial Operation w.e.f 1/04/2008 and 15/05/2008 respectively instead of earlier reported dates of 1/12/2007 and 28/02/2008. The Commission for determining generation tariff, on a provisional basis, allows SHR of 2500 Kcal/kWh for the above units for FY 2008-09 in line with the national norms.

The Commission has been allowing SHR of 4000 Kcal/kWh in respect of FTPS (unit 1-3) in FY 2007-08. The SHR has varied between 3180 Kcal/kWh attained in FY 1999-2000 to 4325 Kcal/kWh in FY 2006-07. During FY 2007-08 the value ranges from 4176 Kcal/kWh in April 2007 to 5305 Kcal/kWh in

December 2007, with an average SHR of 4825 Kcal/kWh up to January 2008. Thus, there is no consistency in the year to year or month to month SHR of FTSP. As the FTSP Unit 1-3 are expected to be phased out and the fact that no fresh investments in efficiency improvement measures is envisaged, we allow SHR of FTSP Unit 1-3 at 4200 Kcal/kWh in FY 2008-09.

As the Commission has been allowing all justifiably incurred capital & operating expenditures proposed by HPGCL, it expects sustained improvement in the operating parameters including the SHR.

Table 2.7 provides summary of the lowest value of SHR in the last 8 years in case of PTPS units 1 to 5 & FTSP units 1 to 3, while in all other cases viz. PTPS units 6 to 8 the reference point is their respective year of commissioning, HPGCL's proposal for FY 2008-09 and HERC approval thereto for various generation units:-

Table 2.7 Station Heat Rate (K.cal / kWh)

Station	Lowest Achieved in past 8 years	HPGCL Proposal for FY 2008-09	HERC Approval for FY 2008-09
PTPS (Unit 1-4)	3341	3410	3100
PTPS (Unit 5)	2758	2703	2600
PTPS (Unit 6)	2748	2704	2600
PTPS (Unit 7)	2507	2500	2500
PTPS (Unit 8)	2502	2500	2500
FTSP (Units 1- 3)	3180	4577	4200
DCR TPP (1&2)	NA	2517 & 2542	2500

2.9 Energy / Variable Charge

The Energy / variable charge has been calculated based on the parameters approved by us for FY 2008-09. The details are presented in table 2.8 & 2.9.

Table 2.8 Energy / Variable Charges (FY 2008-09)

Parameters	Unit	Derivation	TDL TPS							
			Unit 1	Unit 2	Unit 3	Units 4	Unit-5	Unit-6	Unit-7	Unit-8
Gross Generation	MU	A	795	742	742	742	1471.68	1471.68	1752	1752
Auxiliary Energy Consumption	%		11%	11%	11%	11%	9.00%	9.00%	9.00%	9.00%
Generation (Ex-bus)	MU	A1	708	660	660	660	1339.23	1339.23	1594.32	1594.32
Station Heat Rate (SHR)	Kcal/kwh	B	3100	3100	3100	3100	2600	2600	2500	2500
Specific Oil Consumption	ml/kwh	C	2.20	2.20	2.20	2.20	2.0	2.0	2.00	2.00

Gross Calorific Value of Oil	Kcal/litre	D	9991	9991	9991	9991	9991	9991	9991	9991
Gross Calorific Value of Coal	K.cal/Kg	E	3929	3929	3929	3929	3929	3929	3929	3929
Overall Heat	G.cal	F=(A*B)	2464500	2300200	2300200	2300200	3826368	3826368	4380000	4380000
Heat from Oil	G.cal	G=(A*C*D)/1000	17474	16309	16309	16309	29407	29407	35008	35008
Heat from Coal	G.cal	H= (F-G)	2447026	2283891	2283891	2283891	3796961	3796961	4344992	4344992
Oil Consumption	KL	I=G*1000/D=A*C	1749	1632	1632	1632	2943	2943	3504	3504
Coal Consumption	MT	J=(H*1000/E)/0.98	635522	593154	593154	593154	986116	986116	1128446	1128446
Cost of Oil per KL	Rs/KL	K	23318	23318	23318	23318	23318	23318	23318	23318
Cost of Coal (inc LADT)	Rs/MT	L	2294.2	2294.2	2294.2	2294.2	2294.2	2294.2	2294.2	2294.2
Total Cost of Oil	Rs .Mln	M=(K*I)/10^6	41	38	38	38	68.63	68.63	81.71	81.71
Total Cost of Coal	Rs.Mln	N=(J*L)/10^6	1458	1361	1361	1361	2262.35	2262.35	2588.88	2588.88
Total Fuel Cost	Rs.Mln	O=M+N	1499	1399	1399	1399	2330.98	2330.98	2670.59	2670.59
Fuel Cost/Kwh	Rs.	P=O/A1	2.12	2.12	2.12	2.12	1.74	1.74	1.68	1.68

