



**COMMISSION'S ORDER  
ON  
GENERATION TARIFF FOR  
HARYANA POWER GENERATION CORPORATION LIMITED  
FOR FY 2009-10**

**May, 18<sup>th</sup> 2009**

**HARYANA ELECTRICITY REGULATORY COMMISSION**

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

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

**HERC ORDER**  
**ON**  
**GENERATION TARIFF FOR**  
**HARYANA POWER GENERATION CORPORATION LTD.**  
**FOR FY 2009-10**

**CASE No: HERC / PRO– 1 OF 2009**

**May 18<sup>th</sup>, 2009**

**PANCHKULA**

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

**CASE NO: HERC / PRO - 1 OF 2009**

**DATE OF ORDER: May 18<sup>th</sup>, 2009**

In the matter of application filed by Haryana Power Generation Corporation Limited (HPGCL) for approval of generation tariff for FY 2009-10.

**Present:**

<b>Shri Bhaskar Chatterjee</b>	<b>Chairman</b>
<b>Shri T.S. Tewatia</b>	<b>Member</b>
<b>Shri Rohtash Dahiya</b>	<b>Member</b>

**On behalf of  
HPGCL:**

Shri Sanjeev Kaushal	Managing Director
Shri J.C. Kinra	COO
Shri. Y.N. Chugh	Director / Tech
Shri D.C. Arya	FA/Hqr.

**On behalf of  
Interveners:**

Shri Sampat Singh  
Shri. R.S. Chaudhary  
Shri Balbir Singh Malik  
Shri S.S. Chaudhry

**On behalf of  
HERC Staff:**

Shri Surjeet Singh	Secretary
Shri Sanjay Varma	Director / Tariff
Smt. Surbhi Jain	Jt. 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 generation tariff in the case of Haryana Power Generation Corporation Limited (HPGCL), a generating company as defined under Section 2(28) of the Electricity Act, 2003 (EA 2003), is determined by the Haryana Electricity Regulatory Commission (the Commission) in view of sub section 1 (a) of Section 86 and Sub section 1 (a) of Section 62 of EA 2003.

### **1.2 Applicability of the Electricity Act 2003 in Haryana**

The Government of Haryana, in exercise of the powers conferred by clause (d) of section 172 of the EA - 2003 , vide its notification no. 1/4/2003 -1 Power dated 8/09/2003 notified 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. Resultantly, EA 2003 came into force in the State of Haryana w.e.f. 10/12/2003.

### **1.3 Tariff Filing Directive**

The Commission vide memo no. HERC/D(Tariff)/ARR-09-10/1546-49 dated 3/10/2008 directed HPGCL to file generation tariff application by 1<sup>st</sup> November 2008 for its consideration and approval. HPGCL filed the Generation tariff application for FY 2009-10 vide memo no. 160/HPGC/FIN/Reg-286 dated 31/10/2008. In conformity with the HERC Tariff Regulations, Haryana Power Generation Corporation Ltd. (HPGCL) intimated the Commission vide Memo No. HPGC/FIN/REG-286/1654 dated 11/11/2008 and HPGC/FIN/REG-286/1679 dated 17/11/2008 that a public notice containing an abstract of its tariff proposal inviting objections/comments/suggestions from the public as well as any interested stakeholders has been inserted in two newspapers having wide circulation in Haryana i.e. Dainik Bhasker (Hindi) dated 7.11.08 and Indian Express dated 7.11.2008 and

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15.11.2008 in English. The last date for the submission of objections/comments/suggestions has been fixed as 7.12.2008.

The Commission conducted a preliminary analysis of the petition submitted by HPGCL and vide letter no. 2136/HERC/SV/2008 dated 8/12/2008 sought clarification / additional information on a number of issues including status of DCR TPP (Unit 1 & 2), coal transit loss, internal audit, backlog of audit account (s), tariff design, actual shutdown of HPGCL generating stations vis – a- vis planned shutdown, rate and methodology of computing depreciation, updated actual performance of HPGCL's generating stations, cost of short term borrowings, delivered cost of coal, R&M activities etc. HPGCL vide memo no. HPGC/FIN/reg – 286/1841 dated 15/12/2008 submitted their reply to the observations of the Commission.

Meanwhile HPGCL vide Memo no. HPGC/FIN/Reg-286/200 dated 4/02/2009 submitted revised Generation Tariff Application for FY 2009-10 in view of the Central Electricity Regulatory Commission (CERC) tariff regulations notification no. L-7/145(160)2008-CERC dated 19<sup>th</sup> January 2009.

The Commission received 96 objections / suggestions to the petition filed by HPGCL. The objections were considered and sent to HPGCL for their reply / clarification. HPGCL vide Memo no. HPGC/FIN/Reg-286/193 dated 20/02/2009 submitted their reply to the objections / comments filed against their petition.

#### **1.4 Public Proceedings**

In accordance with Section 64 of the Act HPGCL published its petition in abridged form providing salient features of their generation tariff application in two newspapers having wide circulation in Haryana, one each in Hindi and English, to ensure public participation. 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 2009-10, sources of availability of the relevant documents and an invitation to the public / interested organizations to file their objections, if any, by 7th December, 2008. The public notice issued by HPGCL appeared in the following newspapers:

**Table 1.1 Public Notice by HPGCL**

<b>Name of Newspaper</b>	<b>Language</b>	<b>Date of Publication</b>
Indian Express	English	7/11/2008 &15/11/2008
Dainik Bhaskar	Hindi	7/11/2008

The Commission issued public notice on 22<sup>nd</sup> & 23<sup>rd</sup> January 2009 informing the public & interested persons / organizations that a public hearing is scheduled for 24th February 2009 at 11.30 A.M in its courtroom in respect of determination of generation tariff for FY 2009-10. The last date for filing objections was fixed at 5.00 P.M. on 10th February 2009. The public notice was issued in the newspapers mentioned in table 1.2.

**Table 1.2 Public Notice by the Commission**

<b>Name of Newspaper</b>	<b>Language / Edition</b>	<b>Date of Publication</b>
Times of India	English / Chandigarh & Delhi	22/01/2009 & 23/01/2009
Dainik Bhaskar	Hindi / Chandigarh, Faridabad, Hisar & Panipat	22/01/2008

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 in Haryana i.e. Uttar Haryana Bijli

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Vitran Nigam Ltd. (UHBVNL) and 96 objection/comments were received from the public.

### **1.5 Public Hearing**

After obtaining additional information and clarification as well as HPGCL's response to the objections filed the Commission scheduled a public hearing on 24th February 2009, in order to provide further opportunity to the objectors to present their views in person before the Commission. HPGCL was invited to make their general presentation and was directed to reply to the specific issues raised by the objectors. The Managing Director of HPGCL made a detailed presentation and also responded to queries and clarifications sought by the objectors and the Commission. The Chief Operating Officer (COO) HPGCL as well as FA/Hqr. HPGCL too dealt with the technical and commercial aspects respectively.

The main issues raised by the interveners to HPGCL's petition included procedural aspects, non compliance of Commission's directives, high coal transit loss as well as non – achievement of technical and financial benchmarks set by the Commission. The objections raised by the interveners, HPGCL's response to them as well as the views of the Commission are presented at Para 2.4 of this order.

## **2 ANALYSIS OF THE TARIFF FILING & COMMISSION'S ORDER**

The major items of expenditure and the operating parameters proposed by HPGCL as per their original filing as well as the revised filing for determination of generation tariff and HERC approvals of the same are discussed in the paragraphs that follow. The Commission has also considered the objections raised by the interveners and reply submitted by HPGCL thereto.

### **2.1 Installed Capacity:**

The installed capacity of HPGCL, as reported by them in their presentation during the public hearing held on 24<sup>th</sup> February 2009, is as per table 2.1.