Table 2.9 Energy / Variable Charges (FY 2008 – 09)

Parameters	Unit	Derivation	FTPS			DCR TPP	DCR TPP	WYC
			Unit 1	Unit 2	Unit 3	(I)	(II)	
Gross Generation	MU	A	241	241	241	2102.00	2102.00	275
Auxiliary Energy Consumption	%		12.50%	12.50%	12.50%	9.00%	9.00%	0.50%
Generation (Ex-bus)	MU	A1	210.875	210.875	210.875	1912.82	1912.82	273
Station Heat Rate (SHR)	Kcal/kwh	B	4200	4200	4200	2500	2500	NA
Specific Oil Consumption	ml/kwh	C	4.00	4.00	4.00	2.00	2.00	NA
Gross Calorific Value of Oil	Kcal/litre	D	10000	10000	10000	9991	9991	NA
Gross Calorific Value of Coal	K.cal/Kg	E	4042	4042	4042	3929	3929	NA
Overall Heat	G.cal	F=(A*B)	1012200	1012200	1012200	5255000	5255000	NA
Heat from Oil	G.cal	G=(A*C*D)/1000	9640	9640	9640	42002	42002	NA
Heat from Coal	G.cal	H= (F-G)	1002560	1002560	1002560	5212998	5212998	NA
Oil Consumption	KL	I=G*1000/D=A*C	964	964	964	4204.00	4204.00	NA
Coal Consumption	MT	J=(H*1000/E)/0.975 for FTPS & 0.98 for DCR TPP	254396	254396	254396	1353878	1353878	NA
Cost of Oil per KL	Rs/KL	K	27325	27325	27325	23318	23318	NA
Cost of Coal (inc LADT)	Rs/MT	L	2649.22	2649.22	2649.22	2294.2	2294.2	NA
Total Cost of Oil	Rs .Mln	M=(K*I)/10^6	26.34	26.34	26.34	98.03	98.03	NA
Total Cost of Coal	Rs.Mln	N=(J*L)/10^6	673.95	673.95	673.95	3106.07	3106.07	NA
Total Fuel Cost	Rs.Mln	O=M+N	700.29	700.29	700.29	3204.1	3204.1	NA
Fuel Cost/Kwh	Rs.	P=O/A1	3.32	3.32	3.32	1.68	1.68	NA

2.10 Transit loss of coal:

As reported by HPGCL the status of loss of coal in transit is summarised in the table below:

Units	HERC Approval FY 2006-07	HPGCL Actual FY 2006-07	HERC Approval FY 2007-08	HPGCL Achieved FY 2007-08 (upto Dec 08)
PTPS (%)	2.5	3.02	2	4.61
FTPS (%)	2.5	3.34	2.5	4.80

HPGCL has sought 3.02% for PTPS and 3.50% for FTPS for FY 2008-09. It was revised during the public hearing to 4.61% (for PTPS & DCR TPP) and 6.32% (for FTPS). As is clear from the table that the loss of coal in transit instead of decreasing have actually gone up and is nowhere near the national non – pithead norm of 0.8%. HPGCL attributed the increasing trend to change in railways stipulation for charging freight from carrying capacity (CC) + 2 tonnes to CC + 7 tonnes. Thus despite the fact that not more than 60 MT good quality coal can be loaded in a single wagon HPGCL has to pay for 65 MT. The Commission, in its generation tariff order for FY 2006-07, directed HPGCL to reduce the transit loss to 1% within three years time. Thus, the Commission determined a three year trajectory with an annual reduction of 0.5%. The Commission further directed HPGCL to take up the issue at the highest level and take all possible steps (including consultation with other powerhouses in the region who have successfully brought down their coal transit loss) to reduce it to an acceptable level. However, no effort seems to have been made by HPGCL in this regard.