**Table 2.1 Installed Capacity**

<b>Particulars</b>	<b>Installed Capacity as on 31.03.2009</b>	<b>Date of Commissioning</b>
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. FTPS Unit – 2 (55 MW) has been phased out since September 2008. The other two units are proposed to be phased out by March 2010.	55 MW Unit No.1	22/11/1974
	55 MW Unit No.3	01/04/1981
Panipat Thermal Power Station, Panipat (1X 117.8 + 3 X 110 MW, 2X210 MW + 2X250 MW).  110 MW Unit 1 re – rated to 117.8 MW from November 2008.	Stage–1	
	117.8 MW Unit No.1	01/11/1979
	110 MW Unit No.2	27/03/1980
	Stage – II	
	110 MW Unit No.3	01/11/1985
	110 MW Unit No.4	11/01/1987
	Stage – III	
	210 MW Unit No.5	28/03/1989
Stage – IV		
210 MW Unit No.6	31/03/2001	
Stage – V		
250 MW Unit No .7	29/12/2004	
250 MW Unit No .8	08/04/2005	
Western Yamuna Canal Hydro Project Bhudkalan (Yamunanagar) (6X8 MW and 2X7.2 MW)	<b>Power House A</b>	
	8 MW Unit No 1	29/05/1986
	8 MW Unit No 2	13/06/1986
	<b>Power House B</b>	
	8 MW Unit No 1	15/05/1987
	8 MW Unit No 2	01/06/1987
	<b>Power House C</b>	
	8 MW Unit No 1	27/03/1989
	8 MW Unit No 2	18/04/1989
	<b>Power House D</b>	
7.2 MW Unit No1	16/04/2004	

	7.2 MW Unit No 2	12/05/2004
Micro Hydro Power station, Kakroi	0.30 MW	
DCR TPP 1	300 MW	14/04/2008
DCR TPP 2	300 MW	24/06/2008
Grand Total	2140.2	

## 2.2 Performance of HPGCL Generating Stations

The performance of HPGCL over the years as presented by them during the public hearing held on 24th February 2009 is summarized in table – 2.2.

**Table 2.2 Performance of HPGCL (1998-99 to 2008-09 up to January)**

Particulars	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Installed Capacity (MW)	863.3	863.3	863.3	1073.3	1073.3	1073.3	1337.7	1587.7	1587.7	2187.7	2140.2
PLF (%)	49.24	53.24	49.73	60.8	66.44	74.91	69.46	67.00	78.78	78.94	71.67
Auxiliary Consumption (%)	12.04	11.70	11.80	11.11	10.56	10.47	11.04	10.08	9.80	9.93	9.71
Coal Consumption (Gms/kWh)	838	803	816	789	770	764	784	741	721	735	714
Oil Consumption (ml/kWh)	12.70	6.38	5.97	3.29	3.43	3.35	3.97	3.74	1.85	1.66	1.72
Gross Gen (MUs)	3784	4051	3792	5311	6212	6997	6915	9181	10780	10845	10944
Station Heat Rate (Kcal/kWh)	3522	3772	3505	3432	3365	3318	3287	3074	2894	2916	2780
Transit Loss of Coal (%)	-	-	-	6.58	6.48	4.19	4.23	4.79	3.06	6.0	2.87

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 & 3), as well as specific oil consumption in case of latter power station did not show any substantive improvement.

## 2.3 HPGCL's proposed Generation tariff for FY 2009-10

The proposed cost of power generation for FY 2009-10 as per the tariff petition submitted for consideration of the Commission are presented in table 2.3.

**Table 2.3 HPGCL Proposed Cost of Power Generation (FY 2009-10)**

Parameters	PTPS Panipat	FTPS Faridabad Unit 1&3	DCR TPP 1 & 2	WYC & Kakroi	Total HPGCL
Variable Cost (Rs/kWh)	Unit 1-4: 3.42 Unit 5: 2.57 Unit 6: 2.58 Unit7&8: 2.34	4.49	2.34	-	2.59
Fixed Cost (Rs / kWh Millions)	Unit 1-4: 1.15 Unit 5: 0.54 Unit 6: 1.17 Unit7&8: 1.06	2.57	1.34	1.60	1.30
Total Cost (Rs/kWh)	Unit 1-4: 4.57 Unit 5: 3.11 Unit 6: 3.75 Unit7&8: 3.40	7.06	3.68	1.60	3.89

The revised generation tariff proposal dated 4/02/2009 submitted by HPGCL is presented below:-

**Table 2.4 HPGCL (Revised Cost of Power Generation for FY 2009-10)**

Parameters	PTPS Panipat	FTPS Faridabad Unit 1&3	DCR TPP I & II	WYC & Kakroi	Total HPGCL
Variable Cost (Rs/kWh)	Unit 1-4: 2.52 Unit 5: 2.13 Unit 6: 2.14 Unit7&8: 1.92	5.00	1.49	-	2.0
Fixed Cost (Rs/ kWh)	Unit 1-4: 0.75 Unit 5: 0.63 Unit 6: 1.21 Unit7&8: 1.08	2.71	1.30	1.62	1.11
Total Cost (Rs/kWh)	Unit 1-4: 3.27 Unit 5: 2.76 Unit 6: 3.35 Unit7&8: 3.00	7.71	2.79	1.62	3.11

**HPGCL has revised their FY 2009-10 tariff proposal from an average (for the company as a whole) of Rs. 3.89 / kWh to Rs. 3.11/kWh.**

#### **Capacity Charges (Fixed Cost):**

The Commission in pursuance of Section 61 of the Electricity Act 2003 has notified the Terms and Conditions for Determination of Generation Tariff Regulations, 2008 (Regulation No. HERC/19/2008) on 19/12/2008. As per Regulation 23 (Note iii) the capacity charges shall be paid by the beneficiary (ies) including those outside the region to the generating company every month in accordance with the following formula:

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(a) Total Capacity charges payable to the generating company for the:

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

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

It is evident from the above that the fixed charges are to be recovered on a monthly basis and is independent of the volume of energy generated. However, full recovery of the fixed charges determined by the Commission is subject to 'target availability' which in the instant case, as intra – state Availability Based Tariff has not been introduced in Haryana, is the station wise Plant Load Factor for thermal stations approved by the Commission. HPGCL has not proposed any mechanism for recovery of the fixed cost. Thus, in continuation of the past practice the recovery of fuel as well as fixed expenses is on per unit ex-bus generation basis i.e. single part tariff. **The Commission directs HPGCL to file, from next generation tariff petition, recovery of fixed cost in accordance with regulation 23(Note iii) of the Terms and Conditions for Determination of Generation Tariff Regulations, 2008 notified on 19/12/2008.**

In their presentation during the public hearing held on 24<sup>th</sup> February 2009 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

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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 CERC. Based on these premises HPGCL filed the instant tariff application / revised application for determination of generation tariff for FY 2009-10 i.e. CERC notified operating norms for new Units and for the older Units as per their recent performance. HPGCL emphasized the need for determination of generation tariff on a Multi Year Tariff (MYT) basis in accordance with Section 61 of the Act. Further, while seeking relaxed norms reference was also made to various orders passed by the Appellate Tribunal for Electricity, New Delhi with respect to O&M expenses – to be allowed as per actual subject to prudence check by the appropriate Commission; Station Heat Rate – to be allowed as per actual for generating plants which are being phased out and Plant Load Factor – which is achievable as per availability of machines. Relying on Appellate Tribunal's order dated 10<sup>th</sup> April 2008 in Appeal No. 86 & 87 of 2007, HPGCL contended that if SHR allowed by the Commission is not achievable, then the same would not be in anybody's interest; entity would suffer by not recovering its reasonable cost of supply of electricity and the consumers would not get the right signal about the pricing of the product that they would be using.

The Commission has carefully considered the submissions of HPGCL. It is of the view that baseline actual data is not available, as HPGCL has neither removed the backlog of getting audited its accounts beyond FY 2006-07 nor submitted any cost audit report pertaining to FY 2007-08. The fixed assets register has also not been updated and audited. Consequently, seeking MYT is pre-mature. HPGCL has deliberated at length on relaxed norms on the plea that performance of its older machines has been below the norms for a long period of time.

On the basis of the Appellate Tribunal's order, HPGCL submitted that the Station Heat Rate that they have been able to achieve for the

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respective station should be considered especially for older generating unit. FTPS is to be phased out in FY 2010-11. Therefore total cost of FTPS should be a pass through as per actual. The performance parameters of old units i.e. PTPS 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. The submissions made by HPGCL on the technical parameters including PLF, Station Heat Rate and transit loss of coal have been dealt by the Commission at the relevant paragraphs dealing with these aspects.

#### **2.4 Objections raised by the Interveners & HPGCL's reply thereto:**

In response to the public notice inviting objections / comments on HPGCL's Generation tariff application for FY 2009-10 the Commission received 96 objections. One of the objectors Shri Sampat Singh of Hisar also appeared before the Commission and made oral submissions during the public hearing held on 24/2/2009. Besides the public Uttar Haryana Bijli Vitran Nigam (UHBVNL), the distribution licensee in the northern circles of Haryana, vide their Memo No. Ch-25/GM/RA/N/F-25/Vol-XXII(22) dated 20/02/2009 also submitted their objections on the generation tariff application of HPGCL. A brief synopsis of the written as well as oral submissions along with HPGCL's response to the issues raised is presented below.