During the public hearing HPGCL submitted that in case of FTPS the coal transit loss is higher due to the fact that the quality of coal is better. However, a perusal of the GCV (kCal/Kg) of coal presented by HPGCL reveals the fact that GCV of coal received at PTPS in FY 2006-07 was 3995 kCal/Kg while it was 3932 kCal/Kg at FTPS. During FY 2005-06 as well as FY 2007-08 the difference between the GCV of coal received at PTPS and FTPS is not

significant i.e. 4109 kCal/kg & 4083 kCal/kg respectively in FY 2005-06 and 3927 kCal/kg & 4040 kCal/kg in FY 2007-08 (up to January 2008) . Whereas, the cost of coal as proposed by HPGCL is Rs. 2336.83 / MT in the case of PTPS and Rs. 2639.31/ MT (against April – September 2007 average of 2673.94 @ 3.54% transit loss) at FTPS. Thus, HPGCL needs to examine this issues and submit a report to the Commission. **The Commission directs HPGCL to examine the issue of coal cost at PTPS and FTPS vis – a-vis their respective GCV and submit a report to the Commission at the earliest. The Commission once again directs HPGCL to take up the issue at the highest level and also depute very senior level officers to attend coal linkage committee meeting in order to ensure coal linkage from better coal mines and prone to lesser pilferage enroute.**

We, in light of the above and considering the fact that the actual coal transit loss is in excess of 4% allow 2% coal transit loss for PTPS & DCR TPP and 2.5% for FTPS for the purpose of arriving at the cost and volume of coal to be allowed for FY 2008-09. **The Commission directs HPGCL to take all possible measures to reduce the coal transit loss to the national non – pithead norm of 0.8% by end of FY 2008-09.**

The Gross Calorific Value (GCV) of coal and fuel oil is based on the average value of Gross Calorific Value during April 2007 to September 2007 as per Annexure B-2 of the generation tariff application. The basic price of coal has been worked out after considering the weighted average rates as per the April 2007 to September 2007 invoices submitted by HPGCL. LADT and railway freight as per actual have been added to the basic rate to arrive at the cost (Rs / MT) of coal for FY 2008-09. **HPGCL is directed to inform the Commission if LADT is applicable for FY 2008-09 as well as the financial impact on delivered cost of coal in Haryana in case LADT is substituted by any other tax/levy.**

The allowed energy charge(s) is subject to fuel price adjustment, if any, due to changes(s) in the price of coal /oil during FY 2008-09 and their respective Gross Calorific Value(s) with reference to the approved fuel cost and GCV indicated in table 2.8 & 2.9. The fuel price adjustments shall be made on a quarterly basis by HPGCL on the basis of GCV of coal / oil received and burnt and their respective landed cost(s) as per the CERC FPA formula including coal transit loss allowed by the Commission. HPGCL shall not file any

separate petition with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with the HERC (Conduct of Business) Regulation 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission.

2.11 Fixed Cost

The various elements of fixed cost namely operation and maintenance (O&M) charges; depreciation, interest and finance charges on loans, interest on working capital and return on equity are discussed in the paragraphs that follow.

2.12 Operation & Maintenance (O&M) Expenses

The O&M charges comprise of Repair and Maintenance charges (R&M), Employees cost and Administrative expenses. Efficiencies are derived gradually over a long period of time; hence R&M efforts should start from day one after commissioning to address any shortfall in performance with reference to the design parameters.

The guiding factor for working out O&M expenses should have been the actual level of such expenses incurred during the preceding three years for the existing stations escalated by an appropriate factor to account for inflation. However, in the absence of authentic unit wise data, O&M expenses approved by the Commission in its previous order have been considered for PTPS units 1-4, FTPS unit 1-3 and WYC & Kakroi powerhouses. These have been escalated by 4% to account for inflation. For other units of PTPS i.e. unit 6, 7, 8 and DCR TPP 1 & 2 the O&M expenses have been worked out as per the national norm i.e. Rs.1.217 million per MW. HPGCL also proposed the same.

The O&M expenses claimed by HPGCL and allowed by the Commission are presented in table 2.10.