**Legal / Procedural aspects:** It was submitted by the interveners that the State Advisory Committee (SAC) constituted by the Commission under section 87 of the Electricity Act 2003 comprises only of ex – officio members. It has no member to represent the interests of Non Domestic, Transport, Agriculture, Labor and Domestic Consumers.

The Commission has considered the above submission. It is of the view that as per the Act the SAC shall constitute of not more than 21 Members. **The existing SAC consists of 17 Members appointed as per the Act and regulations framed under it. The Commission is in**

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the process of further broadening the committee to ensure representations of any left out stakeholder(s) / interest groups etc. to have the benefit, in future, of their views too on various issues relating to the power sector in Haryana.

It was also submitted by the interveners that the public notice issued by the Commission was not given wide publicity. The newspaper i.e. Times of India (Chandigarh edition) and Dainik Bhaskar (Chandigarh edition) which carried the public notice have very limited circulation in Haryana. **The Commission does not agree with the submission that wide publicity was not given to the public notice inviting objections / suggestions. Besides Times of India (English-Delhi & Chandigarh editions) and Dainik Bhaskar (Hindi) which is read in all parts of Haryana, the public notice was also issued by the petitioner in Indian Express (English) and Dainik Bhaskar dated 7/12/2008 (Hindi). Further, the petition as well as the public notice is also hosted on the official website of the Commission as well as of HPGCL. However, the Commission welcomes any alternative suggestions that the stakeholders may put forward to ensure wide publicity of such issues in future.**

**Non – Compliance of Commission’s Directives:** The intervener also raised the issue of non – compliance of Commission’s directives on issues like coal transit loss, fixed assets register, Unit wise details of employees cost, auxiliary power consumption, maintenance schedule, strengthening of internal audit system and non submission of cost records.

To the above, HPGCL submitted their detailed response establishing the status of compliance on each issue mentioned by the interveners. **The Commission has noted the concern of the intervener as well as the reply submitted by HPGCL. At this stage, the Commission is not going into the details submitted by the parties as the directives issued by it are separately monitored to ensure**

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**compliance and the same has no direct bearing on generation tariff decided on normative basis.**

**Coal transit loss:** Objections were raised on the basis of the fact that HPGCL's loss of coal in transit has been higher than the CERC norm of 0.8% (non – pithead generating stations).

To the above, HPGCL has submitted that CERC has not fixed any norm for transit loss of coal; it is to be determined by the State Electricity Regulatory Commission. Further, HPGCL has no control over transit loss of coal.

**The Commission has carefully examined the above contentions of the parties. It is of the view that transit loss of coal exceeding 0.8%, as determined the Commission in its Terms and Conditions of Generation Tariff Regulations, 2008 is a serious issue and needs to be addressed on priority. The Commission is seized with this issue since its first generation tariff order dated 14/05/2004 and while reckoning with fuel cost (coal) it has gradually lowered the percentage of coal lost in transit thereby in line with the National Tariff Policy it has set a trajectory to reduce the same to the normative level. Resultantly, it would be in HPGCL's own interest to take all possible measures including allocation of better coal linkage to rein in coal transit loss.**

**Energy Audit of PTPS Unit 5 & 6:** Objections were raised on the non – implementation of the recommendations of Energy Audit Report of PTPS Units 5 & 6 conducted by NTPC. Thus opportunities of achieving improvement in the operating parameters of these stations were lost. To this HPGCL replied that they have initiated action on the recommendations of energy audit. Consequently, PLF, Auxiliary Power Consumption and Station Heat Rate of PTPS Unit – 6 has improved. As far as PTPS Unit – 5 is concerned HPGCL replied that shutdown of

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this Unit is planned during May 2009 for a period of 40 days and requisite steps shall be taken for this unit at that time.

The Commission has noted the reported improvements i.e. average of 3 months after implementation of the NTPC's recommendations subsequent to the energy audit conducted by them, in the performance of PTPS Unit – 6. **It expects that on a full year basis the operating parameters including Station Heat Rate will be brought in line with the design heat rate with normal deterioration considering the vintage of the plant.** During the public hearing held on 24/02/2009 HPGCL submitted maintenance schedule for PTPS Unit – 5 from 1/05/2009 to 9/06/2009 for up – gradation of C&I System as well as Remaining Life Assessment (R.L.A). **The Commission expects that overhauling of PTPS Unit – 5 shall be carried out as per the schedule and the Station shall be brought back to the acceptable performance benchmark.**

**Interest on Long Term loans for FY 2009-10:** It was submitted by the objectors that on the estimated amount of loans as on 31/03/2009 of Rs. 35561.3 Millions the interest rates are different i.e. ranging from 4.75% to 13.5%. It was also suggested that HPGCL should swap high interest bearing loans with low interest bearing one as the interest rates are declining. To this, HPGCL replied that the average cost of their term loan is competitive i.e. 11.18% as against the present rate of 12.25%. Further, HPGCL would analyze swapping options at every reset date of any loan.

The Commission has examined the contention of the intervener on the issue of term loans availed by HPGCL as well as the reply submitted by them. **The Commission, while allowing interest, examines each individual loan with varying dates of contract, maturity, drawls and repayments. Thus, different loans contracted at different points in time, carry different rates of interest as per the prevailing conditions. Thus the Commission finds no abnormality in the**

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same. **The Commission also notes that HPGCL is pro – active in conducting cost – benefit analysis of swapping its loan with an eye on feasibility of doing so at every reset date.**

**HPGCL's Generation:** The intervener contended that HPGCL's power generation has declined from 13287 MUs in FY 2008-09 to 12472 MUs in FY 2009-10. To this, HPGCL submitted that tariff application is filed on normative basis. Actual generation will be higher than previous year. The normative availability of power for the previous year was 10057 MUs as per the Commission's order dated 8/05/2007. Thus comparatively the actual generation during FY 2009-10 has been proposed higher by 32.11%.

**The Commission agrees with the reply submitted by HPGCL. Further, at times older Units having completed its useful life for example 55 MW FTPS Unit – 2 is phased out which may cause a temporary dip in the availability. However, with expected commissioning of new generating units of higher capacity for example Hisar TPS (600 X 2 MW) towards the end of FY 2009-10, the availability within the state will witness a quantum jump.**

Further, the intervener also objected to the rate of energy generated by HPGCL which has shot up from Rs. 2.847/kWh in FY 2008-09 to Rs. 3.89 / kWh in FY 2009-10. To this HPGCL submitted that they have submitted a revised proposal @ average rate of Rs. 3.11/kWh which is only marginally higher than FY 2008-09 rates plus the fuel price adjustments allowed to them.

The Commission has considered the above submissions and is of the view that both the rates original as well as revised are in the nature of proposal for approval of the Commission. **The Commission, after taking into consideration all the relevant facts and figures put before it by the parties, shall determine the appropriate generation tariff for FY 2009-10.**

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**Depreciation and Re – payment of Loans:** The interveners contended that depreciation as well as cumulative repayment of loans has increased at an unusual rate. The depreciation claimed by HPGCL increased from Rs.1272.2 Millions in FY 2004-05 to Rs. 9532.7 Millions in FY 2007-08. Similarly, during the same period cumulative loan repayment increased from Rs. 2295.3 Millions to Rs. 10328.3 Millions. To this, HPGCL replied that the increase in depreciation as well as loan amount is primarily due to addition of PTPS Units 7 & 8 resulting in increase in cumulative depreciation.

**The Commission has considered the above submissions and is of the view that depreciation and hence the cumulative depreciation depends on addition / deletion to the gross fixed assets including the permitted capitalization during the year. Thus an increase in these would increase the amount of depreciation. One ought not to lose sight of the fact that the assets on which depreciation is charged contributes to increase in availability of power as well as turnover and income of the company. Further, a part of the additional asset is funded out of loan capital which has to be serviced by way of interest in addition to repayment obligations. Consequently, the cumulative loan repayment obligation too is bound to increase with each Capital Expenditure undertaken by the company for augmenting / renovating the existing assets or addition of new generating stations.**

**Deen Bandhu Chhottu Ram TPS (Yamunanagar) :** The interveners citing HPGCL's filing, contended that the dates of Commissioning of Unit 1 & 2 are 3/11/2007 and 29/3/2008 respectively. However, even after a lapse of more than one year the dates of commercial production have not been notified. In case of delay why penalty has not been imposed on the private EPC contractor. To this, HPGCL replied that the two units were synchronized as per the dates mentioned above. However, the relevant milestone is provisional taking over and final

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taking over of the generating units subject to Performance Guarantee (PG) test. So far, complete PG tests have not been conducted. For the delay in completion liquidated damages of Rs. 2044.6 Millions have been imposed on M/s Reliance Infrastructure Ltd – the EPC contractor for the project.