Table 2.10 O&M Expenses (FY 2008-09)

	PTPS					DCR TPP	FTPS	WYC & Kakori
	Unit 1-4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 1&2	Unit 1-3	
HPGCL Proposal for FY 2008-09 (Rs. mln)	670.8	320.2	255.57	304.25	304.25	365.1 & 365.1	482.57	89.98
HERC Approval for FY 2008-09 (Rs mln)	670.8	320.19	255.57	304.25	304.25	365.1 & 365.1	482.57	89.98

2.13 Depreciation

Para 5.3 (C) of the Tariff policy issued by the Ministry of Power, GOI, on 6/01/2006 states that CERC may notify the rates of depreciation in respect of Generation and Transmission assets. The rate of depreciation so notified would be applicable for the purpose of tariff as well as accounting. The CERC regulations on depreciation as contained in the CERC (Terms and Conditions of Tariff) Regulations 2004 – No L-7 / 25 (5) / 2003 – CERC dated 26/03/2004 provides for Advance Against Depreciation (AAD), which has been considered by the Commission while allowing depreciation based on CERC notified rates which is significantly lower than the rates specified by the Government of India, Ministry of Power vide its notification No. S.O. 266 (E) dated 23/01/1992 and as amended vide notification No. S.O. 266 (E) dated 29/03/1995, and hence the amount allowed as depreciation is also much lower than that amount proposed by HPGCL.

In the instant case the loan repayment during FY 2008-09 amounts to Rs. 3956.26 million which is higher than 1/10th of loans outstanding at the beginning of the FY 2008-09 i.e. Rs. 3843.2 million, thus the latter amount has been considered for working out AAD in line with CERC methodology. The AAD as per CERC methodology works out to Rs. 1565.4 million. The depreciation during FY 2007-08 has been estimated by the Commission as Rs. 2286 as against Rs. 4609.7 million claimed by HPGCL.

HPGCL should ensure that the proposed repayments are made on time. In case it does not make the proposed repayments during FY 2008-09, any excess amounts allowed during the current year shall be recovered in the subsequent ARR with interest. The depreciation and AAD allowed for

repayment of Capex loans should not be diverted and HPGCL should provide documentary support of payment in the next ARR.

HPGCL is directed to submit a report showing year wise cumulative depreciation and instrument wise cumulative repayment of loans for capital works up to 31.3.2008 within 3 months of this order to ensure compliance of the 1st proviso to Regulation 56 (ii) b of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004.

The Commission, in line with the CERC regulations, has allowed AAD to be recovered as part of the fixed cost. HPGCL shall create an AAD reserve. In future, when depreciation amount exceeds loan repayment amount, the reserves shall be drawn down to meet depreciation requirement, thereby reducing the cost passed on to the consumers.

2.14 Interest and Finance Charges on Loan

HPGCL has claimed Rs. 3956.26 million as interest on long-term loans for FY 2008-09 including Rs. 70.2 million on account of R&M of PTPS Unit 3 which as submitted by HPGCL during the public hearing has been deferred. The Commission examined the details of all the long-term loans including repayments and drawls and respective interest rates. Based on the loans arrived at as the difference between opening and closing balance during FY 2007-08 and the respective interest rates, the Commission allows Rs. 3792.5 million as interest & finance charges on loans during FY 2008-09.

2.15 Interest on Working Capital

Interest on working capital is computed on normative basis. The Commission computed the working capital requirement on the basis of following elements.

- i) Cost of coal stock for 2 months
- ii) Cost of oil stock for 2 months
- iii) O&M expenses for 1 month
- iv) Maintenance spares at 1% of the historical cost escalated @ 6% per annum.
- v) Receivable equivalent to 2 months of projected fixed and variable charges for FY 2007-08

In their objections against the interest on working capital at SBI PLR proposed by HPGCL, the distribution companies i.e. DHBVNL & UHBVNL have submitted that the rate of interest is hovering from 8.5% to 10.75% hence interest on working capital allowed to HPGCL should be computed at 10%.