**The Commission has considered the above submissions and directs HPGCL to submit a copy of the contract with M/s Reliance Infrastructure Ltd. Till the final takeover of these units the tariff determined by the Commission will be provisional subject to final adjustments on completed cost basis.**

The issues relating to Return on Equity, R&M Schedules and other performance parameters raised by the interveners have been considered by the Commission at relevant places while taking a view on them for the purpose of determining generation tariff for FY 2009-10.

UHBVNL objected to the **Specific Fuel Oil Consumption (SFC)** for PTPS Unit 1-4 proposed by HPGCL at 4 ml/kWh. They pointed out that PTPS Unit 1-4 has reported less than 3 ml/kWh SFC in FY 2006-07 and FY 2007-08. In FY 2008-09 too SFC (up to September) was 2.88 ml/kWh. Thus the inefficient running of these stations create extra burden of Rs. 200.23 Millions on the consumers. **The Commission has noted the objection of UHBVNL and is of the view that the SFC for PTPS Unit 1-4 shall be considered as per HERC norms which is 2 ml/kWh. Consequently, no extra burden shall be passed on to the electricity consumers of Haryana.**

Objecting to the proposed Operation and Maintenance (O&M) expenses of PTPS Unit 1-4 and FTPS (Unit 1 & 3) UHBVNL submitted that in case of the former the O&M charges have been escalated by 134% while in the case of latter the escalation is to the tune of 72% in FY 2009-10. **The Commission has considered the objection of**

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**UHBVNL on the proposed O&M expenses and is of the view that latest norms in terms of Rupees per MW as per the revised CERC norms shall be considered while reckoning with station wise O&M expenses.**

On the issue of Station Heat Rate (SHR) UHBVNL submitted that the benchmark considered by HPGCL for FY 2009-10 in the case of PTPS Unit 1-4 and FTPS Unit 1&3 will cause extra burden on the consumers of Rs. 978.64 Millions by way of increase in coal cost over and above high transit loss of coal considered by them. **The Commission is of the view that SHR and coal cost including transit loss of coal (with some moderation) shall be considered in accordance with the HERC Terms and Conditions for determination of generation tariff, which is lower than the benchmark proposed by HPGCL hence no extra burden shall be passed on to the consumers.**

On the computation of Return on Equity (ROE) @ 14% UHBVNL has objected that HPGCL has erroneously computed ROE on closing proposed equity as on 31<sup>st</sup> March 2010. Given the actual financial status of the distribution companies and their inability to absorb the expenditure on ROE the same should be disallowed in FY 2009-10. **The Commission has considered UHBVNL's objections on ROE and is of the view that cost of HPGCL's generation including ROE is a pass through cost in the ARR of the Distribution companies i.e. UHBVNL & DHBVNL which in turn is recovered from the consumers.**

UHBVNL has also objected to the massive increase in the proposed Fixed Cost of PTPS Unit 1-4 and FTPS Unit 1&3. The percentage increase is 55% and 54% respectively. **The Commission has considered the objection and is of the view that with moderation in technical / financial parameters by the Commission the increase shall be restricted to a reasonable level.**

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## 2.5 Tariff Objective

The Commission issued a number of directives in its previous generation tariff order(s) dated 14/05/2004, 2/05/2005, 23/05/2006, 08.05.2007 and 21/04/2008. It has taken a serious view of the fact that quite a few directives have not been fully complied. **The Commission shall monitor compliance of the directives issued by it separately for which appropriate action has already been initiated.**

While determining generation tariff for FY 2009-10, the Commission has taken into consideration the filing of proposed tariff (FPT) dated 31<sup>st</sup> October 2008, supplementary information / clarifications provided by HPGCL dated 15/12/2008, oral submission / presentation made by HPGCL at the time of public hearing on 24/02/2008, the objections raised by the interveners and HPGCL's reply thereto as well as revised generation tariff application dated 4/02/2009. The Commission has made efforts to balance the interest of the utility as well as the consumers while determining the generation tariff for FY 2009-10 in the overall framework of the Terms and Conditions for Determination of Generation Tariff Regulations, 2008 notified on 19/12/2008.

The Commission is aware 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 efficient. The generation business must conform to technical and commercial rigors for ensuring availability of power at a reasonable cost to the electricity consumers of Haryana.

The Commission notes with concern that the PLF of PTPS Units 1-4 is still around 53.88% and of FTPS is 33.08% as against the CERC norm of 80%. Auxiliary power consumption at all the powerhouses except the new Units i.e. PTPS Unit 7 & 8, are way above the national norms. In the case of PTPS Units 1-4 and FTPS it is as high as 11.57% and 16.71% respectively. Specific Fuel Oil Consumption in the case of PTPS 1-4 is still around 3.72 ml/kWh and in the case of FTPS it is

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11.18 ml/kWh as against the CERC norm of 2 ml/kWh. The Station Heat Rate (SHR) of PTPS Unit 1-4 at 3470 Kcal/kWh, PTPS Unit 5 & 6 at around 2737 & 2735 Kcal/kWh and FTPS 4566 Kcal/kWh are way above the CERC norms and relaxed targets determined by the Commission ( as per the performance of HPGCL reported to the Commission up to December 2008).

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 implement the recommendations to improve upon various technical parameters. However, the follow up action was delayed and opportunity of benefits to be derived from energy audit by way of corrective action and consequent improved performance was lost.

## **2.6 State Advisory Committee (SAC)**

The Commission convened a meeting of the State Advisory Committee (SAC) constituted under Section 87 of EA 2003 was convened on 1/05/2009 in order to have the benefit of their views on various issues in respect of generation tariff for FY 2009-10. The members were briefed on the various aspects of HPGCL's generation tariff petition as well as their past performance. The members were unanimous in commending the achievements of HPGCL on new projects. However, they expressed concerns over non – achievement of the benchmarks set by the Commission especially by PTPS (Unit 1-6) and FTPS including high transit loss of coal. The Commission has kept in mind the comments / suggestions of the members while reckoning with various parameters for determining HPGCL's generation tariff for FY 2009-10.

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## 2.7 Plant Load factor (PLF)

While reckoning with PLF, the Commission has considered the contention of the intervener and HPGCL's reply thereto, that PLF of PTPS Unit 1-4 has been going down since FY 2006-07 i.e. from 66.59% declined to 49.46%. HPGCL submitted that the actual PLF of PTPS Units 1-4 during FY 2006-07 and FY 2008-09 (up to January 2009) was 66.59% and 66.98% respectively (excluding PTPS Unit 1 outage). The main reason for the decline in generation was because 110 MW PTPS Unit -1 was under shutdown from 25/09/2007 to 4/11/2008 for renovation, modernization and up rating (RMU) of the unit. PTPS Unit -1 after RMU is running at a PLF of above 80%.

An analysis of the performance during FY 2008-09 (up to December) as reported by HPGCL reveals that PLF of PTPS Units 1-4 is 53.88% as against 59.41% during FY 2007-08 and last seven years best achieved of 72.45% (FY 2003-04). The decline in PLF of PTPS (Unit 1-4) 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. PTPS Unit – 1, as per the presentation made by HPGCL on 24/2/2009 was re-commissioned on 4/11/2008 after renovation, modernization and up gradation by BHEL. Thus PTPS Unit-1, should operate at a PLF of over 80%. PTPS Unit – 2 has already been over hauled thus there is no reason that this unit should not perform at a PLF of over 80%. The PLF of PTPS Unit 3 & 4 as per the generation targets for March 2009 (Annexure B, Memo No. 184/GMP – 287/Vol – II dated 2/03/2009) works out to about 75%. As these units were performing satisfactorily during FY 2007 & FY 2008, there are no apparent reasons for these units to underperform vis – a-vis the benchmark of 80%.

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Thus considering the fact that the refurbishment of PTPS Unit – 1 and 2 have been completed, PTPS Units 3 & 4 are operating satisfactorily, as stated above, the Commission approves an average PLF of 80% for PTPS (Unit 1-4) in accordance with the HERC Regulations on Terms and Conditions of determining generation tariff, for the purpose of determining generation tariff for FY 2009-10. HPGCL is directed to ensure annual overhauling of the Units as per the schedule submitted to the Commission.

PTPS (Unit 5-8) have achieved PLF of over 89% up to January 2008. Thus the Commission allows PLF of 80% for PTPS Unit 5, Unit 6, Unit 7, and Unit 8 in accordance with the norms determined by the Commission for FY 2009-10, even though these units are capable of achieving much higher PLF. DCR TPP 1 & 2 at Yamuna Nagar, as per HPGCL's reply to the objections raised by the intervener, has achieved a monthly PLF (1<sup>st</sup> quarter of FY 2008-09) of 89.26%, 67.99% and 86.26%. Thus, the Commission for the purpose of determining generation tariff pegs the PLF of DCR TPP Unit 1 & 2 at 80% in accordance with the HERC norms for FY 2009-10.

FTPS (1 & 3) have achieved a PLF of 33.08 % in FY 2008-09 (up to December 2008) which is even less than 49.25% achieved during FY 2007-08. The decline in overall PLF of FTPS is largely influenced by poor performance of FTPS Unit – 2, which as reported by HPGCL has been phased out. **Considering the fact that FTPS Unit – 2 has been phased out and actual generation of FTPS Units 1 & 3 during October 2008 to January 2009, as reported by HPGCL, has averaged around 39 MUs corresponding to a PLF of little less than 50% thus the Commission pegs the PLF of FTPS Unit 1&3 at 50% for the purpose of determining generation tariff for FY 2009-10, which is lower than 55% as per HERC norms for FY 2009-10. The lowered norm is restricted to FY 2009-10 only in the light of the fact that FTPS Unit 1 & 3 are also likely to be phased out in FY 2010 – 11.**

The Commission has noted the contention of the intervener that HPGCL is not giving proper attention to the overhauling and R&M schedules resulting

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into deterioration in performance of the machines. To this contention HPGCL replied that annual maintenance schedules are prepared well in advance and are adhered to meticulously in view of demand and supply position in the state.

The Commission has noticed a lot of deviations in the actual maintenance schedule vis-a-vis the schedule placed before the Commission in its previous order(s) and directed HPGCL to adhere to the proposed schedule. The Commission has also examined the Maintenance Schedule for FY 2008-09 as per HPGCL's presentation during the public hearing held on 24/02/2009 and the Maintenance Schedule as per Annexure A of Memo No. 184/GMP-287/Vol – II dated 2/03/2009 and notes that these are at variance in the case of PTPS Unit – 2 & PTPS Unit – 4 submitted within a span of less than 15 days. HPGCL needs to note that R&M is a technical necessity rather than a function of demand and supply. **Any delay in the same hastens the deterioration of plant and machinery affecting its overall performance in the long run. Thus delays / deferment of R&M of the powerhouses and bringing the same back to the bus - bar (leading to generation loss) should be avoided.**

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 Powerhouse A,B & C) and 7.2 MW each (2 Units of Powerhouse D), has been considered at 50% in line with the generation target of 275 MUs proposed by HPGCL for FY 2009-10.

Table 2.4 provides a summary of the highest level of PLF achieved in the last 7 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 2009-10, revised proposal and HERC approval of PLFs for FY 2009-10 for various generating Units are given below in Table 2.4:-

**Table 2.4 Plant Load Factor (PLF - %)**

<b>Stations</b>	<b>Best Achieved</b>	<b>HPGCL's proposal for FY 2009-10</b>	<b>HPGCL's Revised proposal for FY 2009-10</b>	<b>HERC's Approval for FY 2009-10</b>
PTPS (Unit 1 to 4)	72.45	61.26	69	80
PTPS (Unit 5)	96.23	80	85	80
PTPS (Unit 6)	93.18	80	85	80
PTPS (Unit 7)	98.91	80	85	80
PTPS (Unit 8)	91.24	80	85	80
FTPS (Unit 1 - 3)	67.32	49.81	49.8	50*
DCR TPP (Yamuna Nagar Units I & II)	-	80	85	80

Note - 1\* pertains to FTPS Unit 1 & 3

Note – 2 CUF for WYC & Kakroi (hydel) 52% as per revised filing

## **2.8 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 9.71% in FY 2008-09 (up to 1/09). The interveners pointed out that the percentage of auxiliary power consumption has increased from 9.8% in FY 2006-07 to 10% presently. The Commission has examined the objection on this issue in the light of the data submitted by HPGCL and finds that the auxiliary power consumption has indeed declined marginally during the period mentioned by the intervener.

However, the Commission is of the view that 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 inappropriate management of auxiliaries and ought to be brought down in line with the HERC norms.

The Commission reviewed the performance of PTPS generating stations up to December 2008 and notes that the auxiliary power consumption in the case of PTPS 1 – 4 is stagnating at 11.57%, PTPS Units 5 & 6 at 9.42% and 9.21% while DCR TPP Unit 1 & 2 at 9.44% & 9.14% respectively are above the HERC norm of 9%. The auxiliary power consumption reported in the case of FTPS Unit 1 & 3 is whopping 16.91% as against the much relaxed HERC norm considering the vintage of the plant of 12.5%. The Commission has

pegged the target auxiliary power consumption as per HERC norms for FY 2009-10 and the revised CERC norms in the case of DCR TPS (1 & 2).

Table 2.5 provides a summary of the best achieved auxiliary power consumption during 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 2009-10, revised proposal and HERC approvals of auxiliary power consumption thereto for various generating units:-

**Table 2.5 Auxiliary Power Consumption (%)**

<b>Stations</b>	<b>Best Achieved</b>	<b>HPGCL's Proposal for FY 2009-10</b>	<b>HPGCL's Revised Proposal for FY 2009-10</b>	<b>HERC's Approval for FY 2009-10</b>
PTPS (Units 1 to 4)	11.05	11.82	11.49	11.0
PTPS (Unit 5)	8.83	9.12	9.12	9.0
PTPS (Unit 6)	8.94	9.61	9.61	9.0
PTPS (Unit 7)	8.36	9.0	8.5	9.0
PTPS (Unit 8)	7.60	9.0	8.5	9.0
FTPS (Unit 1-3)	12.56	16.91	14.29	12.5
DCR TPP (Unit I & II)	9.44 & 9.14	9.0	8.5	8.5
WYC & Kakroi	NA	0.5	1.0	0.5

## **2.9 Specific Fuel Oil Consumption (SFC)**

A perusal of performance of HPGCL as a whole reveals that SFC has shown considerable improvement from 5.97 ml/kWh in FY 2000-01 to 2.01 ml/kWh up to 01/09. However, in the case of PTPS Unit 1-4 SFC is still around 3.57 ml/kWh (up to 1/09) which is much higher than 2.93 ml/kWh reported for FY 2007-08. SFC in the case of FTPS Unit 1-3 is still at 10.72 ml/kWh for FY 2008-09 (up to January 08) which is substantially above 4 ml/kWh benchmark set by the Commission and 8.86 ml/kWh reported for FY 2007-08. In all other cases it is below HERC norms. The contention of the intervener that oil consumption has increased from 1.85 ml/kWh in FY 2006-07 to 3.91 ml/kWh is not factually correct hence the Commission is not going into the merits of the objection raised on this issue. More so, the Commission has pegged SFC as per the HERC norms and revised norms as notified by CERC in the case of generating stations of recent vintage.

Table 2.6 provides a summary of the best achieved specific fuel oil consumption in the last eight years in the case of PTPS unit 1 to 5 and FTSP 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 are presented in Table 2.6 below.

**Table 2.6 Specific Oil Consumption (ml / kWh)**

<b>Stations</b>	<b>Best Achieved</b>	<b>HPGCL's Proposal for FY 2009-10</b>	<b>HPGCL's Revised Proposal for FY 2009-10</b>	<b>HERC's Approval for FY 2009-10</b>
PTPS (Units 1 to 4)	2.92	4.0	3.28	2.0
PTPS (Unit 5)	1.0	2.0	1.28	2.0
PTPS (Unit 6)	0.54	2.0	1.0	2.0
PTPS (Unit 7)	0.42	2.0	1.0	1.0
PTPS (Unit 8)	0.35	2.0	1.0	1.0
FTSP (Units 1-3)	3.12	10.65	7.8	4.0
DCR TPP (1 &2)	NA	2.0	1.0	1.0

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 FTSP (Unit 1 to 3) to 2ml/kWh or lower. Efforts should also be made to achieve the national norms as recommended by CEA / CERC which ranges from 0.75 ml/kWh to 1.25 ml/kWh.

## **2.10 Station Heat Rate (SHR)**

The Station Heat Rate (SHR) of the existing generating stations of HPGCL excluding the recently commissioned PTPS unit 7 & 8 and DCR TPP Units 1 & 2 are much higher than the those allowed by HERC as well as the revised norms notified by CERC for determining fuel / variable cost of thermal generating stations including the powerhouses of older vintage.