The Commission has noted the objections filed by the distribution companies. On the normative working capital worked out on the basis of the above, interest is allowed @ 10.5% per annum in light of the rate(s) at which HPGCL has raised short term resources in the recent past. The prime lending rates of nationalized banks are hovering around 12.75% while HPGCL is able to raise short term resources at 200 basis points below the prime lending rates resultantly, Rs. 943.49 million is allowed as interest on normative working capital as against Rs. 1500.36 million proposed by HPGCL. The computation of normative working capital and interest thereon is presented in table 2.11:

Table 2.11 Normative Working Capital FY 2008-09 (Rs. million)

	PTPS					DCR TPP	FPS	WYC & Kakroi
	Unit 1 to 4	Unit 5	Unit 6	Unit 7	Unit 8	1 & 2	Units 1-3	
Cost of Coal Stock for 2 months	923.5	377.06	377.06	440.81	440.81	1035.36	336.98	0
Cost of Oil stock for 2 months	25.83	11.44	11.44	13.62	13.62	32.68	14.48	0
O&M expenses for one month	55.9	26.68	21.30	25.35	25.35	60.85	40.21	7.5
Spares 1% of historical cost escalated by 6% #	38.12	31.15	131.2	106.32	106.32	254.4	8.8	15.63
Receivables (2 months of Fixed & Variable charges allowed)	1220.99	507.13	684.81	756.17	756.17	1831.97	460.7	53.49
Total Normative Working Capital	2264.35	953.46	1225.8	1342.27	1342.27	3215.26	861.17	76.62
Interest on working capital @ 10.5. %	237.76	100.11	128.71	140.94	140.94	337.6	90.42	8.04

Capital spares allowed facilitating minimum risk and outage time.

2.16 Return on Equity (ROE)

HPGCL has claimed Rs. 1668.4 million @ 14% as return on equity for FY 2008-09. On the issue of 14% ROE UHBVNL & DHBVNL in their objections submitted to the Commission stated that the ROE claimed by HPGCL is higher keeping in view the financial position of the distribution companies. Both the distribution companies have claimed 10% ROE while HVPNL has claimed 8% ROE. They proposed that ROE of HPGCL should be in line with HVPNL. DHBVNL further submitted that ROE should be calculated based on the opening proposed equity as on 1st April 2008 and not on the basis of closing proposed equity as on 31st March 2009. Consequently, ROE @ 8% i.e. Rs. 926.11 million should only be allowed to HPGCL.

We have carefully considered the above contentions of the distribution companies and is of the considered view that adequate ROE is essential to augment the internal accruals of the company and hence in line with the national norm allow 14% ROE amounting to Rs. 1637.4 million.

2.17 Internal Audit

In reply to the Commission's letter dated 14/01/2008 HPGCL submitted that they have appointed internal auditors for conducting audit for the year 2004-05 to FY 2006-07. Further HPGCL is in the process of appointing four Accounts Officers directly and 14 Accountants & 83 Accounts Clerks through Staff Selection Commission Haryana. All the vacancies stand advertised and recruitment process is expected to be completed by March 2008. With the recruitment of above referred officers / staff, separate internal audit wing shall be created / strengthened.

The Commission has noted the above submission of HPGCL and observes as follows. The Annual Accounts for FY 2005-06 (audited by statutory auditors and awaiting supplementary audit by the office of C&AG India) submitted to the Commission vide letter dated 8/11/2007 has been adversely commented upon by the statutory auditors including the fact that the company has not maintained proper records showing full particulars, including quantitative details, situation, identity number, date of acquisition, depreciated value of assets and location of fixed assets at all its units and Head Office.

Further Pension Fund amounting to Rs. 1418.223 million had not been deposited by the Corporation till 31/03/2006. Further, appointing internal auditors for conducting audit for the year 2004-05 to FY 2006-07 does not serve much purpose and would be academic in nature i.e. undertaking internal audit after closure of accounts. HPGCL is advised to ensure that an effective internal audit department headed by a chief auditor is in place at the earliest. The internal audit of all the units of HPGCL including the Head Office is undertaken on a concurrent basis. It would be a futile exercise to bolt the stable when horses have run – away.

2.18 Fixed Expenses for FY 2008-09

A summary of the fixed expenses approved by us is presented in table 2.12.

Table 2.12 Fixed Expenses for FY 2008-09 (Rs. Million)

	PTPS					DCR		FTPS	WYC & Kakroi
	Unit 1-4	Unit 5	Unit 6	Unit 7	Unit 8	1	2	Units 1-3	
O&M Expenses	670.8	320.19	255.57	304.25	304.25	365.1	365.1	482.57	89.987
Depreciation	181.05	83.77	358.96	384.68	384.68	410.995	410.995	24.92	45.92
Interest on Term Loan	201.47	93.91	385.179	431.89	431.89	1074.86	1074.86	28.98	69.46
Interest on Working Capital @ 10.5%	237.76	100.11	128.71	140.94	140.94	168.8	168.8	90.42	8.04
Return on Equity @ 14%	118	28	246	265	265	336	336	20	23.4
Fixed Cost	1409.08	625.98	1374.4	1526.8	1526.8	2355.76	2355.76	646.89	236.81
Advance Against Depreciation	243.38	93.21	421.07	360.0	360.8	0.13	0.13	29.06	57.65
Total Fixed Cost	1652.46	719.19	1795.47	1886.8	1887.6	2355.89	2355.89	675.95	294.46

3 CONCLUSION

HPGCL is not adhering to the overhauling and R&M schedules in respect of the old thermal units resulting in their poor performance. The refurbishment of PTPS unit – 1 has been re-scheduled time and again and its PLF had dropped to mere 32.3% before the unit was finally shutdown for refurbishment w.e.f. 24/09/2007 for a period of five months. The shutdown period is facing abnormal time extension due to delay in the receipt of critical material. The proposed refurbishment of PTPS unit – 3 during FY 2008-09 has been indefinitely postponed and it is likely to meet the same fate as PTPS unit – 1. HPGCL should improve their planning and implementation in respect of overhauling and R&M activities and ensure zero gaps in executing the plans.

HPGCL should, as a matter of routine, carry out energy audit of a unit which is showing deterioration in SHR and auxiliary power consumption and take remedial measures on a regular basis. HPGCL is directed to create an energy audit group of trained engineers for this purpose. HPGCL also needs to focus on preventive maintenance and reduction in forced outages.

The transit loss of coal has shown an alarming increase in FY 2007-08. HPGCL is advised to take up the matter with the Ministry of Coal & Railway at level of C.M. Haryana immediately regarding transit loss and quality of coal. The meetings of coal linkage committee should be attended by very senior level officers so that coal linkages from good collieries with washeries and hence better coal quality and lower incidence of theft are got allocated. HPGCL may also consider purchase of washed / imported coal and getting allocation of a coal block on their own or in partnership with a neighboring state.

Based on the parameters approved by us, the tariffs for FY 2008-09 are as under:

Table 3.1 Approved Tariffs (FY 2008-09)

	PTPS (Unit 1-4)	PTPS (Unit 5)	PTPS (Unit 6)	PTPS (Unit 7)	PTPS (Unit 8)	DCR TPP (Unit 1&2)	FTPS (Unit 1-3)	WYC & Kakroi
Energy Charges (Rs./kWh)	2.12	1.74	1.74	1.68	1.68	1.68	3.32	0
Fixed Charges (Rs./kWh)	0.61	0.54	1.34	1.18	1.18	1.23	1.07	1.06
Total Charges (Rs./kWh)	2.73	2.28	3.08	2.86	2.86	2.91	4.39	1.06

The generation tariff(s) approved for FY 2008- 09 shall be implemented w.e.f 1st April 2008.

HPGCL shall complete all procedural requirements to ensure implementation from the stipulated date. The order shall, unless amended or revoked by the Commission, continue to be in force.

Date: 21 April 2008

Place: Panchkula

**T. S. Tewatia
(Member)**

**Bhaskar Chatterjee
(Chairman)**

In regard to Station Heat Rate (SHR) for PTPS Unit – 1-6, FTPS Unit 1-3, transit loss of coal and return on equity, I express difference of opinion as under:-

(1) Station Heat Rate:

In the Commission's order on generation tariff for FY 2006-07, HPGCL was directed to ensure continuous improvement in the Station Heat Rate of PTPS 1 – 4 and PTPS Unit 5 so that, beginning with the next financial year the 'cushion' allowed during the transition phase, beginning with FY 2004-05, can be rolled back.