An analysis of the SHR (up to December 2008) data submitted by HPGCL reveals that the desired levels of SHR have not been achieved in the case of PTPS Unit 1-6 and FTSP Unit 1-3. The SHR at PTPS Unit 1-4 in FY 2008-09 has stagnated around to 3470 Kcal/kWh i.e. same as that reported for FY 2007-08. Further, it is no way near the benchmark of 3200 Kcal set by the Commission for FY 2007-08 and 3100 Kcal/kWh allowed for FY 2008-09.

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The SHR of FTPS unit 1 & 3 in FY 2008-09 (up to December 2008) reported by HPGCL once again is nowhere near the benchmark set by the Commission i.e. 4566 Kcal/kWh against 4200 Kcal/kWh allowed by the Commission, which is alarmingly high. The intervener also pointed out that the proposed SHR in the case of PTPS and FTPS powerhouses are very high. With proper management and timely maintenance including repairs and refurbishments HPGCL can bring about substantial improvement in this crucial parameter. To this HPGCL responded that refurbishment of PTPS Unit 1 & 2 have been completed and R&M work of PTPS Unit 3 & 4 is planned to be carried out through World Bank Loan. Further, based on the recommendations of NTPC who carried out energy audit of PTPS Unit 5 & 6 necessary maintenance works have been carried out on Unit – 6 and is scheduled to be carried out on Unit – 5 during May/June 2009. As FTPS powerhouses are scheduled to be phased out no capital work is undertaken, hence SHR of the FTPS 1 & 3 (Unit – 2 has already been phased out) is expected to further deteriorate in FY 2009-10.

The Commission is aware of 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, the Commission has considered SHR of 3100 Kcal/kWh (restricted to FY

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2009-10 only) in respect of PTPS Unit 1-4 as against HERC norms of 2930 Kcal/kWh unit 1– 4 for working out the fuel / variable cost of generation in FY 2009-10.

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 trajectory set by the Commission in FY 2005-06, FY 2006-07 and FY 2007-08 and FY 2008-09. The CEA vide memo no. CEA/TETD-TT/2003/N-6 dated 25<sup>th</sup> 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 2008-09 (up to December 2008) both PTPS Units 5 & 6 have been operating at 92.3% & 89.23% 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 the Commission’s 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. HPGCL has still not provided the full energy audit report of PTPS Unit 5 & 6 conducted by NTPC. However, it is observed from the recommendations of NTPC attached with HPGCL’s supplementary information dated 15/12/2008 that huge potential for efficiency improvement including those of boiler and turbine exists in case the short term and long term corrective measures are adopted.

The Commission expects that in the light of implementation of the recommendations of the energy audit, HPGCL would improve upon the SHR in FY 2009-10. **Consequently, as an exception, limited to FY 2009-10, the Commission allows SHR of 2600 Kcal/kWh for PTPS Unit 5 & 6.**

The Commission has noted that the SHR of PTPS Unit 7 & 8 has been 2459 Kcal/kWh & 2453 Kcal/kWh in FY 2008-09 (up to December 2008) respectively which is well within the HERC norms as well as the CERC norms. Consequently, the Commission pegs SHR at 2500 Kcal/kWh for PTPS Unit 7 & 8.

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DCR TPP unit 1 & 2, as reported by HPGCL, are yet to be finally taken over from the EPC contractor pending Performance Guarantee test. The Commission has taken serious note of the fact that earlier date of commercial operation was reported as 1/04/2008 and 15/05/2008 respectively and prior to that the reported dates were 1/12/2007 and 28/02/2008. Now, in response to the objection raised by the intervener HPGCL has stated that the milestones are not COD but provisional takeover and final takeover. HPGCL should ensure that all physical and financial obligations are fulfilled by the EPC contractor, penalty, if any, are duly levied and timely collected and responsibilities for generation loss that might have occurred duly fixed. HPGCL should also ensure that evacuation & dispersal arrangements are in place before final takeover of the plant. **The Commission for determining generation tariff, on a provisional basis, allows SHR of 2500 Kcal/kWh for the above Units for FY 2009-10. As and when DCR TPP Units are finally taken over by HPGCL, they shall inform the Commission the relevant details including completed capital cost. The Commission shall adjust the difference, if any, between the provisional tariffs determined by it so far and the final tariff.**

The Commission allowed SHR of 4200 Kcal/kWh in respect of FTPS (unit 1-3) in FY 2008-09. 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 SHR reported was 4801 Kcal/kWh and 4566 Kcal/kWh up to December 2008. Thus, there is no consistency in the year to year or month to month SHR of FTPS. As FTPS Unit 1 & 3 (Unit 2 has already been phased out) are expected to be phased out in FY 2010 – 11, and the fact that no fresh investment in efficiency improvement measures is envisaged, the Commission allows SHR of FTPS Unit 1 & 3 at 4000 Kcal/kWh in FY 2009-10 as against the HERC norms of 3970 Kcal/kWh.

As the Commission has been allowing entire capital expenditure as proposed by HPGCL and justifiable operating expenditures, it expects sustained improvement in the operating parameters including the SHR.

Table 2.7 provides summary of the best achieved SHR in the last 9 years in case of PTPS units 1 to 5 & FTPS 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 2009-10 and HERC approval thereto for various generation Units are presented in Table 2.7 below:-

**Table 2.7 Station Heat Rate (Kcal / kWh)**

<b>Station</b>	<b>Best Achieved</b>	<b>HPGCL Proposal for FY 2009-10</b>	<b>HPGCL Revised Proposal for FY 2009-</b>	<b>HERC Approval for FY 2009-10</b>
PTPS (Unit 1-4)	3341	3492	3299	3100
PTPS (Unit 5)	2705	2750	2750	2600
PTPS (Unit 6)	2701	2745	2750	2600
PTPS (Unit 7)	2460	2500	2500	2500
PTPS (Unit 8)	2453	2500	2500	2500
FTPS (Units 1 & 3)	3180	4800	4440	4000
DCR TPP (1&2)	NA	2500	2500	2500

## 2.11 Energy / Variable Charge

The Energy / variable charge has been calculated based on the parameters approved by us for FY 2009-10. The details are presented in table 2.8 & 2.9.

**Table 2.8 Energy / Variable Charges (FY 2009-10)**

Parameters	Unit	Derivation	PTPS							
			Unit 1	Unit 2	Unit 3	Units 4	Unit-5	Unit-6	Unit-7	Unit-8
Gross Generation	MU	A	826	771	771	771	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	735	686	686	686	1339	1339	1594	1594
Station Heat Rate (SHR)	Kcal/kwh	B	3100	3100	3100	3100	2600	2600	2500	2500
Specific Oil Consumption	ml/kwh	C	2	2	2	2	2	2	1	1
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	4003	4003	4003	4003	4003	4003	4003	4003
Overall Heat	G.cal	$F=(A*B)$	2560600	2390100	2390100	2390100	3826368	3826368	4380000	4380000
Heat from Oil	G.cal	$G=(A*C*D)/1000$	16505	15406	15406	15406	29407	29407	17504	17504
Heat from Coal	G.cal	$H=(F-G)$	2544095	2374694	2374694	2374694	3796961	3796961	4362495.8	4362496
Oil Consumption	KL	$I=G*1000/D=A*C$	1652	1542	1542	1542	2943	2943	1752	1752
Coal Consumption	MT	$J=(H*1000/E)/0.985$	645225	602262	602262	602262	962973.4	962973	1106403	1106403
Cost of Oil per KL	Rs/KL	K	30152	30152	30152	30152	30152	30152	30152	30152
Cost of Coal (inc LADT)	Rs/MT	L	2700	2700	2700	2700	2700	2700	2700	2700
Total Cost of Oil	Rs .Mln	$M=(K*I)/10^6$	50	46	46	46	88.75	88.75	52.83	52.83
Total Cost of Coal	Rs.Mln	$N=(J*L)/10^6$	1742	1626	1626	1626	2600	2600	2987	2987
Total Fuel Cost	Rs.Mln	$O=M+N$	1792	1672	1672	1672	2689	2689	3040	3040
Fuel Cost/Kwh	Rs.	$P=O/A1$	2.44	2.44	2.44	2.44	2.01	2.01	1.91	1.91