PTPs Unit -1 is under-going refurbishment w.e.f. 25/09/2007 and as per parameters guaranteed by BHEL, the turbine heat rate shall be 2018 Kcal/kWh and boiler efficiency shall be 86% after refurbishment. This amounts to a design Station Heat rate of 2347 Kcal/kWh. After allowing 10% over the said design Station Heat Rate as per standard of operation norms set by CEA, the Station Heat Rate of PTPS Unit – 1 works out to 2582 Kcal/kWh. Keeping in view that PTPs Unit – 2 has been refurbished in the recent past and the Station Heat Rate of PTPS Unit 3 & 4 can be improved upon by strict adherence to the annual overhauling & preventive maintenance schedule, I approve a overall Station Heat Rate of PTPS Unit 1 -4 at 2970 Kcal/kWh in line with the road map set out in my note of dissent on Commission's order on generation tariff for FY 2006-07.

In the Commission's order on generation tariff for FY 2006-07, I had approved a Station Heat Rate of 2500 Kcal/kWh for PTPs Unit 5 & 6 based on the logic outlined in my note of dissent to the said order. The Commission in its order on generation tariff for FY 2007-08 directed HPGCL to undertake energy audit of above Units again and take remedial measures in light thereof to conserve fuel. However, I regret to record that the opportunity to benefit from the energy audit exercise has been lost as the lion part of FY 2007-08 was lost in getting the same organized. The Commission awaits the submission of above energy audit report which in terms of the said directive was required to be submitted within 3 months of the date of said order. I, therefore, approve a Station Heat Rate of 2500 Kcal/kWh for PTPS Unit 5&6 as per CERC norm which is in line with my note of dissent to Commission's order on generation tariff for FY 2006-07.

HPGCL has proposed to phase out FTPS Units 1-3 by 2010 – 11. The Station Heat Rate of 4000 Kcal/kWh for these units is already liberal when compared to that allowed by other SERCs for similar units. Therefore, I approve a Station Heat Rate of 4000 Kcal/kWh for FTPS Unit 1-3 in line with the provision on this count in the Commission's order on generation tariff for FY 2007-08.

(2) Transit Loss of Coal:

HPGCL has reported 4.61% loss of coal in transit for PTPS for FY 2007-08 (up to December, 2007) as against 3.02% (actual) for FY 2006-07. Similarly, they have reported 6.32% loss of coal in transit for FTPS for FY 2007-08 (up

to December, 2007) as against 3.34% (actual) for FY 2006-07. Thus it is quite clear that the performance of HPGCL to reduce the loss of coal in transit so as to bring it in line with the norm applicable for non- pit head stations (0.8%) has been unsatisfactory. While dealing with the loss of coal in transit in the Commission's order on generation tariff for FY 2006-07, I approved coal transit loss of 2.3% to be gradually reduced to the national norm (0.8%) over next three years in my note of dissent to the above order. Therefore, I approve transit loss of coal for FY 2008-09 equal to 1.3% in line with the trajectory set in the said order.

(3) Return on Equity:

UHBVNL and DHBVNL have objected to 14% Return on Equity claimed by HPGCL in their ARR filing for FY 2008-09. They have stated that ROE claimed by HPGCL is higher keeping in view their financial position. They have submitted that HPGCL be allowed ROE of 8% in line with HVPNL's submission in its ARR filing for FY 2008-09.

Keeping in view the above contention of the Distribution Companies and the fact that the rising cost of power has cascading impact on their financial health and, further, keeping in view the fact that the financially distressed Distribution Companies may cause a rupture in the inter – utilities finances adversely affecting the entire power sector in the state, I approve a ROE of 12% in line with the level allowed for FY 2007-08.

CONCLUSION:

The improved Station Heat Rate for PTPS unit 1- 6, FTPS unit 1-3, lesser loss of coal in transit and lesser amount of Return on Equity approved by me will result into reduced cost per unit of generation, apart from conserving the fast depleting reserve of coal. It will result in reduced retail tariff and thus help lessen the burden of electricity consumers of Haryana.

(T.R. Dhaka)
Member

ORDER

In terms of Section 92 (3 & 4) of the Electricity Act 2003 (Act 36 of 2003), the majority view of Sh. Bhaskar Chatterjee, Chairman and Sh. T.S. Tewatia, Member, will be the order of the Commission.

This order is signed, dated and issued by the Haryana Electricity Regulatory Commission on 21st April 2008.