**Table 2.9 Energy / Variable Charges (FY 2009-10)**

Parameters	Unit	Derivation	FTPS		DCR TPP	DCR TPP	WYC
			Unit 1	Unit 3	(1)	(2)	
Gross Generation	MU	A	241	241	2102	2102	275
Auxiliary Energy Consumption	%		12.50%	12.50%	8.50%	8.50%	0.50%
Generation (Ex-bus)	MU	A1	211	211	1923	1923	274
Station Heat Rate (SHR)	Kcal/kwh	B	4000	4000	2500	2500	NA
Specific Oil Consumption	ml/kwh	C	4	4	1	1	NA
Gross Calorific Value of Oil	Kcal/litre	D	10000	10000	9991	9991	NA
Gross Calorific Value of Coal	K.cal/Kg	E	4017	4017	4003	4003	NA
Overall Heat	G.cal	F=(A*B)	964000	964000	5255000	5255000	NA
Heat from Oil	G.cal	G=(A*C*D)/1000	9640	9640	21001	21001	NA
Heat from Coal	G.cal	H= (F-G)	954360	954360	5233998.9	5233998.9	NA
Oil Consumption	KL	I=G*1000/D=A*C	964	964	2102	2102	NA
Coal Consumption *	MT	J=(H*1000/E)/0.985 & 975	243672	243672	1327431	1327431	NA
Cost of Oil per KL	Rs/KL	K	37187	37187	29364	29364	NA
Cost of Coal	Rs/MT	L	3100	3100	2109	2109	NA
Total Cost of Oil	Rs .Mln	M=(K*I)/10^6	35.85	35.85	61.72	61.72	NA
Total Cost of Coal	Rs.Mln	N=(J*L)/10^6	755.38	755.38	2799.55	2799.55	NA
Total Fuel Cost	Rs.Mln	O=M+N	791.23	791.23	2861.27	2861.27	NA
Fuel Cost/Kwh	Rs.	P=O/A1	3.75	3.75	1.49	1.49	NA
* Transit loss PTPS & DCR TPP 1.5% & FTPS 2.5%							

**2.12 Transit loss of coal:**

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

Units	HERC Approval FY 2008-09	HPGCL Actual FY 2008-09 (up to Nov. 08)	HPGCL Proposal FY 2009-10	HPGCL Revised Proposal FY 2009-10	HERC Allowed FY 2009-10
PTPS (%)	2	1.95	4.09	2	1.5
FTPS (%)	2.5	11.66	6.62	6.62	2.5

HPGCL has sought coal transit loss of 4.09% for PTPS & DCR TPP and 6.62% for FTPS, revised to 2% and 6.62% respectively for FY 2009-10. As per the presentation made by HPGCL coal transit loss declined from 6.58% in FY 2001-02 to 3.06% in FY 2006-07, it shot up to 6% in FY 2007-08 before witnessing a steep decline to 2.87% in FY 2008-09 (Up to January 09). The year to year figures do not show any consistent trend i.e between FY 2001-02 and FY 2002-03 the coal transit loss witnessed a marginal decline from

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6.58% to 6.48% then it suddenly dipped to 4.19% in FY 2003-04. Thereafter up to FY 2005-06 it crept up to 4.79% before dipping to 3.06% in FY 2006-07. However, in FY 2007-08 it suddenly shot up to 6% without any apparent reasons and then it suddenly crashed to a level of 2.87% in FY 2008-09 (Up to January 2009). **The inconsistency in the transit loss of coal from year to year needs to be analysed and justified by HPGCL.**

While objecting to the coal transit loss the intervener submitted that HPGCL has considered it on much higher side as compared to HERC norms as well as the CERC norm for non – pithead thermal generating stations. Non achievement of the norm has resulted in lost opportunity of saving Rs. 1500 Millions, thereby burdening the electricity consumers by this avoidable loss. They submitted that the Commission should not deviate from the HERC/CERC norm of 0.8%

The Commission has considered the above submissions as well as the reply submitted by HPGCL. The Commission determined a three year trajectory with an annual reduction of 0.5%. Consequently, in FY 2009-10 the coal transit loss of coal should have been reined in to the HERC norm of 0.8%.

The Commission, in light of the above, and considering the fact that the actual coal transit loss for HPGCL as a whole is 2.87% in FY 2008-09 i.e 1.97% in the case of PTPS and DCR TPP powerhouses while after phasing out of FTPS Unit 2, the requirement of coal at FTPS operating at about 50% PLF would be comparatively small, has considered 1.5% coal transit loss as one time exception limited to FY 2009-10 only for determining fuel cost in the case of powerhouses at Panipat & Yamunanagar and 2.5% for FTPS. HPGCL should take all measures to reduce the transit loss of coal to the HERC norms as no relaxation may be considered by the Commission thereafter.

The Gross Calorific Value (GCV) of coal and fuel oil is based on the average value of Gross Calorific Value reported by HPGCL. The basic price of coal and oil has been worked out after considering the weighted average rates as per the submissions of HPGCL at the time of public hearing held on 24/02/2009.

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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 2009-10 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 half yearly basis by HPGCL on the basis of GCV of coal / oil received and burnt and their respective landed cost(s) as per the HERC 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.

### **2.13 Fixed Cost**

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

### **2.14 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 light of revised per MW CERC norms the Commission has considered Rs. 2.62 mln / MW for PTPS (1-4), Rs. 1.82 mln / MW for PTPS (5 to 8), Rs. 3.275 mln / MW for FTPS (1&3), Rs. 1.6 mln / MW for DCR TPP (1&2) while the O&M expenses allowed by the Commission in the case of WYC & kakroi is as proposed by HPGCL. The O&M norm revised by the CERC has already considered reasonable compensation for pay hike which has been factored in hence there is no need for separate provisioning. Henceforth comprehensive R&M cost shall be considered by the Commission only when accompanied with cost – benefit analysis. Any

difference in employees cost due to implementation of the recommendations of the sixth pay commission may be trued up in the next tariff review on availability of actual audited figures.

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 2009-10)**

	PTPS					DCR TPP	FTPS	WYC & Kakori
	Unit 1-4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 1&2	Unit 1 &3	
HPGCL Revised Proposal for FY 2009-10 (Rs. mln)	995.54	466.87	466.87	555.79	555.79	960	860.12	200.23
HERC Approval for FY 2009-10 (Rs mln)	1173	382.2	382.2	455	455	480 & 480	180.13 & 180.13	200

### 2.15 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 adopted by HERC in its Terms and Conditions of determining generation tariff. The revised CERC regulations, however, do not provide for AAD. The Commission will review the revised CERC depreciation rates as well as provisions for AAD in the next rate case. The details are presented in Table 2.12.

HPGCL should ensure that the proposed repayments are made in time. In the event it does not make the proposed repayments during FY 2009-10, any excess amounts allowed during the current year shall be recovered in the subsequent ARR with interest. The depreciation and AAD allowed for

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

The Commission, in line with the HERC / 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.

### **2.16 Interest and Finance Charges on Loan**

HPGCL has claimed Rs. 3844.48 Millions as interest on long-term loans for FY 2009-10. The Commission examined the details of all the long-term loans including repayments and draws and respective interest rates. Based on the loans arrived at as the difference between opening and closing balance during FY 2009-10 and the respective interest rates, the Commission allows Rs. 3844.49 Millions as interest & finance charges on loans during FY 2009-10.

### **2.17 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 2009-10.

The Commission has considered interest on working capital related borrowings as per the actual cost of short term borrowing of HPGCL which is 200 basis points below the PLR, the prime lending rates of nationalized banks are around 12.75% and are showing signs of reducing, resultantly, Rs. 1319.86 Millions is allowed as interest on normative working capital @ 11%. The computation of normative working capital and interest thereon is presented in table 2.11 below:

**Table 2.11 Normative Working Capital FY 2009-10 (Rs. Millions)**

		PTPS Units 1to4	PTPS Units 5	PTPS Unit 6	PTPS Unit 7	PTPS Unit 8	FTPS Unit 1 &3	DCR TPP(Unit 1 & 2)	WYC & Kakroi
Coal Stock	2 months	1103.33	433.34	433.34	497.88	497.88	251.79	933.18	0
Oil Stock	2 months	31.33	14.79	14.79	8.81	8.81	11.95	20.57	0
O&M Expenses	1 months	97.95	31.85	31.85	37.92	37.92	30.02	80	16.67
Spares	1% of historical cost #	40.4	33.01	139.07	112.7	112.7	9.33	269.67	16.56
Receivables	2 months	1464	573	725	810	810	349	1840	67.94
W/C Requirement		2737	1086	1344	1467.3	1467.3	652.1	3143.4	101.17
Int (@11%		301.1	119.5	147.8	161.4	161.4	71.73	345.8	11.13

# Capital spares allowed facilitating minimum risk and outage time.

## 2.18 Return on Equity (ROE)

HPGCL has claimed Rs. 1187.04 million @ 14% as return on equity for FY 2009-10. The Commission has examined the amount of equity existing as on 31/03/2009 and the proposed addition to the same during FY 2009-10. Based on the average of opening and closing equity @ 10% ROE is allowed to HPGCL for FY 2009-10. The Commission has pegged ROE at 10% as it has allowed much relaxed norms in the case of PTPS (1-6) and FTSP. It expects that the ROE allowed should not be diverted to fund losses as in the past and all out efforts needs to be made to achieve the norms set by the Commission in this order.