Date: 21.04.2008

Place: Panchkula

T. S. Tewatia
(Member)

T.R.Dhaka
(Member)

Bhaskar Chatterjee
(Chairman)

ANNEXURE – 1: LIST OF DIRECTIVES NOT FULLY IMPLEMENTED

The Commission has issued a number of directives to HPGCL in its previous orders on Generation Tariff for FY 2004-05, FY 2005-06, FY 2006-07 and FY 2007-08 . HPGCL has not yet fully complied with many directives. All such directives are given below.

1. The Commission directs HPGCL to take all possible steps to progressively reduce the transit loss of coal to nationally acceptable level as it amounts to an avoidable burden on the electricity consumers of Haryana (Para 4.11 Pg. 27, FY 2004-05 order).
2. The Commission directs HPGCL to get a FAR prepared and audited within one-year from the date of this order and submit a copy to the Commission (Para 4.14, Page 29 FY 2004-05 order).
3. The Commission directs HPGCL to provide unit wise details of employees' expenses including break-up of basic pay, DA, terminal benefits etc. method of calculation and basis of projection adopted. Similarly, wherever 'cost & rate' allowed by the Commission, so far are not based on 'norms', detailed break-up must be provided. The filing of proposed tariff must include Unit wise variable charges (rate), Unit wise fixed charges (rate) or amount proposed to be recovered. (Para 4.3 Pg. 22, FY 2005-06 order).
4. HPGCL is directed to implement the recommendations of the Energy Audit Reports and take all necessary measures to reduce auxiliary power consumption to the national norms. (Para 4.7 Pg.26, FY 2005-06 order)
5. HPGCL is directed to take all necessary measures to reduce specific oil consumption to the national norms. (Para 4.8 Pg.27, FY 2005-06 order).
6. The Commission directs that planned shutdown schedule as intimated to the Commission with corresponding capital expenditure (both loan and equity) must be adhered to. These units, after intensive R&M and annual overhauling, must operate at a PLF of over 80% (Para 3, Page No. 14 FY 2007-08 order).

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7. HPGCL is directed to undertake a detailed analysis including energy audit of PTPS units 5-6 and submit a report to the Commission within three months from the date of this order along with time – bound remedial measures to improve upon the SHR of these units (Para 1, Page No.20, FY 2007-08 order).
 8. The Commission directs HPGCL to take up the matter of transit loss of coal at the highest level and take all possible steps, (including consultation with other powerhouses in the region who have successfully brought down their coal transit loss) to reduce it to an acceptable level (Para 1, Page no.24, FY 2007-08 order).
 9. HPGCL is advised to take necessary steps to strengthen its internal audit and inform the Commission accordingly (Para 1, Page No.31, FY 2007-08 order).
 10. The Commission advises HPGCL that in future, it must submit reasons for non compliance within the stipulated time period along with a request for waiver duly flagging the time period within which the same shall be complied with (Para 2, Page No.31, FY 2007-08 order).
 11. HPGCL is directed to monitor running hours of all auxiliary motors vis –a- vis running hours of generating units to find out if any motor is kept running when not required and also carry out energy audit of auxiliary motors in respect of rated consumption on applicable load vis –a-vis actual power drawn by the motors and take remedial measures whenever required.

ANNEXURE – 2 LIST OF NEW DIRECTIVES

The Commission has given the following new directives in this order.

1. The Commission directs HPGCL to examine the issue of coal cost at PTPS and FTPS vis – a-vis their respective GCV and submit a report to the Commission at the earliest. The Commission once again directs HPGCL to take up the issue at the highest level and also depute senior level officers to attend coal linkage committee meeting in order to ensure coal linkage from better coal mines and prone to lesser pilferage enroute .
2. The Commission directs HPGCL to take all possible measures to reduce the coal transit loss to the national non – pithead norm of 0.8% by end of FY 2008-09.
3. HPGCL is directed to inform the Commission if LADT is applicable for FY 2008-09 as well as the financial impact on delivered cost of coal in Haryana in case LADT is substituted by any other tax/levy.
4. HPGCL is directed to submit a report showing year wise cumulative depreciation and instrument wise cumulative repayment of loans for capital works upto 31.3.2008 within 3 months of this order to ensure compliance of the 1st proviso to Regulation 56 (ii) b of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004.