## 2.19 Fixed Expenses for FY 2009-10

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

**Table 2.12 Fixed Expenses for FY 2009-10 (Rs. Millions)**

EXPENSES	PTPS- 1to4	PTPS 5	PTPS 6	PTPS 7	PTPS 8	DCR TPS 1	DCR TPS 2	FTPS 1& 3	WYC & Kakroi)
Operation & Maintenance (O&M)	1173	382.2	382.2	455	455	480	480	360.25	200
<i>repair and maintenance</i>									
<i>employees cost</i>									
<i>Administrative</i>									
Depreciation	181.77	83.77	358.96	384.68	384.68	420.98	420.98	26.24	45.92
Interest & Finance	149.99	98.18	403.76	422.11	422.11	1117.88	1117.88	32.30	80.28
W/C Interest* at 11%	301.1	119.5	147.8	161.4	161.4	172.9	172.9	71.35	11.13
ROE (@ 10%	72.94	19.97	175.74	189.5	189.5	240.03	240.03	10.16	44.91
Fixed Cost	<b>1878.8</b>	<b>703.62</b>	<b>1468.46</b>	<b>1612.69</b>	<b>1612.69</b>	<b>2431.79</b>	<b>2431.79</b>	<b>500.3</b>	<b>382.24</b>
Advance Against Depreciation	98.3	45.3	194.12	208.04	208.04	227.67	227.67	14.19	24.84
Total Fixed Cost	1977.1	748.92	1662.58	1820.73	1820.73	2659.46	2659.46	514.49	407.08

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### **3 CONCLUSION**

It is observed that PLFs of PTPS units 1 to 7 have declined in FY 2009-10 as compared to FY 2008-09. The main reasons for decline in PLFs are extended shutdowns of PTPS unit 1 for R&M & unit 4 for annual overhauling as compared to the planned durations. As already advised from time to time, HPGCL need to improve their planning and implementation of overhauling and R&M activities so as to ensure zero gaps in executing the plans.

The Commission notes the improvement achieved by HPGCL as compared to previous year in reducing the auxiliary power consumption at PTPS units 1 to 4, 6 & 7 and the oil consumption in PTPS units 5 to 8. Similar efforts are required for reducing auxiliary power and specific oil consumption at other Units as well.

The excessive station heat rates prevailing at PTPS units 1 to 4 is a cause of concern. As advised from time to time, HPGCL need to focus on preventive maintenance, reduction in forced outages, energy audits and remedial measures accordingly. It appears HPGCL has not heeded the advice of the Commission to form an energy audit group of trained engineers for carrying out energy audits of various units on regular basis.

The Commission has taken note of transit loss of coal at PTPS which is still much higher as compared to HERC norms. The coal transit loss at FTPS is alarmingly high. A lot needs to be done by HPGCL to bring the transit loss of coal to the norm of 0.8% fixed by HERC as well as CERC by pursuing the matter with the Central Ministries of Coal and Railways at the level of Chief Minister and by taking other measures suggested in the ARR order for FY 2008-09.

The Commission is concerned about the poor performance and frequent breakdowns of 2x300 MW DCRTPS, Yamunanagar units which were commissioned in FY 2007-08. These units, during FY 2008-09, have achieved very low PLFs of 68.66% & 69.53% respectively. The auxiliary

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power consumption at 9.34% & 9.32% respectively is on the higher side and specific oil consumption at 6.81 & 5.74 ml/kWh respectively is alarmingly high. The only redeeming feature is the achievement of SHR at 2440 Kcal/kWh which is better than the norm fixed by the Commission. The CODs of DCR TPS Unit 1 & 2 have been given as 14.04.2008 and 24.06.2008 respectively on completion of trial run operations. However, there is abnormal delay in completion of PG tests of these units and these Units due to which the Units have not been taken over by HPGCL so far. Detailed report on the reasons for poor performance of these units and for abnormal delay in taking over the units may be submitted and the Commission may be apprised of the steps being taken to bring the performance of these units at par with the contracted standards and the time frame thereof.

HPGCL had carried out refurbishment of PTPS unit 2I during FY 2002-03 through M/s ABB who terminated the contract without finishing the works. The balance of works were got completed through M/s BHEL and the desired improvements have not been achieved. Subsequently, refurbishment of PTPS unit I has been carried out through M/s BHEL during FY 2007-08. In this case also, the performance of the unit after refurbishment has not been up to the mark. The SHR of PTPS unit I which was 3342 Kcal/kWh for FY 2006-07 before refurbishment has increased to 3480 Kcal/kWh for FY 2008-09 against the contracted provision of around 2346 Kcal/kWh. Although the unit was commissioned in 11/08, the PG Tests are yet to be completed. HPGCL should carry out cost-benefit study with reference to cost incurred on the refurbishment of both the units mentioned above and the benefits achieved in financial terms and submit a copy of the same to the Commission for information. The status of arbitration case going on for resolving the disputed claims / counter claims arising out of termination of contract for Unit 2 by M/s ABB may also be intimated.

The Commission notes that it has, from FY 2004-05 to FY 2007-08, allowed Rs. 2434.93 Millions as O&M expenses and Rs. 895.56 Millions as interest / repayments of Capital Expenditure for PTPS (1-4), similarly Rs. 895.56 Millions & Rs. 1162.27 Millions respectively were allowed for PTPS (5) and Rs. 927.47 Millions & Rs. 2328.5 Millions respectively were allowed for PTPS (6). In the light of the Capital Expenditure including R&M allowed for different

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power plants at Panipat and Faridabad, HPGCL is directed to conduct an impact assessment to establish the benefits that accrued in terms of station wise efficiency gains. The report should be submitted within three months from the date of this order.

HPGCL also needs to focus on Human Resources Development. Every year a number of trained technical officers & subordinate staff are retiring and many new generation projects are coming up. HPGCL must have a comprehensive plan to recruit requisite technical personnel on regular basis and get them trained at reputed training institutes as well as at manufacturer's works. HERC may be apprised of any plan prepared by HPGCL to meet with the current & future demand of trained manpower.

HPGCL have already phased out FTPS unit 2 on account of poor performance. The performance of other two units is also going from bad to worse. The annual PLF of 42.61%, auxiliary power consumption of 16.32%, specific oil consumption at 9.62ml/kWh and station heat rate at 4518 Kcal/kWh have resulted in very high cost of generation. HPGCL intends to phase out FTPS Units 1 & 3 on Commissioning of RGTPP, Hissar. HPGCL may consider early phasing out the remaining two units of 55 MW each by making alternate arrangements and utilize the trained manpower so spared at other projects of HPGCL.

The Commission has noted the improvement in performance of HPGCL since its inception. Particularly, the performance of PTPS units 7 & 8. HPGCL is advised to look into certain deficiencies in individual units as pointed out above so that there is further improvement in the overall performance.

The Commission notes with satisfaction the efforts being made by HPGCL in the area of generation capacity addition to meet with the growing demand of power in the state and takes note of HPGCL's achieving the major milestones of boiler drum lifting and hydraulic tests of 2 x 600 MW RGTPP, Khedar, Hisar much ahead of schedules. However, the Commission would like to remind HPGCL that these milestones were achieved ahead of schedules at 2 x 300 MW DCRTPP, Yamunanagar also, but later on the final commissioning,

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stabilization, trial run and takeover of the units have been delayed. HPGCL is advised to draw lesson from their experience at DCRTTP and ensure that all the remaining milestones of RGTPP are satisfactorily completed well in time.

Based on the parameters approved by the Commission, the tariffs for FY 2009-10 are as under:

**Table 3.1 Approved Tariffs (FY 2009-10)**

	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	Total HPGCL
Energy Charges (Rs./kWh)	2.44	2.01	2.01	1.91	1.91	1.49	3.75	-	1.94
Fixed Charges (Rs./kWh)	0.71	0.56	1.24	1.14	1.14	1.38	1.22	1.49	1.08
Total Charges Rs / kWh	3.15	2.57	3.25	3.05	3.05	2.87	4.97	1.49	3.02

**The generation tariff(s) approved for FY 2009-10 shall be implemented w.e.f 1st April 2009.**

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.

This order is signed, dated and issued by the Haryana Electricity Regulatory Commission on 18<sup>th</sup> May 2009.

Date: 18/05/.2009

Place: Panchkula

Rohtash Dahiya

(Member)

T. S. Tewatia

(Member)

Bhaskar Chatterjee

(Chairman)